HCS 6315: Scientific and Grant Writing
Course Syllabus

Fall 2025

Course Information

Course Number/Section	HCS 6315.001
Course Title	Scientific and Grant Writing
Term	Fall 2025
Meeting Time	Wednesday 1:00-3:45 pm
Meeting Location	CD1 B.108

Professor Contact Information

Professor	Kelly Jahn, Au.D., Ph.D.
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Office Location	CD J220
Office Hours	Wednesday 11:15 am – 12:15 pm

Course Description

A graduate-level course designed to teach PhD-level students to prepare and write NIH-style predoctoral grants. This seminar provides students with experience in expressing their research ideas in the framework of a grant proposal. Topics include: Scientific writing strategies, crafting a grant proposal, grant review process, and peer review techniques and skills. Students will produce NIH-style grant proposals, which will be critiqued following the NIH format.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

BBSC Ph.D. student or instructor consent required.

Course Goals

The overarching goal of this seminar is to provide students with experience in expressing their research ideas within the framework of a grant proposal. The ability to craft a compelling grant application is a critical skill underlying a successful programmatic research career. This seminar will focus on how to prepare a successful grant proposal that aligns with and extends programmatic career goals and how to conduct fair and rigorous peer grant reviews. We will focus on funding agencies and mechanisms that are appropriate for early career researchers. Students will learn about the components of an early career research grant and will critique proposals from their peers and from more seasoned researchers. Over the course of the semester, students will produce their own grant proposals, which will be critiqued in a mock review session following the NIH format. Grant review processes are similar across agencies and the content learned will apply to other mechanisms (e.g., NSF, ASHFoundation, etc.). Additional themes will focus on developing a Biosketch, training plan, identifying appropriate mentors for the mentorship team, grant administration, and the inevitable revision process.

Mentor Involvement

The student's grant topic should be approved by their PhD supervisor and final submission to any funding agency will be at the discretion of the mentor and student (and other project collaborators as appropriate).

Students will write about various scientific topic areas, and oftentimes this work is closely related to the work of the student's PhD supervisor. You will receive feedback on preliminary drafts of your grant from the instructor and your classmates. However, your mentors have far greater knowledge of your research topic than the instructor and your classmates. Thus, it is highly recommended that each student's PhD supervisor play an active role in the grant writing process. This expert feedback is critical as you move forward with

submission. PhD supervisors may be invited to attend some sessions involving student presentations and are highly encouraged to help with editing and crafting the overall grant.

Student Learning Objectives/Outcomes

The overall objective of this course is to develop grantsmanship skills by producing an NIH F31 or comparable grant application and participating in peer grant review. The focus of this course is on the big picture of the "why", "who", "what", and "how" of grant writing (e.g., articulating a real-world problem that needs to be solved, who will be reviewing the proposal, and the various components of a proposal). The focus of this course will not be on academic writing or grammar. To develop this skillset, students are encouraged to seek constructive feedback and writing support from their primary mentors and through UTD's Writing Center.

After completing this course, students should be able to:

1) Describe the process of submitting a grant application by writing an NIH Pre-Doctoral Fellowship (or comparable early career grant).
2) Discuss the NIH grant review process.
3) Provide constructive critiques of grants written by peers.
4) Present and discuss their research projects with a broad audience.

The above learning outcomes will be assessed through the grant writing and critique process.

Textbooks and Materials

Required

1) Russell & Morrison. *The grant application writer's workbook.* There is a general version in addition to NIH- and NSF-specific versions. You can purchase any version here: http://grantwriter.mybigcommerce.com/.
2) NIH Application Guide (https://grants.nih.gov/grants/how-to-apply-application-guide.html)
    a. SF424 "Fellowship Addition" (see eLearning for current version effective in 2025, which was released in Nov 2024) - This is "FORMS-I".
3) Example Fellowship Applications from previous BBS students and postdocs (see eLearning folders on Box) – Note: Some examples use the "old" format (prior to Jan 2025), so there may be differences in required documentation and review criteria.
4) NIH website (https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm)
5) Example Grant Applications from BBS faculty (see eLearning folders on Box) – Note that these examples will not include some of the required fellowship application components (e.g., training plans, mentor statements).
6) Additional readings provided by the instructor on eLearning.

Supplemental

1) Sinek, Simon. 2011. *Start with Why*. Harlow, England: Penguin Books.
2) Sarnecka, B. W. (2019). *The writing workshop: Write more, write better, be happier in academia* [free download]
3) Giddings, Morgan. *4 Steps to Funding: Avoid rejection and get your grant funded on the next try with this simple four step formula*. Marketing Your Science LLC
4) Gallo, Carmine. 2017. *Talk like TED*. London, England: Pan Books.
5) Silvia, P. J. (2019). *How to write a lot: A practical guide to productive academic writing (2nd edition).* Washington, DC: American Psychological Association.
6) Ogden, T. E. & Goldberg, I. A. (2002). *Research proposals: A guide to success (3rd edition).* San Diego: Academic Press.
7) Strunk, W., & White, E. B. (2000). *The elements of style (4th edition).* Boston: Pearson.
8) Yang, O.O. (2012). *Guide to effective grant writing (2nd edition).* New York, NY: Springer [Available at UTD library; be certain to access 2012 edition]

Course Regulations and Expectations

- This course requires active participation of all students. Students must have read and completed critiques of other students' grants prior to class, when applicable.
- Students will communicate with each other in a respectful manner, and critiques should be constructive in nature. Students will accept critiques as a learning opportunity and something beneficial to improving their grants and NOT an attack against their science or themselves.
- Students are highly encouraged to utilize the writing center and other campus resources for support in language, grammar, and writing style.

Attendance and Participation

You are required to attend this course in-person (synchronously) each week unless the schedule indicates otherwise. For example, there are a couple of work-from-home sessions that are indicated in the course calendar below. Other sessions may be re-scheduled to a Virtual format as needed.

Regular participation is expected. A portion of the grade for this course is directly tied to your participation in the class. Participation includes actively engaging in question/answer sessions, contributing to group or other activities, and responding to solicitation of your feedback on assignments, readings, or materials covered in the lectures.

Plagiarism and Generative Artificial Intelligence (e.g., ChatGPT)

We take plagiarism very seriously and all components of your application must contain original writing from you, the student PI, even if you are using source material from your lab and/or supervisor.

Note that NIH expressly prohibits applications that were substantially developed with AI. The current NIH policy to target AI-generated grant submissions can be found here:
https://grants.nih.gov/grants/guide/notice-files/NOT-OD-25-132.html

The use of generative AI technology (e.g., ChatGPT or any other AI writing or editing system) is forbidden in this course and its use will be considered plagiarism. The only exception to this rule is the use of grammar-correcting software. However, if you use any software to evaluate your writing, you must (1) describe the software used and (2) provide the document that you submitted prior to editing.

Any evidence of plagiarism or cheating, including the use of generative AI, will result in an automatic zero for the assignment and will be forwarded to the University honor code system. It is your responsibility to understand what constitutes plagiarism and cheating. If you have questions, ask. Ignorance cannot be used as an excuse.

Please review the university's policies for academic dishonesty:
https://www.utdallas.edu/conduct/dishonesty/.

Confidentiality

We will review unpublished and preliminary proposals during this course. All discussions, sample materials, and draft grant applications are **STRICTLY CONFIDENTIAL**. Students and faculty have generously offered to make their successful grant applications available to the students in this class. It is crucial that neither the physical documents (electronic or hard copy) nor discussions about the scientific content (other than your own) be carried beyond this seminar. You will sign a confidentiality agreement on the first day of class before you are given access to any materials and before any discussions occur. Failure to adhere to this confidentiality agreement constitutes grounds for academic misconduct.

Course Access and Navigation

This course can be accessed via your UT Dallas NetID account on the eLearning website. Please see the course access and navigation section of the Getting Started with eLearning webpage for more information. To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication
The instructor will send course announcements to your UT Dallas email address. Under typical circumstances, the instructor will respond to student emails within 3 business days.

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Server Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide appropriate accommodations based on the situation. Students should immediately report any problems to the instructor and contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues as soon as possible.

Classroom Safety and Contagious Illnesses
Students who are feeling ill, or who have tested positive for a contagious illness (e.g., COVID-19, flu, or other illnesses) should not attend class in person and should instead follow required disclosure notifications as posted on the university's website. UT Dallas recommends that you refer to the Comets United Webpage for the latest public health recommendations.

Class Recordings
Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Examinations and other Methods of Evaluation
This course requires that students produce numerous written documents including peer grant reviews. Many of these assignments must be shared via email (in addition to submission through eLearning) with the instructor and members of the class **prior** to specific course meetings. The deadlines are listed in the Course Calendar below. When indicated or announced, the assignments must be sent to the instructor via email prior to the deadline so that she can disseminate the work products when appropriate.

All documents will be written using the approved grant format: ½" top, bottom, right, and left margins, single-spaced, 11pt Arial font. There are **NO EXCEPTIONS** to the formatting rule, as real-world funding agencies do not offer opportunities for resubmission due to formatting errors. Figures and tables should be included where appropriate.

The NIH formatting rules can be found here: https://grants.nih.gov/grants-process/write-application/how-to-apply-application-guide/format-attachments

The course grade will be out of **525 points** total (colors correspond to those in the *Course Calendar*):

11 Written Assignments (345 points): Worth between 5 and 100 points each
4 Critique Assignments (130 points): Worth between 10 and 50 points each
Participation/Reading Points, including 3-minute Oral Presentation (50 points)

The instructor reserves the right to assign additional assignments as deemed fit.

Extra Credit
No extra credit assignments are offered.

Policy for Missed or Late Assignments
Adherence to the deadlines is required, as fellow students need time to review many of the documents prior to the next class session. Meeting deadlines is crucial to becoming a successful, independent researcher in the age of electronic submission where there are no appeals for late submissions.

Missed or late assignments will be given 0 points except in extreme circumstances. Extreme circumstances include conflicts due to personal or family illness requiring physician's assistance or hospitalization, approved religious holy days, or death of a family member. Students are expected to contact the instructor in advance to arrange an earlier assignment due date.

Grading Policy

Minimum Percent Required	Letter Grade	Grade Points
97	**A+**	4
94	**A**	4
90	**A-**	3.67
87	**B+**	3.33
84	**B**	3
80	**B-**	2.67
77*	**C+**	2.33
74*	**C**	2
70*	**C-**	1.67
67*	**D+**	1.33
64*	**D**	1
60*	**D-**	0.67
<60*	**F**	0
	W	0
	I	0
	NC	0

To ensure fairness, final grades are not rounded up or down.

*Per University policy, grades poorer than a C are converted to F for graduate courses. Please see the link below for details.

https://catalog.utdallas.edu/2020/graduate/policies/grades

Course Calendar, Activities, and Assignments
The following table shows the course schedule including the topics of each session and all assignments. These descriptions and timelines are subject to change at the discretion of the course instructor.

PLEASE CAREFULLY READ THIS CALENDAR. SEVERAL ASSIGNMENTS WILL TAKE MORE THAN 8 HOURS TO COMPLETE. YOU SHOULD GET STARTED ON THESE AS SOON AS POSSIBLE.

*Readings listed in the table below are from the Fellowship Instructions for NIH and Other PHS Agencies (Forms Version I Series; Released March 2025) and the Grant Application Writer's Workbook National Institutes of Health Version (January 2025 Edition) – denoted as "GAW" in the table. If you have a different version of the GAW series, please work with the instructor to identify comparable chapters.

Due dates: All written and peer review assignments are due on Tuesdays at 5:00 pm Central Time. Readings should be completed by the start of class (Wednesdays at 1:00 pm Central Time).

Date & Topic	In-Class Activity	Assignment	Due Dates
Week 1: 08/27/25 Course Introduction, Expectations Grant Types and Mechanisms, NIH Scoring and Review Process, Formatting	☐ Introductions ☐ Sign confidentiality agreements ☐ Discuss your experiences with grants, travel awards, manuscripts ☐ How to navigate sponsor websites, NIH Reporter ☐ Create Word documents for each required section with instructions	Read the following in "Fellowship Instructions" (20 min): ☐ Research Training Project – Specific Aims ☐ Research Training Project – Strategy ☐ Instructions for a Biographical Sketch ☐ Read GAW "Part One: Before you Begin to Write" (60 min)	☐ Wed 09/03 1PM ☐ Wed 09/03 1PM
Week 2: 09/03/25 Specific Aims, Approach, Biosketch	☐ Lecture ☐ Working Session	☐ Write NIH-style Biosketch (2 hours; 25 pts) ☐ Read GAW Chapters 7, 8, and 12 (60 min)	☐ Tue 09/09 5PM ☐ Wed 09/10 1PM
Week 3: 09/10/25 **Guest Lecture: Julia Evans, PhD** Storytelling, Working with the Program Officers	☐ Lecture and Discussion	☐ Write your Draft Specific Aims (4 hours; 10 pts) ☐ Prepare a 3-min oral presentation of your Specific Aims Read the following in "Fellowship Instructions" (20 min): ☐ Goals, Preparedness, and Potential ☐ Research Training Plan - Training Activities and Timeline ☐ Human Subjects, Vertebrate Animals, Select Agent Research, Resource Sharing Plan ☐ Read GAW Ch 16 (20 min)	☐ Tue 09/16 5PM ☐ Wed 09/17 1PM ☐ Wed 09/17 1PM ☐ Wed 09/17 1PM
Week 4: 09/17/25 Discussion of Goals, Preparedness, and Potential; Training Activities and Timeline	☐ Present your 3-minute Specific Aims pitch ☐ Lecture ☐ Working Session	☐ Peer critique Specific Aims (4 hours; 10 pts) Read the following in "Fellowship Instructions" (20 min): ☐ Project Summary/Abstract ☐ Project Narrative ☐ Facilities & Other Resources ☐ Equipment ☐ Bibliography & References Cited ☐ Read GAW Ch 9,15, and 19 (60 min)	☐ Tue 09/23 5PM ☐ Wed 09/24 1PM ☐ Wed 09/24 1PM

Week 5: 09/24/25 Discussion of Specific Aims Critiques; Narrative, Summary/Abstract; Facilities and Equipment	☐ Discuss what you liked or did not like from Specific Aims pages (formatting, content, etc.) ☐ Lecture ☐ Working Session	☐ Write Goals, Preparedness, and Potential in Fellowship Training Section (4 hours; 50 pts) Read the following in "Fellowship Instructions" (20 min): ☐ Commitment to Candidate, Mentoring, and Training Environment ☐ Research Training Plan - Training in RCR ☐ Budget Section ☐ Read GAW Ch 10, 11, and 13 (60 min) Long-term assignment: ☐ Write Research Strategy (~20 hours; 50 pts)	☐ Tue 09/30 5PM ☐ Wed 10/01 1PM ☐ Wed 10/01 1PM ☐ Tue 10/21 5PM
Week 6: 10/01/25 Sponsor and Institution; Responsible Conduct in Research; Rigor and Reproducibility	☐ Lecture ☐ Working Session	☐ Write Training Activities and Timeline (3 hours; 25 pts) ☐ Write Training in RCR (30 min; 5 pts) Long-term assignment: ☐ Write Research Strategy (~20 hours; 50 pts)	☐ Tue 10/07 5PM ☐ Tue 10/07 5PM ☐ Tue 10/21 5PM
Week 7: 10/08/25 Preliminary Data; Figure Preparation	☐ List all the preliminary data you have or will have by your target submission date ☐ Lecture ☐ Working Session	Write the following sections (25 pt total): ☐ Project Summary/Abstract (60 min, 10 pt) ☐ Narrative (30 min, 5 pt) ☐ Facilities and Other Resources (60 min, 5 pt) ☐ Equipment (60 min, 5 pt) Long-term assignment: ☐ Write Research Strategy (~20 hours; 50 pts)	☐ Tue 10/14 5PM ☐ Tue 10/21 5PM
Week 8: 10/15/25 Peer review; Budgets	☐ Lecture ☐ Working Session	☐ Write Final Specific Aims (1-3 hours minimum; 25 pts) ☐ Write Research Strategy (~20 hours; 50 pts)	☐ Tue 10/21 5PM ☐ Tues 10/21 5PM
Week 9: 10/22/25 Resubmissions; Resilience; Other sections/documents	☐ Lecture ☐ Working Session	☐ Peer Critique of Specific Aims and Research Strategy (3 hours; 20 pts) ☐ Write Budget (1 hour; 5 pts) ☐ Read GAW Ch 18 and 20	☐ Tue 10/28 5PM ☐ Tue 10/28 5PM ☐ Wed 10/29 1PM
Week 10: 10/29/25 Work from Home to Compile "Final" Grant Application	☐ Incorporate feedback from peer critiques ☐ Finalize and compile all sections	☐ Incorporate feedback into your aims and research strategy (1-2 hours) Prepare a "final" grant using the five forms (2-3 hours, 100 pts) ☐ "**SF424 (R&R) Form**" (Sections 1, 5, 8, 9, 11, 12, 14, 17) ☐ "**R&R Other Project Information Form**" (All Sections except "Other Attachments")	☐ Tue 11/04 5PM

		☐ "**Project/Performance Site Location(s) Form**" ☐ "**R&R Senior/Key Person Profile (Expanded) Form**" (PD/PI section only; Don't forget to attach Biosketch) ☐ "**Fellowship Supplemental Form**" (Sections 2, 3, 4, 5, 7)	
Week 11: 11/05/25 Work from Home on Peer Review	☐ Work on your peer critiques in anticipation of mock study section next week	☐ NIH Review of Assigned Grants (4 hours; 50 pts)	☐ Tue 11/11 5PM
Week 12: 11/12/25 **Mock Study Section**	☐ Mock Study Section: Present your critiques and defend your positions	☐ NIH Review of Assigned Grants (4 hours; 50 pts)	☐ Tue 12/02 5PM
Week 13: 11/19/25 Work from Home on Peer Review	☐ Work on your peer critiques in anticipation of mock study section on 12/03	☐ NIH Review of Assigned Grants (4 hours continued from Week 12; 50 pts)	☐ Tue 12/02 5PM
Week 14: 11/26/25	**No Class (Fall Break)**		
Week 15: 12/03/25 **Mock Study Section**	☐ Mock Study Section: Present your critiques and defend your positions	☐ Write "Introduction to Resubmission" document in response to Study Section Review Feedback (4 hours; 25 pts)	☐ Tue 12/09 5PM

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources webpage for these policies.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class. Please go to UT Dallas Syllabus Policies webpage for these policies.

Thanks to Drs. Ben Kolber and Adrianna Shembel for their generosity in sharing ideas and materials related to this course content.

The course content and schedule contained in this document are subject to change at the discretion of the course instructor.