**Course Objectives**

This course will help students develop and enhance their skills in writing and critiquing research proposals. The course is designed to supplement technical skills taught in other HPM courses by explicitly focusing on how to craft research proposals in a compelling manner and to critically evaluate their strengths and weaknesses.

This course will also provide an overview of various funding mechanisms and sources for public health and health services research, and highlight the variations in proposal requirements among funding mechanisms. Although writing and critiquing activities in this course will focus primarily on the NIH or AHRQ investigator-initiated framework, students also will be exposed to other peer-reviewed funding sources such as the Centers for Disease Prevention and Control (CDC), Patient Centered Outcomes Research Institute (PCORI), and California mechanisms such as the California Tobacco Related Diseases Research Program (TRDRP), the California Breast Cancer Research Program (CBCRP), and the California HIV/AIDS Research Program (CHRP).

Specifically, students will:

- Learn the principles of conceptualizing and writing a competitive research proposal.
- Learn the basics of the peer-reviewed research review process – culture, structure, main considerations by reviewers, timetables, and outcomes – in different research environments (e.g., NIH, PCORI).
- Critically evaluate the strengths and weaknesses of sample research proposals utilizing the NIH review criteria and framework.
• Develop a research proposal following NIH or AHRQ guidelines for a small grant (e.g., R03 or R21) or doctoral dissertation (e.g., R36).
• Orally present their research ideas and proposals.

**Course Prerequisites**
Graduate student standing. Completion of coursework in research design and methods (e.g., HPM 225A-B) is required. While not required, it is highly recommended that students enter the course with a research topic in mind. This is a doctoral level course. Masters students with adequate preparation and a research topic in mind may take the course. Masters students (without a prior doctoral level degree in another field e.g., MD, JD) should contact Dr. Bastani before registering.

**Course Requirements**
- Learning exercises
  - Student review of sample grant proposals 20%
- Class participation and Oral presentation
  - Vigorous class participation is expected
  - Brief oral updates throughout the quarter, at various stages of proposal writing.
  - A brief presentation of the final research proposal (with PowerPoint slides), focused on the Research Strategy: Significance, Innovation, Approach. Questions, suggestions and feedback from peers/colleagues are expected.
- Research proposal for a small grant 60%
  - Students will write a proposal for an NIH/AHRQ small grant (e.g., R36, R03, R21) on a research topic of their choice. For the purpose of this assignment, it should be assumed that all NIH Institutes/Centers allow investigator-initiated small grant proposals.
  - Intermediate deadlines: These required elements will be assigned on an ongoing basis. They are designed to provide opportunities for feedback and to facilitate timely proposal completion.
  - Final research proposal due **Wednesday, June 10, 2020 by 5:00pm**, including:
    - Research Plan (Specific Aims, Research Strategy: Significance, Innovation, Approach, References)
Course Topics

(1) Introduction and Overview
Course Overview:
Course content, expectations, assignments

Funding Mechanisms Overview:
Types of grants, cooperative agreements, contracts
NIH (RePORT, Reporter, RFP vs PA)
Other government agencies (Federal, State)
Foundations (diversity, requirements)
Early career opportunities (Career and Fellowship Awards: e.g., R36, K Awards K99/R00)

Note: Example Research Ideas for a Small Grant

These are some types of studies - not a comprehensive list. The key to a successful small grant proposal is to keep the proposed work relatively narrow in scope, not overly complex, and (most important) feasible due to shorter timelines. It also is important to make a case for how study findings will inform future work.

Methodological Studies:
Develop and validate a new measure
Collect reliability and validity data on an existing measure
Apply a new methodological approach

Observational (non-intervention) Studies:
Collect cross-sectional data to evaluate correlates of XXXX
Collect longitudinal data to evaluate predictors of XXXX
Analyze existing dataset to assess correlates/predictors

Intervention-Related Research:
Conduct formative evaluation and use it to develop an intervention
Pilot test a previously developed intervention with a new population
Both of the above
Conduct a small, controlled study

(2) Proposal Writing
Planning phase:
Determine funding agency/section/mechanism (consider funding climate); Identify required elements/checklists/preliminary documents (letter of intent, concept papers); Identify partners and others/division of labor; Draft a realistic timeline and procedures

Research Plan:
Specific Aims: Significance of issue, research questions, hypotheses
Research Strategy: Significance, Innovation, Approach
(3) Grant review process
Reviewer guidelines and summary sheets
Overview of NIH Study Sections
How the review process actually works
The role of the NIH Program Officer
Reviewer concerns/common pitfalls
Responding to critiques: Introduction to application for resubmission

(4) Proposal Writing (continued)
Research Plan:
Specific Aims: Significance of issue, questions, hypotheses
Research Strategy: Significance, Innovation

(5) Proposal Writing (continued)
Research Plan: (continued)
Research Strategy: Approach
  ○ Research Design (overall; designs appropriate for scope of mechanisms), Preliminary Studies, Team Qualifications, Conceptual Framework, Methodology, Sample Size Calculations, Measures/Instruments/Scales, Data Collection, Statistical Power, Data Analysis, Limitations, Timeline

(6) Student Grant Review Exercise

(7) Proposal Writing (continued)
Biographical Sketches, Budget and Budget Justification, Vertebrate/Human Subjects considerations, Facilities and Resources (Environment), Letters of Support/Participation
Review example Biosketch template, guidelines and clarifications (CCLE).

Note: NIH Biosketch Instructions and Sample https://grants.nih.gov/grants/forms/biosketch.htm; recent clarifications regarding Biosketch guidelines are posted on the CCLE page.

Note: Researchers should include a link to a full list of their published work as found in a publicly available digital database such as My Bibliography.

(8) Proposal Writing (continued)
Title, Summary/Abstract, Project Narrative, Bibliography and References Cited, Facilities and Other Resources (Environment).
List of Periodic Course Assignments

Note: Please submit all required assignments through CCLE. If you have any difficulties submitting or obtaining information through CCLE, please contact Michelle Guerra.

1. Possible research topic/s you are interested in (4-1-20, first class)
   - Students will verbally share topics they are interested in, and answer questions posed by instructors and fellow students.

2. Verbal update or outline of potential research topic (Key issue and why it matters. Ideas for how to address the issue.)

3. Review information on structure and guidelines for F31, R36, R03, and/or K01, paying attention to required sections, page and budget limits. (Post-docs may be particularly interested in R03 and K guidelines, and pre-docs should review R36 or F31 guidelines).

4. NIH Report Exercise
   - The purpose of this exercise is to familiarize students with the NIH Report database and with the types of studies NIH has funded in the past. Students will identify a funding agency of interest and the agency’s funding priorities. To complete this assignment:
     - Consider possible research topics of interest and identify possible search terms.
     - Access Research Portfolio Online Reporting Tool (http://projectreporter.nih.gov/reporter.cfm)
     - Type in the topic at “text search.” Select the required year(s). Select research project at “funding mechanism.” Submit query.
     - From the list that results, select grants related to the research topic. Click on the title to access the abstract.
     - Browse abstracts to identify innovative ideas that are supported, gaps evident from what is being funded, and innovation you can introduce that would complement what has been funded.
     - Identify specific agency(ies) funding your topic of interest. Visit the agency(ies) website and collect information on their strategic priorities for funding.

4. Draft of Specific Aims: Submit written bulleted aims to class and be prepared share screen and discuss your ideas; provide feedback on aims proposed by fellow students.

5. Review NIH Review Guidelines (CCLE): review criteria, example summary sheets, read through the review criteria and scoring system for R-mechanisms and the K-mechanisms; F-31 Guide for Reviewers is also posted.

6. Specific Aims (one page Word document, per NIH guidelines) – Submit to instructors and provide critique and feedback to fellow students.

7. Bulleted draft of Research Strategy (Significance, Innovation, Approach), Submit to instructors and provide critique and feedback to fellow students.

8. Student Grant Review Exercise: The purpose of this exercise is to familiarize students with NIH reviewer guidelines and the review process. Students will be provided several research
proposals to read, and will use NIH reviewer guidelines and templates to prepare a formal written critiques of the proposals. Protecting and respecting the intellectual property of investigators who have generously agreed to share their proposals is of paramount importance.

In reviewing the proposals, students should consider each of the following criteria: Overall Impact; Significance; Investigator; Innovation; Approach; and Environment; assign a score for each criterion (1 to 9, with 1 being the best – to the right of each heading); assign an Overall Impact Score (1-9, with 1 being the best; and provide a (brief) written review that identifies key strengths and weaknesses. Bulleted format is acceptable, although complete sentences are very helpful. Other sections of the proposal, such as the Budget or Human Subjects Protection components, will not be considered in this review. Students should be prepared to discuss the assigned proposals and their review as primary reviewers, and to submit a hard copy of their written critiques to the instructors. Actual study section critiques will be shared so students can see how their reviews compare with those of expert reviewers.


10. Class presentation by students of their research proposals

11. Final research proposal due Wednesday, June 10, 2020 by 5:00pm.

- In preparing the final research proposal it is important to review and follow instructions in form PHS 398 regarding formatting requirements. Although students should be aware of all required grant sections, for purposes of this assignment only the following proposal elements will be submitted:
  
  A. Research Plan
     o Specific Aims (1 page maximum)
     o Research Strategy: Significance, Innovation, Approach (6 pages maximum), References

Proposal Grading Criteria
In addition to the formal NIH review criteria, the following factors will be considered:

- Is the scope of the study appropriate for the mechanism?
- Is the content well-organized and presented (e.g., does it tell a coherent story?)
- Is the proposal legible and free of typos and other physical problems?
- Is the writing clear and concise?
Recommended Reading:

Note: Course handouts and other readings are accessible via CCLE.

Proposal writing

Note: Although not all chapters will be relevant to early investigators, we highly recommend the Russell and Morrison (2019) Workbook. Other guides to grant writing are listed for your consideration.

  Note: This book is written with R01 guidelines in mind. Page limits and required grant sections will vary by type of proposal/funding mechanism/agency. This is one example only, and not a required template to follow. It can serve as a guideline but does not represent the only way to write a successful research proposal.


Websites and other e-resources

- NIH RePORT: https://report.nih.gov
- NCI Examples of Funded Grants: https://cancercontrol.cancer.gov/IS/sample-grant-applications.html
- NIH K Awards: https://researchtraining.nih.gov/programs/career-development
- NIH Application Instructions Changes: https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general/g.120-significant-changes.htm
- UCLA Graduate Division Funding Opportunities for Graduate Students: https://grad.ucla.edu/asis/stusup/fundingop.htm
- UCLA Graduate Research Mentorship Program: https://grad.ucla.edu/asis/sfap/srmintro.htm
  (Applications typically due in February for a mentored summer opportunity culminating in paper and/or conference presentation)
• UCLA Strategic Research Initiatives: UCLA Resources on Grant Writing (https://www3.research.ucla.edu/resources): Grants Tutorial, Grant writing Tips, archival videos.
• UCLA OVCR Initiatives Funding Opportunity Resources, including the SPIN database (https://vcr.ucla.edu.ovcr-initiatives/funding-opportunity-resources)
• NIH Review Video: 5 min tips for applicant video here
• CITI Human Subjects Tutorial (https://www.citiprogram.org/default.asp)

**MS and PhD Program in Health Services Research Competencies**

Competencies addressed in this course include:

- **Conceptual knowledge:** Apply or develop theoretical and conceptual models and skills relevant to health services research
- **Relevant and Important HSR question development:** Pose relevant and important research questions, evaluate them, and formulate solutions to health problems, practice, and policy
- **Study designs:** Describe the strengths and weaknesses of study designs to appropriately address specific health services research questions
- **Research conduct management:** Execute and document procedures that ensure the reproducibility of the science, the responsible use of resources, the ethical treatment of research subjects
- **Communication:** Effectively communicate the process, findings, and implications of health services research through multiple modalities (e.g., proposal development, writing skills)

**Message about Academic Integrity to all UCLA Students from UCLA Dean of Students:**

UCLA is a community of scholars. In this community, all members including faculty, staff and students alike are responsible for maintaining standards of academic honesty. As a student and member of the University community, you are here to get an education and are, therefore, expected to demonstrate integrity in your academic endeavors. You are evaluated on your own merits. Cheating, plagiarism, collaborative work, multiple submissions without the permission of the professor, or other kinds of academic dishonesty are considered unacceptable behavior and will result in formal disciplinary proceedings usually resulting in suspension or dismissal.

**Forms of Academic Dishonesty:** As specified in the UCLA Student Conduct Code, violations or attempted violations of academic dishonesty include, but are not limited to, cheating, fabrication, plagiarism, multiple submissions or facilitating academic dishonesty:

**Cheating:** Unauthorized acquiring of knowledge of an examination or part of an examination
- Allowing another person to take a quiz, exam, or similar evaluation for you
- Using unauthorized material, information, or study aids in any academic exercise or examination – textbook, notes, formula list, calculator, etc.
- Unauthorized collaboration in providing or requesting assistance, such as sharing information
- Unauthorized use of someone else’s data in completing a computer exercise
- Altering a graded exam or assignment and requesting that it be regraded

**Plagiarism:** Presenting another’s words or ideas as if they were one’s own
- Submitting as your own through purchase or otherwise, part of or an entire work produced verbatim by someone else
- Paraphrasing ideas, data or writing without properly acknowledging the source
- Unauthorized transfer and use of someone else’s computer file as your own
- Unauthorized use of someone else’s data in completing a computer exercise
Multiple Submissions: Submitting the same work (with exact or similar content) in more than one class without permission from the instructor to do so. This includes courses you are currently taking, as well as courses you might take in another quarter.

Facilitating Academic Dishonesty: Participating in any action that compromises the integrity if the academic standards of the University; assisting another to commit an act of academic dishonesty:

• Taking a quiz, exam, or similar evaluation in place of another person
• Allowing another student to copy from you
• Providing material or other information to another student with knowledge that such assistance could be used in any of the violations stated above (e.g., giving test information to students in other discussion sections of the same course)

Fabrication: Falsification or invention of any information in an academic exercise:

• Altering data to support research
• Presenting results from research that was not performed
• Crediting source material that was not used for research

While you are here at UCLA, if you are unsure whether what you are considering doing is cheating, don’t take chances, ask your professor. In addition, avoid placing yourself in situations which might lead your professor to suspect you of cheating.

Alternatives to Academic Dishonesty:

• Seek out help – Meet with your professor, ask for assistance as needed.
• Ask for an extension – if you explain your situation to your professor, she/he might be able to grant you an extended deadline for an upcoming assignment.
• See a counselor at Student Psychological Services, and/or your school, college or department – UCLA has many resources for students who are feeling the stresses of academic and personal pressures. If you would like more information, please come see us at the Dean of Students’ Office in 1206 Murphy Hall, call us at (310) 825-3871 or visit their website at www.deanofstudents.ucla.edu.

UCLA ADA Policy

Students needing academic accommodations based on a disability should contact the Center for Accessible Education (CAE) at (310) 825-1501 or in person at Murphy Hall A255. When possible, students should contact the CAE within the first two weeks of the term as reasonable notice is needed to coordinate accommodations. For more information visit www.cae.ucla.edu.

ADA Contact: Nickey Woods
Center for Accessible Education, A255 Murphy Hall
Phone: (310) 825-1501, TTY / TTD: (310) 206-6083, Fax: (310) 825-9656

Inclusivity

UCLA’s Office for Equity, Diversity, and Inclusion provides resources, events, and information about current initiatives at UCLA to support equality for all members of the UCLA community. I hope that you will communicate with me or your TA if you experience anything in this course that does not support an inclusive environment, and you can also report any incidents you may witness or experience on campus to the Office of Equity, Diversity, and Inclusion on their website (https://equity.ucla.edu/).