RUTGERS
School of Public Health

Course Title: **Grant Writing for Public Health, Behavioral, and Biomedical Research**

Course Number: **HBSP 0701**

Course Pre- and Co-requisite(s): None for doctoral students. For MPH students, HBSP 0600 or EPID 0656 **and** instructor's permission required.

Course Location: Room 2B (Piscataway)

Course Date & Time: Fall 2022
Mondays 3:00-5:00 pm
September 12, 2022 – December 19, 2022

This course requires 30 minutes of online learning each week (Online30)

Course Instructor: Paul Duberstein, PhD
Professor and Chair
Department of Health Behavior, Society & Policy
Email: paul.duberstein@rutgers.edu
Phone: (732) 956-8074

Office Hours: By appointment

Course Website: *canvas.rutgers.edu*

Required Course Texts: Robertson, J.D., Russell, S.W., & Morrison, D.C. (2019). *The grant application writer's workbook: National Institutes of Health Version.* Buellton, CA: Grant Central, LLC. Do not purchase. Assigned chapters have been uploaded in Canvas. In the course schedule below, this book is referred to as "NIH"

Jacobsen, K.H. (2021). *Introduction to health research methods: A practical guide.* Burlington, MA: Jones & Bartlett Learning. Do not purchase. Assigned chapters have been uploaded in Canvas. In the course schedule below, this book is referred to as "Jacobsen"

Optional Course Text: Morrison, D.C., &Russell, S.W. (2016). *The grant application writer's workbook: Successful Proposals to any Agency.* Buellton, CA: Grant Central, LLC. Do not purchase. Recommended chapters have been uploaded in Canvas. In the course schedule below, this book is referred to as "General"

Additional/Supplemental Readings/Resources:

a. Goldstein, A. M., Balaji, S., Ghaferi, A. A., Gosain, A., Maggard- Gibbons, M., Zuckerbraun, B., & Keswani, S. G. (2020). An algorithmic approach to an impactful specific aims page. Surgery. doi:10.1016/j.surg.2020.06.014
b. Morgan, R., Hawkins, K., Lundine, J. (2018). The foundation and consequences of gender bias in grant peer review processes. CMAJ, 190, E487-E488.
c. Tamblyn, R., Girard, N., Qian, C.J., & Hanley, J. (2018). Assessment of potential bias in research grant peer review in Canada. CMAJ, 190, E489-E499.

d. Hoppe, T.A., Litovitz, A., Willis, K.A., Meseroll, R.A., Perkins, M.J., Hutchins, B.I., et al. (2019). Topic choice contributes to the lower rate of NIH awards to African-American/black scientists. Science Advances, 5:eaaw7238. See also: Lauer, M. (2020, August 12). Institute and Center award rates and funding disparities. Online, NIH, Office of Extramural Research.
Available here >> https://nexus.od.nih.gov/all/2020/08/12/institute-and-center-award-rates-and-funding-disparities/

e. Selected chapters from: Hammond FM, Malec JF, Nick TG, & Buschbacher, RM. *Handbook for clinical research: Design, statistics and implementation*. NY: Demos Medical.

f. Schleider, J.L. Harnessing network science to personalize scalable interventions for adolescent depression. Funded grant application: NIH Director's Early Independence Award (DP5).

Course Description: This course will offer an introduction to grant-writing, with a focus on the behavioral, social science, and public health portfolio at the National Institutes of Health. Students will learn about the funding opportunities offered by NIH, the grant submission process, and the grant review process. Although the focus is on NIH, students will gain knowledge, practice skills, and cultivate effective professional habits that will facilitate positive grant submission outcomes for funding agencies worldwide.

Selected Concentration Competencies Assessed: The competencies assessed in this course for the PhD (Social and Behavioral Health Sciences) include:

1. Demonstrate ability to critically analyze and interpret the scientific literature. This competency will be addressed in all sessions.
2. Establish a program of focused research. This competency will be addressed in all sessions.

The competencies assessed in this course for the PhD (Health Systems and Policy) include:

3. Demonstrate ability to critically analyze and interpret the scientific literature. This competency will be addressed in all sessions.

Please visit the Concentration webpages on the School of Public Health's website at sph.rutgers.edu for additional competencies addressed by this course for other degrees and concentrations.

Course Objectives: By the completion of this course, students will be able to:

1. Explain the distinctions between different federal grant mechanisms and funding agencies
2. Describe the criteria used to evaluate grant applications
3. Develop grant-reviewing skills
4. Develop professional skills and habits to avoid common grant-writing mistakes.
5. Write a compelling "Specific Aims" page for a grant application

Course Requirements and Grading:

The following course requirements and assignments will contribute to the overall course grade:

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1. Class Participation   10 points
2. Specific Aims Assignment #1   20 points
3. Mock Grant Review Assignment   20 points
4. Oral Presentation   20 points
5. Specific Aims Assignment # 2   <u>30 points</u>
     Total: 100 points

Attendance and participation (10%).
Students are expected to attend each class session and participate in all discussions, class activities and assignments. If you are unable to attend class, please notify me in advance.**.**

Specific Aims Assignment – Draft 1 (20%).
The Specific Aims page is the most important part of a grant application. In this assignment, you will prepare a Specific Aims page (1-page limit) for an F31 or an R03 application. Explain why your chosen topic is significant, and why your proposed approach is sensible given your career stage and/or available resources. Format the documents according to the following NIH recommendations: Fonts must be 11 point or larger without any changes to character density (e.g., changes to letter spacing, tracking, kerning): Arial (NOT Arial Narrow), Georgia, Helvetica, Palatino Linotype. Margins must measure at least 0.5 inch (top, bottom, and sides) on pages formatted to be no larger than 8.5" x 11".

References should be provided in **AMA format** (no page limit). This assignment will be graded using four criteria: a) the project's significance (7 points), b) the project's approach (8 points); c) writing style (e.g., clarity, logical sequencing, coherence; 3 points) and d) formatting/grammar (eg. AMA style, NIH specifications; 2 points).

<u>Competencies addressed:</u> Demonstrate ability to critically analyze and interpret the scientific literature; Establish a program of focused research

Student Oral Presentations (20%)
In 15 minutes, a) identify the objectives of your F31/R03 project (Aims), b) describe how you plan to attain the objectives, c) state why you are particularly well-prepared to implement the project, and d) explain how the project will help you meet your career goals. After the presentation, you will respond to questions for 5 minutes. The presentation will be graded based on your description of: the project's significance (5 points), points a-b (5 points), points c-d (5 points) as well as your responsiveness to questions (5 points).

<u>Competencies addressed:</u> Demonstrate ability to critically analyze and interpret the scientific literature; Establish a program of focused research.

Mock Grant Review Assignment (20%)
It is impossible to know how to write a fundable grant without knowing how grants are evaluated and scored. This assignment will help you become acquainted with the NIH scoring system. You will evaluate and score a "mock" grant application. This assignment will be graded based on your description of the mock application's overall impact (8 points), significance (4 points), innovation (4 points), and approach (4 points).

<u>Competencies addressed:</u> Demonstrate ability to critically analyze and interpret the scientific literature.

Specific Aims Assignment - Final Draft (30%).
After receiving feedback on your first Specific Aims assignment, you will revise and re-submit the Aims page. This will give you an opportunity to learn how to respond to reviewer feedback. The paper will be graded using the following criteria: a) the project's significance (6 points), approach (6 points), and innovation (6 points); b) responsiveness to my critiques of the first draft (6 points); c) writing style (e.g., clarity, grammar, logical sequencing, coherence; 3 points) and formatting (e.g., References in AMA style, NIH specifications; 3 points).

Competencies addressed: Demonstrate ability to critically analyze and interpret the scientific literature; Establish a program of focused research.

Uploading Written Assignments
Written assignments must be uploaded to Canvas by midnight on the day it is due; late submissions will receive partial credit.

Grading Scale
94 – 100 A
90 – <94 A-
87 – <90 B+
84 – <87 B
80 – <84 B-
77 – <80 C+
70 – <77 C
<70   F

Course Schedule: *some of the dates may change*

Date	Course Topic	Assignments/ Assessments
Week 1 9/12	Introduction to the Course Overview of an NIH Grant application Navigating Sponsored Research Infrastructure	**Required Readings:** Chapter 1 (NIH): "Finding NIH Opportunities and Responding to Them" Chapter 3 (NIH): "How to find the Appropriate Program and Grant Mechanism for your idea" F31: https://grants.nih.gov/grants/guide/pa-files/pa-18-671.html R03: https://grants.nih.gov/grants/guide/pa-files/PA-19-052.html **Optional Readings:** Chapter 2 (General): "How to Develop a Novel Compelling Idea" Chapter 3 (General): "Identifying Potential Funding Agencies for Your Idea"

		Online 30: "NIH guide for grants and contracts" https://grants.nih.gov/funding/searchguide/index.html#/
Week 2 9/19	Organization of NIH, overview of grant programs, and funding mechanisms. Introduction to the F series grant mechanism Introduction to the Specific Aims Page	**Required Readings:** Chapter 7 (NIH): "Specific Aims Section: Conceptual Framework for Creating a Bulleted Outline" Chapter 8 (NIH): "Writing the Specific Aims section" Chapter 4 (Jacobsen): "Defining Specific Aims" **Optional Readings:** Chapter 7 (General): "The Overview/ Executive summary" Paper a. **Online 30:** "NIH RePORTER" https://projectreporter.nih.gov/reporter.cfm
Week 3 9/26	No Class	
Week 4 10/3	Habits of Effective Grant Writers, Part 1	**Required Readings:** Chapter 5 (Jacobsen) "Professional Development" Chapter 6 (Jacobsen) "Coauthoring" Chapter 38 (Jacobsen) "Writing Success Strategies" Chapter 40 (Jacobsen) "Selecting Target Journals" Chapter 42 (Jacobsen) "Peer review and publication" **Optional Reading:** Chapter 35 (Jacobsen) "Article Structure" Chapter 39 (Jacobsen) "Reasons to Publish" Chapter 41 (Jacobsen) "Manuscript Submission" Online 30: "Clinicaltrials.gov" https://clinicaltrials.gov/ **Online 30:** "NIH Inclusion statistics report" https://report.nih.gov/RISR/#/
Week 5 10/10	The Grant Review Process	**Required Readings:** Chapters 4 (NIH): "Influence of the NIH Review Process on Writing for Success"

		Papers b-d **Optional Reading:** Chapter 5 (NIH): "Response to Prior Review and Resubmission" **Online 30:** "What happens to your NIH grant application" https://www.youtube.com/watch?v=Gg2nppTaLUw&feature=youtu.be **Online 30:** "NIH's Interest in Diversity and Diversity Supplement Programs" https://grants.nih.gov/podcasts/All_About_Grants/episodes/Diversity-Statement-DefinitionandSupplements.mp3
Week 6 10/17	Significance	**Assignment Due:** Finalize Plan for Specific Aims Assignment **Required Readings:** Chapter 10 (NIH) "Research Strategy Section: Significance (Including Rigor of the Prior Research) and Innovation Subsections." Chapter 15 (Jacobsen) "Synthesis Research" Chapter 26 (Jacobsen) "Systematic Reviews and Meta-Analyses" Reading e. **Online 30:** "What are Systematic Reviews?" https://www.youtube.com/watch?v=egJIW4vkb1Y **Online 30:** "Cochrane Training" https://www.youtube.com/channel/UCoWzvKR8RPHG07PPeqBiibA/channels
Week 7 10/24	Innovation	Reading f **Online 30:** "How NIH processes and assigns your application" https://www.youtube.com/watch?v=VftHqfp0deE
Week 8 10/31	Approach, Data Analyses	**Required Readings:** Chapter 11 (NIH): "Research Strategy Section: Approach Subsection (Including Rigor, Potential Biological Variables, Technical Preliminary Results, and

		Renewal Progress Report)"
		Online 30: "Rigor and Reproducibility in Your Grant Application" https://grants.nih.gov/podcasts/All_About_Grants/episodes/Rigor.mp3
		Online 30: "The Replication Crisis"
		https://www.vox.com/future-perfect/21504366/science-replication-crisis-peer-review-statistics
Week 9 11/7	Habits of Effective Grant Writers, Part 2	Chapter 37 (Jacobsen) "Critical Revising"
		Chapter 21 (NIH) "Pre-submission review…"
		Materials for mock grant review will be distributed
		Online 30: "Who Should I Contact at NIH? - Part 1 of 4: Roles of NIH Staff and How They Work Together"
		https://grants.nih.gov/podcasts/All_About_Grants/episodes/Who_To_Contact_1_March_2013.mp3
		Online 30: "Who Should I Contact at NIH? - Part 2 of 4: Finding a Funding Opportunity and Developing Your Application"
		https://grants.nih.gov/podcasts/All_About_Grants/episodes/Who_To_Contact_2_March_2013.mp3
Week 10 11/14	Budget, Budget Justification	**Assignment Due:**
		Specific Aims Assignment #1
		Online 30: "Reporting the Results of Valid Analyses"
		https://grants.nih.gov/podcasts/All_About_Grants/episodes/Podcast-Stratified-Analysis.mp3
Week 11 11/21	Mock Grant Review #1	**Assignment Due:**
		Mock Grant Review
		Online 30: "NIH Reviewer Recruitment"
		https://public.csr.nih.gov/ForReviewers/BecomeAReviewer
Week 12 11/28	Biosketch	**Assignment Due:**
		Work on the Oral Presentation

		Online 30: "Budget Basics" https://grants.nih.gov/podcasts/All_About_Grants/episodes/Budget_Basics_April_2011.mp3
Week 13 12/5	Student Presentations	**Optional Reading** Chapter 12 (NIH): Senior/Key Person Profile Form, Biographical Sketches…" **Assignment Due** Student Presentations **Online 30:** "NIH's Inclusion Across the Lifespan Policy" https://grants.nih.gov/podcasts/All_About_Grants/episodes/Podcas-Inclusion-Across-the-Lifespan.mp3 **Online 30:** "Including Women, Children, and Minorities in Clinical Research" https://grants.nih.gov/podcasts/All_About_Grants/episodes/Inclusion_April_2011.mp3
Week 14 12/12	Inclusions and Human Subjects Mock Grant Review #2 (if necessary)	**Specific Aims Assignment #2 is Due** **Optional Reading** Chapter 18 (NIH) "How to Create a Compelling, Informative Title for Your Proposal" Chapter 19 (NIH): "Project Summary/Abstract…Privileged Information" **Online 30:** "Cover Letters and their Appropriate Use" https://grants.nih.gov/podcasts/All_About_Grants/episodes/cover-letter-final.mp3
Week 15 12/19	Wrap-Up	**Online 30**: "Am I Doing Human Subjects Research?" https://grants.nih.gov/podcasts/All_About_Grants/episodes/Human-Subjects-Part-1.mp3 **Online 30**: "Certificates of Confidentiality" (podcast) https://grants.nih.gov/podcasts/All_About_Grants/episodes/Certificates-of-Confidentiality.mp3

Learning Management System: Canvas will be used extensively throughout the semester for course syllabus, assignments, announcements, communication and/or other course-related activities. It is the student's responsibility to familiarize themselves with Canvas and check it regularly. If you have difficulties accessing Canvas, please inform the instructor and Canvas Support (help@canvas.rutgers.edu). Canvas is accessible at canvas.rutgers.edu.

School of Public Health Honor Code: The School of Public Health Honor Code is found in the School Catalog (sph.rutgers.edu/academics/catalog.html). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all

students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another's work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the School community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.

Students with Disabilities: Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student must apply for Services by first completing a Registration Form with the Rutgers Office of Disability Services (ODS) at ods.rutgers.edu. The student will also be required to participate in an ODS intake interview and provide documentation. If reasonable accommodations are granted, ODS will provide you with a Letter of Accommodations which should be shared with your instructors as early in your courses as possible.

Commitment to Safe Learning Environment: The Rutgers School of Public Health is committed to helping create a safe learning environment for all students and for the School as a whole. Free expression in an academic community is essential to the mission of providing the highest caliber of education possible. The School encourages civil discourse, reasoned thought, sustained discussion, and constructive engagement. Provocative ideas respectfully presented are an expected result. An enlightened academic community, however, connects freedom with responsibility. The School encourages all students to disclose any situations where you may feel unsafe, discriminated against, or harassed. Harassment or discrimination of any kind will be not tolerated and violations may lead to disciplinary actions.

Student Well-Being: The School of Public Health recognizes that students may experience stressors or challenges that can impact both their academic experience and their personal well-being. If the source of your stressors or challenges is academic, students are encouraged to discuss these challenges and circumstances with their instructor, if they feel they may need additional support or temporary accommodations at the beginning or during this course. The course instructor may consider making reasonable temporary adjustments depending on the student's situation. For personal concerns or if additional support is needed, students may reach out to the Office of Student Affairs or any of the appropriate referral resources listed on the SPH Student Connect Canvas page.

Reporting Discrimination or Harassment: If you experience any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, know that help and support are available. You may report such incidents to the RBHS Title IX Office or to the School of Public Health's Office of Student Affairs. Rutgers University has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. If you experience any other form of discrimination or harassment, including racial, ethnic, religious, political, or academic, please report any such incidents to the School's Office of Student Affairs. The School strongly encourages all students to report any incidents of discrimination or harassment to the School. Please be aware that all Rutgers employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers as listed in Appendix A to Policy 10.3.12) are required to report information about such discrimination and harassment to the School and potentially the University. For example, if you tell a faculty or staff member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty or staff member must share that information with the RBHS Title IX Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources in Appendix A to University Policy 10.3.12. For more

information about your options at Rutgers, please visit [Rutgers Violence Prevention and Victim Assistance](#).

Overview of School Policies: Academic and non-academic policies and procedures, such as Auditing a Course, Retaking Courses, Grade Grievance and others that cover registration, courses and grading, academic standing and progress, student rights and responsibilities, graduation and more may be found under [Policies](#) on the School of Public Health website. Below are select specific policies; however, students are responsible for keeping informed about academic and non-academic policies and procedures beyond those noted on this syllabus.

Graduate Student Computer Policy: Students are required to possess a personal laptop, no older than approximately two years, that must meet minimum requirements which may be found online at: sph.rutgers.edu/student-life/computer-support.html

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.

Policy Concerning Use of Turnitin: Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Canvas) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.

Withdrawal/Refund Schedule: Students who stop attending their course(s) without submitting a completed [Add/Drop Course](#) form will receive a failing grade. Furthermore, students dropping to zero credits for the semester are considered withdrawn and must submit a completed [Leave of Absence](#) form from the School of Public Health's Office of Student Affairs. The School of Public Health refunds tuition only. Administrative and technology fees are non-refundable. You may find the Withdrawal/Refund Schedule on the School of Public Health website at: sph.rutgers.edu/academics/academic-calendar.html