

**HBEH 860: RESEARCH PROPOSAL DEVELOPMENT**

**Department of Health Behavior  
UNC Gillings School of Global Public Health**

**Spring 2017**

**Meeting Time:** Fridays, 9:05 am – 11:55 am  
**Location** Rosenau 332

**Course Instructor:** Kate Muessig, PhD  
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**Teaching Objectives:**

HBEH 860, Research Proposal Development, is a required course for doctoral students in Health Behavior. HBEH 860 is a pragmatic skills-building course that aims to provide a mentored, guided structure for developing a significant research project and leads students through the steps of assembling a grant application through an NIH mechanism: the predoctoral National Research Service Award (NRSA) (F31). The course also enhances readiness to undertake the doctoral dissertation.

A number of students are able to use the work they create in this course toward a full NRSA application to submit to the NIH in the summer or fall following the course, and/or to have their proposal serve as the basis for a dissertation or grant application for another funding agency.

Given these larger purposes, the primary teaching objectives of HBEH 860 are to develop or increase students' skills and ability to:

- (1) Integrate detailed components of research methods (e.g., research questions and hypotheses; constructs, variables and relations; measurement reliability and validity; sampling; study design; and statistical analyses) and apply them to the development of an original research study and the preparation of a research grant proposal;
- (2) Develop and write an NIH career development award (in this case a predoctoral NRSA);
- (3) Participate effectively both as an applicant to, and as a reviewer for, NIH and other funding agencies; and
- (4) Map out steps towards the larger arc of a research career.

**Course Description:****NRSA as a Focal Point of HBEH 860**

Through the course of the semester, each student will develop key parts of the NRSA application using the most recent guidelines available at: <https://grants.nih.gov/grants/guide/pa-files/PA-16-309.html> . We have chosen the NRSA as the appropriate grant mechanism for you to work with because:

- (1) Many students in our department submit NRSA's and could therefore benefit from formal training on this mechanism;
- (2) Many of the NRSA requirements are transferable to other dissertation award mechanisms; and
- (3) The career development section of the NRSA is relevant to writing a mentored career development award (e.g., a K01), the mechanism that early investigators are most likely to write during their first academic or research appointments.

**Ground Rules for Choosing a Topic:**

Upon completion of the course, you will have gained experience in the most difficult phases of research, namely: transforming a research interest into a testable research question and developing a sound and feasible study design to address that question. The experience is intended to enhance your readiness to undergo the dissertation research process and it exposes you to a typical expectation of most doctoral level jobs: the preparation of research grant proposals. To ensure that you receive the fullest experience possible through HBEH 860, proposals for this course must fit within the following parameters:

- (1) This course is oriented toward the development of proposals for quantitative studies, but studies may also include qualitative component(s);
- (2) Proposed studies must be explanatory (tests of associations) or evaluation studies, not descriptive studies;
- (3) Proposals can be primary data collection or secondary analysis of data;
- (4) If the proposal is a primary data collection project, it needs to be feasible to accomplish with only salary support for yourself (which is what the NRSA provides), or you need to demonstrate that there is additional funding available to support the data collection.

**Your Faculty Research Advisor:**

You will invite a member of the HBEH faculty to serve as an advisor for this course. This individual will work with you at defined points in the semester to help guide you and offer feedback throughout the proposal writing process. At a minimum, they should agree to meet with you and/or provide written feedback on: an early draft of your Specific Aims page, a final draft of your Specific Aims page, and a detailed outline or draft of your Research Strategy. Please note that faculty are encouraged to provide structured feedback but not to rewrite or edit your proposal sections. It is your responsibility to set up meetings and plan a schedule for submitting drafts and receiving feedback. Planning these meetings in advance is recommended. If you are having difficulty with your faculty advisor, please notify the course instructor.

Throughout the proposal-writing process, you will submit drafts of sections of the application to receive feedback from the course instructor and TA, your classmates, and your Faculty Advisor. In addition to traditional instructor-led classes, many class sessions will feature student and faculty panels, guest speakers, in-class work on proposal sections, and student presentations.

**Honor Code:**

All students are expected to abide by the Honor Code for the University of North Carolina at Chapel Hill (<https://studentconduct.unc.edu/>). Special instructions regarding academic dishonesty may be found in the *Instrument of Student Judicial Governance*, Section II.B. (<http://instrument.unc.edu/>). Please speak with the instructor if you have any questions about these policies and procedures.

**Please note, to help support your learning in this course, many faculty, alumni, and fellow students have contributed examples of research proposals they have written in the past. We remind you that these documents constitute their intellectual property and, as such, we ask that you not share copies of these research proposals (or any excerpts from them) with any other individual, and that you treat these documents with the full respect and academic integrity described in UNC's Honor Code. Thank you.**

**Readings and Materials:**

There are no required textbooks for this course. All reading materials and supplemental materials will be available on Sakai.

**Assignments and Grading:**

Please submit all assignments (graded and non-graded) in the "Assignments" section of Sakai. The major assignment for the course is a completed NRSA research proposal of 7 pages (1 page Specific Aims, 6 pages Research Strategy). Additional required elements of the NRSA include a description of the goals for fellowship training and career and a description of research experience (called: "Applicant's Background and Goals for Fellowship Training", 6 pages).

You are expected to prepare and submit drafts of different sections of the NRSA application at various points in the semester. Even though these assignments are not given a formal grade, you are expected to submit them on time; inability to maintain deadlines for non-graded assignments will be reflected in the final grade (see below) and will limit your ability to receive feedback in a timely fashion.

**For non-graded assignments, no credit will be received for assignments that are submitted more than one hour late without prior approval for an extension from the instructor.**

**For graded assignments, late assignments without prior approval will be marked down 2 points for each 24-hour period or portion thereof.**

You are responsible for emailing the TA, instructor, and working group members if you have an unavoidable conflict and cannot come to class. If you need to miss class, you are still responsible for submitting assignments on time including providing peer feedback to your workgroup members.

**Non-graded Assignments Due Dates:**

<b>Non-Graded Assignment</b>	<b>Due Date</b>	<b>Description</b>
Draft Student Research Ideas	Due on Sakai by 9:00 AM on Friday, 1/13	Brief summary of a proposed research idea (~1 paragraph): Describe the health problem; make a statement or two about what is known and what is not known related to your focus; state why it would be important to fill that gap; state an overall study objective that links to the gap. If you are undecided at this point you may develop two research ideas (1 paragraph each).
Developed Student Research Ideas	Due on Sakai and emailed to workgroup by 5:00 PM on Tuesday, 1/24	Brief summary of a proposed research idea (~1 page): Describe the health problem; make a statement or two about what is known and what is not known related to your focus; state why it would be important to fill that gap; state an overall study objective that links to the gap; state 4 or 5 possible research questions, specifying the specific variables and the level of measurement of each, that address gaps in the research area. Provide a few possible specific aims that would capture the research questions and a brief description of the dataset to be used or methods of data collection.
Developed Student Research Ideas Peer Reviewer Forms	Due on Sakai and emailed to workgroup by 9:00 AM Friday, 1/27	Complete one Brief Research Ideas Peer Reviewer Form for each person in your group.  In class on Jan. 27, students and the instructors will provide feedback on the clarity, significance, and feasibility of the ideas; suggestions for improvement; match between the data set/methods and the aims; and next steps.
Draft Specific Aims due to your Workgroup	Due on Sakai and emailed to workgroup by 5:00 PM Tuesday, 1/31	A rough draft of the Specific Aims section (1 page max; must include 2 or 3 aims). The document should address the problem and research gap being addressed, the study aims, the reason why the aims are important to address, and an explanation of how your study is significant in light of existing studies. Aims will be discussed in workgroups on February 3.
Peer Reviewer Specific Aims Feedback Form	Due on Sakai and emailed to workgroup by 9:00 AM Friday, 2/3	Complete one Peer Reviewer Specific Aims Feedback form for each person in your group.
Refined Specific Aims	Due on Sakai by 5:00 PM Tuesday, 2/21	Submit refined Specific Aims section on Sakai for instructor.
“Final” Specific Aims	Due on Sakai and to Faculty Research Advisor by	Submit “final” Specific Aims to the Faculty Research Advisor.

	5:00 PM Tuesday, 3/7	
Draft Research Strategy (Significance and Approach)	Due on Sakai and emailed to workgroup by 5:00 PM on Tuesday, 3/21	The Research Strategy should include the study significance, aims and hypotheses, and literature justifying/ supporting them, including the theoretical base and methods for reaching the aims (study design, sample size justification, data source/data collection, measures, statistical analysis for each aim, and statement of feasibility) (6 pages max). Please attach the most recent version of your Specific Aims section to this document.  In class on March 24, your workgroup will provide feedback on the submitted document and the Instructors will provide feedback during the individual meetings (scheduled for the week of March 27).
Peer Reviewer Research Strategy Feedback Form	Due on Sakai and emailed to workgroup member by 9:00 AM on Friday, 3/24	Complete Peer Reviewer Research Strategy (Significance & Approach) Feedback Form for <u>one person</u> in your group.
Revised Research Strategy (Significance and Approach)	Due on Sakai and to Faculty Research Advisor by 5:00 PM Tuesday, 4/4	Submit your revised Research Strategy, including the most recent Specific Aims section, to your Faculty Research Advisor.
Draft Abstract	Due in class by 9:00 AM on Friday, 4/7	Complete draft abstract and have it printed for class by 9:00 AM on Friday, 4/7.

### Graded Assignments:

Graded Assignment	Due Date	Points
<b>Class participation:</b>		
<ul style="list-style-type: none"> <li>Come prepared for classes and engage with class discussions and guest speakers</li> </ul>	Multiple dates	15
<ul style="list-style-type: none"> <li>Turning in interim non-graded assignments on due dates. * No credit will be given for assignments submitted more than 1 hour late without prior permission from the instructor.</li> </ul>	Multiple dates	25
<ul style="list-style-type: none"> <li>Works-in-Progress presentation – Specific Aims</li> </ul>	Friday, 2/17, by 8:00 AM	5
Graded Assignment	Due Date	Points

Applicant's Background and Goals for Fellowship Training (6 pages)	Friday, 4/28 by 5:00 PM	15
Research Proposal – Abstract (no longer than 30 lines), Specific Aims (1 page), Research Strategy (6 pages), References (no limit)	Friday, 4/28 by 5:00 PM	40 (Late assignments will be marked down 2 points per each 24-hour period or portion thereof)

### Course Schedule:

Date	Topics to be Covered	Class Preparation	Assignments Due
1-13	<p>Overview of the course</p> <p>Student topics and Faculty Research Advisors</p> <p>Overview of NRSA</p> <p>Grid for secondary data analysis</p>	<p>Read: Sandler RS. Writing Clinical Research Grant Applications. <i>Inflammatory Bowel Diseases</i>, 2002, 8(3):196-200).</p> <p>Read: Inouye SK, Fiellin DA. An Evidence-Based Guide to Writing Grant Proposals for Clinical Research. <i>Annals of Internal Medicine</i>, 2005, 142, 4.</p> <p>Skim: Marissa Hall Resubmission (on Sakai in Resources/NRSA Examples/Resubmissions)</p> <p>Bring to class or have on your computer:</p> <ol style="list-style-type: none"> <li>1) Course syllabus;</li> <li>2) Copy of Marissa Hall's Resubmission NRSA;</li> <li>3) Copy of your Draft Student Research Idea(s) (submitted to Sakai before class). Be prepared to share this with the class as well as what you see as your biggest challenges/ uncertainties.</li> </ol> <p>The SF424 (R&amp;R) for Individual Fellowships Guide is posted on Sakai for your use throughout the course.</p>	<p>Draft Student Research Idea(s) due on Sakai by 9:00 AM on Friday, 1/13</p> <p>Start reading relevant literature in your topic area to verify gaps and brainstorm research questions.</p>

1-20	<p>NRSA grantsmanship</p> <p>Specific Aims</p> <p>Brief Peer Reviewer Guide</p> <p>Link between Research and Training</p>	<p>Read Chapters 7 and 8 of “The Grant Application Writer’s Workbook.”</p> <p>Read Specific Aims and Training Plans sections of two NRSA’s on Sakai, focus on the resubmitted application when one is available.</p> <p>Peruse NIH RePorter (search on keywords from your research ideas).</p> <p>Skim NRSA Program Announcement (PA-16-309)</p> <p>Bring to class or have on your computer: Brief description of 2-3 training goals that you could accomplish through the work of the NRSA research proposal.</p>	
1-27	<p>Reading and Critiquing Grant Proposals</p> <p>NRSA review criteria and discussion of NIH reviewer video</p> <p>Workgroup discussions on critiquing assigned proposal</p> <p>Workgroup presentations of proposal critique (5 min per group) and general discussion</p> <p>Overview of Peer Reviewer Specific Aims Feedback form</p> <p>Workgroup time to review feedback from peers</p>	<p>Read Proposals for Marta Mulawa ORIGINAL Submission and Marissa Hall ORIGINAL Submission. Take notes for yourself, critiquing the proposals (strengths and weaknesses) based on NIH form (Use the template called “F31 Review Template” found on pg 2 of the document titled “Reviewing Grant Proposals in HBEH 860 2017.docx”. You will use these during the workgroup activity in class.</p> <p>Read Reviewing Grant Proposals in HBEH 860 2017.docx.</p> <p>Read NIH Scoring Guidelines pdf.</p> <p>Optional, but recommended: Read NIH Scoring System and Procedure pdf.</p> <p>In-class:</p> <ul style="list-style-type: none"> <li>• Workgroup 1: Use NIH format to critique Marta’s proposal (bulleted critiques are</li> </ul>	<p>Developed Student Research Interests due on Sakai and emailed to workgroup by 5:00 PM on Tuesday, 1/24</p> <p>Developed Student Research Ideas Peer Reviewer Forms due on Sakai and emailed to workgroup by 9:00 AM on Friday, 1/27</p>

		<p>sufficient). Prepare a summary of your group's critique (&lt; 5 min) to share with the class.</p> <ul style="list-style-type: none"> <li>• Workgroups 2 and 3: Use NIH format to critique Marissa's proposal (bulleted critiques are sufficient). Prepare a summary of your groups' critique (&lt; 5 min) to share with the class.</li> </ul>	
2-3	<p>Workgroup Feedback on Specific Aims.</p> <p>Structure of the Research Strategy</p> <p>(a) Significance (b) Approach (c) Methods: Study design, sampling and recruitment, data collection procedures</p>	<p>Read Specific Aims of students in your workgroup. Complete one Peer Reviewer Specific Aims Feedback form for each person in your group (submit to Sakai and give to them in hard copy or by email by the beginning of class).</p> <p>Re-read Significance &amp; Approach sections of the two NRSAs you read for prior classes (focusing on the resubmitted application when one is available).</p>	<p>Draft Specific Aims due on Sakai and emailed to your workgroup by 5:00 PM on Tuesday, 1/31.</p> <p>Peer Reviewer Specific Aims Feedback Form due on Sakai and emailed to workgroup by 9:00 AM on Friday 2/3.</p>
2-10	<p>Structure of the Research Strategy</p> <p>More on Methods</p> <p>(a) Statistical power (b) Measures (c) Statistical analyses (d) Missing data</p> <p>Potential Problems and Alternative Strategies</p> <p>Example of Sarah's data source, study design, and statistical methods</p> <p>Workgroup time: Use this time to review issues with development of Research Strategy and ask follow-up statistical or methodological questions.</p>	<p>Return to readings from your previous coursework and the broader literature to continue to guide your proposal development.</p> <p>Read the summary statements of the NRSA applications posted on Sakai and the student responses to reviewers.</p>	

2-17	Works-in-Progress Specific Aims Presentations	Works-in-Progress presentation: Each student will have 5 minutes to present their study overview (Specific Aims). If there are specific issues you are struggling with, highlight these for the group. You may use up to 3 slides to present your study.  The group will then provide 10 minutes of feedback/discussion.	Work-in-Progress brief presentation in class.  <u>IMPORTANT: slides must be submitted to the TA before 8:00 AM.</u>
2-24	No Class (Minority Health Conference)		Refined Specific Aims due on Sakai by 5:00 PM on Tuesday, 2/21.  Instructors will return individual feedback on your Specific Aims by Tuesday, 2/28.
3-3	Research Strategy – Part 3 –  Full class workshopping  NRSA – student panel	Review Abstracts of student NRSA examples posted on Sakai.	
3-10	Responding to peer/mentor reviewer comments and Grant Reviewer Comments  Human Subjects  Workgroup time  Review peer reviewer feedback form for Research Strategy	Re-read Human Subjects Protections Sections of example NRSAs you had read for prior classes.	“Final” Specific Aims due on Sakai and to your Faculty Research Advisor by 5:00 PM on Tuesday 3/7.
3-17 (no class)	No Class – Spring Break		
3-24	Workgroup Feedback: Students provide feedback on the Research Strategy (Significance and Approach).	Read draft research strategy (Significance & Approach) of students in your workgroup. Complete one Peer Reviewer Feedback form for ONE person in your group (as assigned by TA) (submit to Sakai and give to them	Draft Research Strategy (Significance and Approach) due on Sakai and emailed to your workgroup by 5:00 PM on Tuesday, 3/21.

	<p>Goals for Fellowship Training, building a mentorship team, and Career and Doctoral Dissertation and Other Research Experience, courses and activities to support training plan.</p> <p>Building a mentorship team and establishing career and training goals</p>	<p>in hard copy or by email by the beginning of class).</p> <p>Read “Goals for Fellowship Training and Career” and “Doctoral Dissertation and Other Research Experience” sections of student NRSA’s.</p> <p>Sign up for individual meetings with Kate for week of 3-27</p>	<p>Attach Specific Aims section and a brief description of your 2-3 training goals that you plan to accomplish through the work of the research proposal.</p> <p>Completed Peer Reviewer Research Strategy Feedback form due on Sakai and emailed to your workgroup member by 9:00 AM on 3/24.</p>
3-31 (SBM Conference)	No class (Individual meetings with Kate this week)	Prepare any questions for your individual Instructor meeting.	
4-7	<p>Writing the Abstract</p> <p>Break</p> <p>Working groups – use this time to review your workgroup team members’ abstracts and consult with your working groups for any issues you are having with any sections of the proposal.</p> <p>Introduce Marcia, HB Business Manager, and Amorelle Crossley, Grants Manager.</p>	<p>Read Abstracts from the example NRSA proposals on Sakai and your fellow workgroup members.</p> <p>Skim NIH Reporter for other Abstracts in your research field (especially F31/NRSA mechanism). Take particular note of how training plan goals are incorporated within a NRSA Abstract.</p>	<p>Revised Research Strategy (Significance and Approach) along with Specific Aims due on Sakai and to Faculty Research Advisor by 5:00 PM Tuesday, 4/4</p> <p>Complete draft abstract and print for class by 9:00 AM on Friday, 4/7.</p>
4-14	No class, University holiday		
4-21	<p>Description of early career mechanisms</p> <p>Break</p> <p>Early Career Award Panel</p>	Prepare for Career Panel by reading about early career mechanism on the NIH website (B/Start, K-Award (K01 K07 and K99), R03, R21, F32).	

	Course Evaluations	Read early career proposals on Sakai.	
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4-28	<p><b><u>Final assignments must be uploaded to Sakai by 5:00 PM</u></b></p> <p>Full proposal including Abstract (no more than 30 lines), Specific Aims (1 page), Research Strategy (6 pages), References (no limit), Applicant's Background and Goals for Fellowship Training (6 pages)</p> <p><b>Late assignments will be marked down 2 points for each 24-hour period or portion thereof.</b></p>
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