Course Title: Grant Writing for Clinical and Translational Researchers
Course Number: M430
Credits: 1
Course Directors:
Robert J. Milner, PhD, University of Massachusetts Chan Medical School
Joan M. Lakoski, PhD, West Virginia Clinical and Translational Science Institute, West Virginia University
Course Prerequisites: None
Grading Policy: Pass/Fail

Course Description
One of the main goals of the K12 program and the Master's in Clinical and Translational Cancer Research is to provide students with the skills necessary to write grants to obtain support for their research. Success in grant funding not only requires strong science writing skills but also knowledge of the policies, review processes, and administrative aspects involved in grant submission.

This course will introduce every aspect of grant writing, including identifying and targeting funding mechanisms, understanding the review process, writing individual grant sections, and understanding administrative policies. Special attention is provided to research funding opportunities for early stage investigators (ESI) for both the National Institutes of Health (NIH) mentored career development training award (K series) and submission of an independent investigator Research Project Grant (R01 award).

The course will also provide opportunities for writing and feedback with the goal that, by the end of the course, each participant will have the components of a NIH research or career development award application ready for submission.

The program format will include both didactic presentations and small group discussions. Participants will receive feedback on their proposals from peers in the program, the course directors, and MSKCC faculty.

Learning Objectives
By the end of the program, participants will be able to:

- Navigate NIH, including identification of funding opportunities, policies, and resources for grant writing, and communication with NIH personnel
- Describe the NIH review process and criteria and how to address the review criteria in a proposal
- Describe aspects that make strong grant proposals and common mistakes that may limit the success of an application
- Create the components of a NIH career development or research grant application. Including
    - a compelling specific aims page that captures the goals of the proposal
    - a career development plan (as applicable) that provides opportunities to learn new skills in the context of the proposed research with the support of selected mentors and is designed to advance the candidate to a new career stage
    - a research plan that includes a well-designed hypothesis, rationale, specific objective, and short- and long-range research goals, divided into the three sections of Significance, Innovation and Approach
    - "front page" components: including biosketches, budget and budget justification, resources and environment

Participant Expectations

Participants are expected to

- Complete and submit assignments on time. Assignments are due before the next scheduled session
- Engage in group discussion during sessions
- Provide constructive feedback on colleagues' assignments
- Maintain confidentiality and respect each other's intellectual property
- Discuss and obtain feedback on their proposals with their mentors

NOTE: Participants will be writing a grant proposal during this program. This proposal should be one that participants have a reasonable opportunity to submit for funding; it cannot be a grant that that is currently under review or is already funded. Participants in this course will be selected, in part, on their readiness to complete and submit a proposal by the end of the program.

Program Schedule and Topics

Each session is 2 hours at 8:00–10:00 am (EST), conducted by Microsoft Teams, and scheduled every two weeks to allow participants to complete assignments between sessions.

Session 1. Getting Started Tuesday, August 11, 2026

- Introductions
- Presentation: Steps to A Competitive Application
    - Navigating NIH: structure and funding opportunities
    - NIH grant review process & criteria
    - Planning an application (timeline)
    - Understanding the writing process: drafts & feedback
- Presentations of research project idea by each participant using a PAR (Problem, Action, Result) format
- Assignment: review NIH Study Section video

Session 2. Working with NIH and Biosketches Tuesday, August 18, 2026

- Presentation: Working with NIH
    - Finding your institute, program official and study section
    - Use of NIH Matchmaker and ART (Assisted Referral Tool)
    - Talking with Program Officials
- Presentation: NIH Biosketch
- Assignment: identify potential Institutes, Program Officials, and Study Sections for your proposal; update NIH Biosketch

Session 3. Specific Aims Tuesday, September 8, 2026

- Presentation & Activity: Writing Effective Specific Aims
- Assignment: complete draft of Specific Aims for review at next session

Session 4. Research Strategy-1: Significance and Innovation Tuesday, September 22, 2026

- Activity (in pairs): review draft Specific Aims page
- Presentation: Writing Compelling Significance and Innovation Sections
- Assignment 1: draft Significance and Innovation
- Assignment 2: prepare 1 key figure or diagram/model that best illustrates what is most compelling about your proposal

Session 5. Career Development Training Plan-1 (K applicants only) Tuesday, October 6, 2026

- Presentation: Writing a K Award — the Career Development Training Plan
    - Introduction to the K award series, including K01, K08, and K23
    - Review of each required section of the K award, including the review criteria
    - Discussion of the roles of mentors (primary and co-mentor), advisory committee, collaborators and consultants, and references.
- Assignment: Select funding mechanism and identify mentors and others, including references

Session 6. Research Strategy-2: Approach Tuesday, October 20, 2026

- Activity: participants share 1 key figure or diagram/model central to proposal
- Activity (in pairs): review Significance and Innovation text
- Presentation: Strategies for Writing the Approach Section
    - Outlining the research plan and your key figures/data
    - Scientific Rigor, Timeline, & Future Directions
    - IRB & IACUC (as applicable)
- Assignment: Outline Research Plan; prepare IRB/IACUC protocol; revise and polish Specific Aims, Significance, and Innovation Sections

Session 7. Career Development Training Plan-2 (K applicants only) Tuesday, November 3, 2026

- Activity: Selection of Your Team — participants report the selection of mentors, advisors, and references
- Presentation: Completing the Candidate & Training Plan Sections
    - Managing Your Mentor (6 pages your mentors must write)
    - Letters of Reference
    - Environment & RCR, Institutional Letter of Support, Cover Letter
- Assignment: draft Candidate Development Training Plan Sections

Session 8. Research Strategy-3: Completing the Plan Tuesday, November 17, 2026

- Activity: Review outline of Research Plan
- Presentation: Completing the Research Plan
    - Overall Impact, Scientific Rigor, Experimental Timeline, Future Directions
    - Proposal Assignment Request Form
    - Budget & Budget Justification
- Assignment: complete draft of proposal to be submitted by **Monday, December 7, 2026**

Session 9. Completing the Front Pages Tuesday, December 8, 2026

- Presentation: Completing the Front Pages
    - Project Summary, Project Narrative, Facilities and Equipment, Data Sharing Plan, Letters of Support etc.
    - Proposal Assignment Request Form
    - Writing for Clarity and Flow

Session 10. Mock Study Section Thursday, January 14, 2027

- Review of participants' proposals by invited faculty, following the format of a NIH Study Section

Session 11. Next Steps Thursday, January 21, 2027

- Debrief with participants on the study section feedback (written and oral) and next steps (may also include individual consultations)