

GRANT WRITING

PET 5936 (CLASS#19157) ~ 3 HOURS ~ SPRING 2020

INSTRUCTOR:

Scott K. Powers

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Preferred Method of Contact: email

OFFICE HOURS: Monday and Wednesdays: 11:30AM-12:30PM

Other hours by appointment.

MEETING TIME/LOCATION:

FLG 230 8-10

periods/Tuesday (3-6PM)

COURSE DESCRIPTION: This is an introductory course in grant writing that is targeted for graduate students and clinician-scientists preparing for research careers. This course will focus on the fundamental components of a research grant using both lecture material and suggested readings. During this course, each student will write an “experimental” grant using an NIH R21 format. The course will conclude with the formation of “peer-review study sections” to review the grant proposals written by class members.

PREREQUISITE KNOWLEDGE AND SKILLS: Interest in learning the grant writing process.

REQUIRED AND RECOMMENDED MATERIALS: A textbook is not required. However, several book titles are provided as suggested reading materials.

COURSE FORMAT: This course will meet one time per week for an informal lecture. In particular, this course will focus on the key elements of successful grant writing. Questions are encouraged at any time during the lecture.

COURSE LEARNING OBJECTIVES: After completion of this course the student should be able to:

1. Identify and describe key elements of good scientific writing
2. Identify key components and generate an NIH biosketch
3. Evaluate and critically review a research grant
3. Identify and discuss the organization of the National Institutes of Health (NIH) and the NIH grant submission process
4. Describe and generate components of an NIH grant and recognize the process of crafting the successful grant application
5. Analyze, identify and discuss the NIH grant review process and scoring system

COURSE AND UNIVERSITY POLICIES:

ATTENDANCE POLICY: **Class attendance is not mandatory and there are no points associated with attendance.** However, missing class will likely have a negative impact on learning and therefore, could negatively influence your exam scores and final grade in the course. Further, missing classes will prevent the student from the opportunity to earn “extra points” during unannounced quizzes.

COMMUNICATION WITH INSTRUCTOR: The best way to communicate with your instructor is face-to-face before or after class. Outside of class, please contact your instructor by email (spowers@hhp.ufl.edu) to schedule a time to meet. Please do not use the email address in e-learning. You are responsible for checking course postings on eLearning (CANVAS).

PERSONAL CONDUCT POLICY: Students are expected to exhibit behaviors that reflect highly upon themselves and our University. Moreover, students are expected to arrive to class on time but tardiness is acceptable when transportation or personal conflicts require the student to arrive to class later than the scheduled time.

Laptop computers and tablet devices for note taking are welcome in class. Upon arrival to class, **please silence your cell phone** or other personal communication devices.

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to

the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor for this class.

EXAM MAKE-UP POLICY: Make-up exams will be available for students that cannot take exams during the assigned period due to health problems or an emergency. Please contact instructor in advance for approval of make-up exams. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>."

ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations."

COURSE EVALUATIONS: Students in this class are participating in GatorEvals. This evaluation system is designed to be more informative to instructors so that teaching effectiveness is enhanced and to be more seamlessly linked to UF's CANVAS learning management system. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/> . Thank you for serving as a partner in this important effort.

GETTING HELP:

Students requiring assistance with health and/or wellness or students seeking academic help can use the following sources:

Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575

- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 392-1161
- University Police Department, 392-1111 (or 9-1-1 for emergencies) <http://www.police.ufl.edu/>

Academic Resources

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

GRADING:

The following list provides the point-accruing components of the course. The total points earned from each grading component will be summed and will comprise the total points earned in the course. The course grading scale is also provided for reference.

Evaluation Components	Points Per Component	Approximate % of Total Grade
Grant Application	40 pts	40/100 = 40%
Preparation NIH biosketch	10 pts	10/100 = 10%
Written Exam	20 pts	20/100 = 20%
Written grant reviews for <u>two</u> assigned grants	10 pts per review = 20 pts	20/100 = 20%
Participation in grant review study section	10 pts	10/100 = 10%

Total points = 100

Grant application The objective of this assignment is to improve your ability to identify an important research problem, devise an experimental solution to the problem, and compose a peer-reviewed competitive grant. Students should use the instructions provided by the NIH SF424 forms (Posted on NIH website). Your grant R21 application requires the completion of all of the NIH required forms which includes yours and your co-investigators NIH biosketches. The body of the research plan of the grant **will be limited to 6 pages (note: this page count does not include the abstract and specific aims)**. This 6 page limit is identical to the current NIH R21 guidelines) and should contain the following sections:

1. Abstract: The abstract (~ 1 page-this page does not count against 6 page total) provides a brief summary of the proposed study.
2. Specific aims: This section (~1 page-does not count against your 6-page limit) should briefly list the questions to be addressed in the experiments and the hypotheses to be tested.
3. Significance: (~1/2 pages) This section should identify the significance of your proposed experiments and provide an explanation as to why this work is important (what will be accomplished by completion of the proposed experiments?).
4. Innovation: (~1/2 page) This section discusses the innovation behind your project (e.g., innovative hypothesis, innovative techniques, etc.)
4. Approach: (~5 pages): This section typically contains both the background for the project, preliminary data and the experimental approach. The methods should briefly outline the experimental design and the general techniques to be employed. An explanation of the statistical procedures for data analysis should be included and a brief interpretation of the expected findings. Complete details of crafting this section will be discussed in class.
5. List of references: use any accepted scientific reference style (reference pages do not count against your page limit).

SUBMIT 3 COMPLETE COPIES OF THE GRANT (NIH FORMS INCLUDED) ALONG WITH 8 SEPARATE COPIES OF THE ABSTRACT* AND SPECIFIC AIMS* BY MARCH 17, 2020 (IN CLASS)

* Separate abstract and specific aims should contain both the title of your grant and name of P.I.

Other guidelines for grant preparation:

Font-12 point Ariel-single spaced

Margins-1/2 inch all around

Figures should be numbered and contain captions

Grant grading procedure (points per section)*:

***Note that the satisfactory category represents the lowest number of points awarded for completion of any section of the grant.**

Abstract (10 points total):

Outstanding = 10 points

Excellent = 9

Very good =8

Good =7

Satisfactory=6

Specific aims (15 points total)

Outstanding = 15 points

Excellent = 13

Very good =12

Good =11

Satisfactory=10

Innovation (5 points total)

Outstanding = 5 points

Excellent = 4

Very good =3

Good =2

Satisfactory=1

Significance (5 points total)

Outstanding = 5 points

Excellent = 4

Very good =3

Good =2

Satisfactory=1

Approach (15 points total)

Outstanding = 15 points

Excellent = 13

Very good =12

Good =11

Satisfactory=10

Definitions for evaluation terms:

Outstanding = well organized and conceived; succinctly written and compelling writing style

Excellent = well-conceived and succinctly written

Very good =generally well written but lacks clarity in 1-2 sections

Good =well written areas exist but lacks clarity in 3-4 sections

Satisfactory (but needs improvement) = lacks organization and clarity in 5 or more areas

Written Exam – The format for this exam will be discussion questions related to all of the lecture topics covered during the semester. A list of study questions will be provided two weeks prior to the exam. These study questions are designed to serve as a study guide for exam preparation

Written grant reviews – Each class member will be assigned two grants to review during the peer review sessions. Successful completion of written reviews for the two assigned grants will result in the awarding of all 20 points (10 points per grant).

Attendance and oral participation in grant review study section Each class member is required to attend and participate in a peer review section of grants written by class members. Attendance and oral participation in this process will result in the awarding of all 10 points.

GRADING SCALE:

A = 95 or above pts

A- = 90-94.99 pts

B+ = 86-89.99 pts

B = 83-85.99 pts

B- = 80-82.99 pts

C+ = 76-79.99 pts

C = 73-75.99 pts

C- = 70-72.99 pts

D+ = 66-69.99 pts

D = 63-65.99 pts

D- = 60-62.99 pts

E = 59.99 or below

WEEKLY COURSE SCHEDULE

DATE	TOPICS TO BE ADDRESSED
Jan 6	1) Introduction to course; 2) Why grant writing skills are important for faculty members at research universities; 3) Sources and types of research grants
Jan 14	Applying for NIH grants-NIH organization and grant application process;
Jan 21	1) Grant budgets and preparation of your NIH CV; 2) Key components of an NIH research grant (part 1);
Jan 28	1) Key components of an NIH research grant (part 2); 2) Grant writing-how do I get started?; and 3) Common mistakes in preparing grants;
Feb 4	1) Flawless packaging – Grant writing skills or “how to sell your grant to a reviewer! ; and 2) Effective scientific writing is key to a fundable proposal
Feb 11	1) Grant review process and scoring; and 2) Selection of NIH study sections and institutes for your application;
Feb 18	1) Polishing grant writing skills -where the rubber meets the road! And 2) Responding to reviewers comments-grant revision and

	resubmission
Feb 25	Exam-covers all lectures prior to Feb 26-study questions provided
March 3	Spring break-no class
March 10	Abstracts due on this date-please bring 8 copies of your abstract to class-include grant title and your name at top of abstract-class will read and score abstracts according to ability to review
Mar 17	1) The art of reviewing a grant and writing a critique; 2) Review of study section operation. * Grants due on this date -please bring complete 3 (paper) copies of your grant and 8 copies of both your abstract and specific aims (complete with PI's name and grant title on abstract)
Mar 24	Pick up your grant review assignment
March 31	No class-Release time to review grants
April 7	Study section #1 meets and scores grants
April 14	Study section #2 meets and scores grants
April 21	Study section #3 meets and scores grants

SUGGESTED READING LIST

WEB-based information on writing research proposals:

Tips for New NIH Grant Applicants- https://grants.nih.gov/grants/grant_basics.htm

NIH grants page. <https://www.nih.gov/grants-funding>

How to apply to NIH. <https://grants.nih.gov/grants/how-to-apply-application-guide.html>

Grants Process Overview. http://grants.nih.gov/grants/grants_process.htm

Suggested reference books on grant and scientific writing:

1. Gerin, W. et al. Writing the NIH grant proposal. Sage Publications. Thousand Oaks. Second edition. (2011).
2. Yang, O. Guide to effective grant writing: How to write a successful NIH grant application. Springer. Second edition (2012).

3. Schimel, J. Writing science: How to write papers that get cited and proposals that get funded. Oxford University Press (2012).
4. Lindsey, D. Scientific writing = thinking in words. CSIRO publishing. (2011).
5. Hofmann, A. Scientific writing and communication. Oxford Press. (2014)
6. Royal, B. The Little Red Writing Book: Writing plus Grammar-Deluxe Edition. Maven Publishing, Calgary, Canada, 2012.