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1. Overview

1.1 Purpose and Scope of This Guide

This guide is intended to be a practical resource for both trainees and faculty mentors (sometimes referred to as "sponsors" by funding agencies) involved in preparing extramural fellowship applications. It is designed to assist individuals who are new to grant writing as well as those who already have extensive experience with the process.

Chapter 1 provides an overview for both trainees and their mentors, including advantages of preparing grants at this career stage, sources of support available at the University of Iowa (UI), what to do before starting to write, and financial incentives. **Chapters 2–4** describe resources in greater detail, including UI offices that can help, tools for finding specialized opportunities, timelines to help organize the writing process, and descriptions of the type of content that must be prepared. **Chapters 5–9** take a deeper dive into how to prepare, polish, and revise (for resubmission) an application, and **Chapter 10** provides reference materials.

1.1.1 For trainees

This guide provides an overview of how to conceptualize, articulate, and craft a competitive fellowship proposal. Writing such a proposal requires you to develop a clear research goal and strategy and to explain the significance and feasibility of the work at the appropriate level of detail. The process can initially seem daunting, but it is also an important part of scientific training. Several general principles are worth keeping in mind:

- Submit your proposal. A proposal that is never submitted has zero chance of being funded.
- Make it high quality. A weak proposal will not be funded. A strong and clearly articulated proposal has a chance.
- Balance the training plan and the research plan. The proposed training is as important as the proposed research, and input from your mentor is key.
- Start soon and have fun. Once you start this formal exercise, you may find that it leads you in exciting new directions.

The work invested in a proposal extends beyond the proposal itself. Preparing a fellowship application requires you to develop a formal plan for your research, think through experimental design, anticipate possible outcomes, and justify the significance of the work. Much of this conceptual groundwork—synthesis of the literature, framing of the scientific problem, and organization of ideas—will later be useful for writing manuscripts, review articles, and ultimately your dissertation or thesis. Because of this, the grant-writing process itself is an important educational experience that strengthens scientific thinking.

Developing a fellowship proposal is valuable because it encourages you to think deliberately about your professional goals and the training required to achieve them. The value of preparing these plans may extend to the need to articulate a career development plan or an individual development strategy (this is required by many funders). Review panels generally look for evidence that applicants have a clear plan and intent to actualize a research-related career, whether in academia, biotechnology, education, policy, or other. Especially for post-doctoral trainees (e.g., those applying for NIH F32 awards), the review panels expect you to differentiate your career path from your mentor's, and for your plan to show reflection and authenticity. For foundation-based fellowships focused on specific diseases or biological areas, reviewers often also look for a clear connection between the proposed training and the applicant's future contributions to that field.

Note that many trainees—including those currently supported by institutional training grants such as a National Institutes of Health (NIH) T32 program—will be eligible to apply for NIH predoctoral and postdoctoral fellowships. A good goal is to transition from institutional T32 support to an individual fellowship such as the NIH F30 (MD/PhD), F31 (PhD), or F32 (postdoctoral) award. In addition, many foundations offer fellowships that align with specific research topics. This guide outlines strategies for writing NIH Fellowship applications, as well as for adapting a general research proposal to multiple funding mechanisms ([Chapter 6](#)), enabling trainees to pursue several opportunities.

A key step in the application process is to start early. It is essential to both identify a suitable funding mechanism and develop an application timeline well in advance of the submission deadline. Note that for some funding mechanisms, the eligibility window is extremely short, e.g., the National Science Foundation (NSF) states that its [Graduate Research Fellowship Program](#) (GFRP) is restricted to individuals who “have completed less than one academic year in a graduate degree program,” and many have other eligibility criteria as well.

1.1.2 For faculty mentors

The first time preparing any type of grant can be confusing and overwhelming. Trainees typically need support in the logistics of preparing their grant, as well as oversight of their writing. You can facilitate this process by doing the following:

- Steer your trainees to this “Getting a Fellowship” guide as early as possible.
- Inform your trainees of the appropriate administrative contact for help submitting their application.
- Take advantage of our NIH Fellowship (F) Application template “[Sponsor\(s\) Commitment](#)” in preparing your documents for the application.
- Coordinate with your trainees on the training plan, e.g., for NIH Fellowship applications, what you write in the “Sponsor(s) Commitment” document must align with what they write in the “Training Activities and Timeline” and “Candidate's Goals, Preparedness, and Potential” documents.
- Tailor the documents you provide specifically to each trainee.

This “Getting a Fellowship” guide provides a list of available fellowship mechanisms and submission timelines ([Chapter 3B](#)). These will be updated regularly—but be sure to have your trainees check the primary source because the dates can change on short notice. This guide also explains where to find information about how letters of support and training plans from the Sponsor (and Co-Sponsor, if relevant) should be prepared ([Chapter 5.5.5](#), on NIH Fellowship Applications), with an emphasis on the importance of tailoring these documents to the individual trainee. Although these instructions are tailored to NIH grants, they can easily be adapted to other grants. In addition, the guide highlights institutional resources, such as various grant-writing courses and editing support that trainees can take advantage of during the preparation process ([Chapter 9](#)). Although review expectations evolve over time, examples of common reviewer critiques drawn from prior submissions are included to help anticipate potential concerns ([Chapter 8B](#)).

Finally, this guide can help with the administrative aspects of the grant ([Chapter 2.1](#)). Fellowship applications involve numerous administrative and formatting requirements, with which a departmental or other administrator can help. Although these elements are not scientific in nature, they are an important part of grantsmanship and non-compliance can result in administrative rejection. Thus, understanding these requirements, and ensuring that applications comply with them, is essential for trainees who plan to pursue careers in research.

1.2 Why Predoctoral Grants Matter

Pre- and post-doctoral fellowships play an important role in scientific training. Although they provide financial support for research and training, their value extends well beyond funding. The most valuable aspect of these proposals is that they help organize, distill, articulate, and anticipate a researcher's scientific goals.

- Preparing a fellowship application requires trainees to think about their research project and career goals in a concrete and structured way. The process of defining a hypothesis, outlining experimental approaches, anticipating outcomes, and framing the broader significance of the work helps a trainee develop a deeper understanding of their scientific project. Writing the proposal forces them to carefully organize their ideas and tell a clear scientific story.
- The process introduces trainees to the mechanics of grantsmanship early in their careers. The ability to understand how proposals are evaluated, how review criteria are applied, and how persuasive scientific arguments are structured is essential for researchers to develop. These skills are critical for preparing future applications, including career development (K-series) and research grant (R-series) awards; they also translate broadly to many other professional contexts.
- Preparing fellowship applications encourages trainees to develop independence and ownership of their research. Although proposals are prepared with guidance from a mentor(s) (also referred to as the Sponsor/Co-Sponsor or principal investigator (PI) of the laboratory), this application type centers on the potential and training trajectory of the trainee (who is considered the PI of the application). This emphasis encourages the trainee to take a more active role in shaping the directions of their research and professional development. The process of applying for a fellowship also helps the trainee identify weaknesses in foundational knowledge or technical expertise they may need to address.
- Fellowship awards bring research support to the university, increase the visibility of training programs, and demonstrate the strength of the mentoring environment. This helps the applicant, the mentor, and the institution. Moreover, incentive programs at UI (**Chapter 1.5**) reward the submission of proposals and/or successful proposals.
- Pre- and post-doctoral fellowship awards serve as meaningful credentials for the trainee, signaling the ability to develop and communicate a rigorous research plan. This recognition can be valuable for a career in academia, and also for a range of positions in biotechnology, industry, education, and other science-related fields. The ability to design a well-reasoned research strategy and to articulate it clearly is widely recognized as a hallmark of strong scientific training.

For the reasons listed above, preparing and submitting fellowship applications is an important part of graduate education. Even when an application is not funded, the experience gained through the process contributes significantly to a trainee's development as an independent scientist.

1.3 Overview of Institutional Support Systems

UI has developed numerous resources for grant writing, and many of these are available to graduate students developing their research projects. When preparing a grant application, you may be expected to work with an administrator in your home department who is responsible for uploading files through the system that is appropriate for the funding agency to which you are applying. This process will also involve the UI Division of Sponsored Programs ([DSP](#), [Chapter 2.1.2](#)), which will have its own deadline a few days earlier. Writing resources such as templates, boilerplate text, and examples can be obtained from the Carver College of Medicine (CCOM) Scientific Editing and Research Communication Core ([SERCC](#), [Chapter 2.2.1](#)). Additional resources can

be obtained from the [Graduate College \(Chapter 2.2.2\)](#) or Research Development Office ([RDO, Chapter 2.2.3](#)). You may also seek help with your writing from the SERCC, the Graduate College, or one of the writing centers on campus ([Chapter 9.4](#)).

1.4 Before You Begin to Write a Fellowship Application

1.4.1 Familiarize yourself with the requirements for the grant and develop a timeline

The time needed to develop a grant application can surprise even a seasoned grant writer. Be sure to start months in advance. To get a sense of how far in advance to start and how to organize your time, see [Chapter 4](#). It provides an overview of the fellowship application process, as well as a link to a tool that will help you schedule smaller milestones leading up to the submission deadline of the funding agency.

1.4.2 Contact your departmental administrator or research administrator

One of the first steps you will need to take is to identify the departmental administrator or research administrator who will work with you. This administrator will help you upload PDF files of completed sections of your application to be sent to the UI DSP. More information on this is provided in [Chapter 4](#).

1.4.3 Familiarize yourself with UI policy and resources

UI Policies are detailed in the [UI Policy Manual](#). [Section V, Chapter 5](#) covers the management and expectations for gifts, grants, and contracts. Review this chapter to get an overall picture of external funds to the university and how these are managed. The [DSP](#), within the [Office of Vice President for Research](#), has official signature authority for research-related external funding. Their website has information on many topics, including how to develop a budget, what systems are required for sponsor-funded research, and what the roles and responsibilities of the principal investigator (PI; for purposes of these grants, this is the trainee rather than the mentor) as well as various campus offices are. Note that you can get help with your responsibilities as PI of the application from your mentor. Other important offices include the Human Subjects Office ([HSO](#)), the Office of Animal Resources ([OAR](#)), Environmental Health and Safety ([EHS](#)), and the Research Integrity and Security Office ([RISO](#)).

1.4.4 Consult a Program Official at the funding agency

This is something that faculty often do when preparing their applications, and it can be helpful to trainees in assessing the suitability of their research project for a specific study section or funding mechanism. Program Officials (POs) are experts in their field and are available to help you at different stages in the grant application process. For example, they can help you shape your research to better fit a funding opportunity. If you have never talked to a PO before, you may hesitate to reach out to them the first time. Find tips to help you get started in the SERCC newsletter article "[The Advantages of Contacting Your NIH Program Official](#)." And of course, discuss this with your Sponsor(s).

1.5 Institutional Incentives for Students at UI

Both the CCOM and the Graduate College offer incentives to apply for fellowship applications. The amounts and requirements for each are detailed below.

1.5.1 Supplement for External Fellowships Program, CCOM

If a PhD student is awarded an individual, competitive extramural fellowship of at least \$10,000, they will receive a stipend supplement of \$2,000 per year. The stipend supplement is provided every year of the fellowship period or until graduation. For information, see the [Office of Graduate and Postdoctoral Studies Additional Incentives webpage](#).

1.5.2 Fellowship Incentive Program (FIP), Graduate School

The Graduate College offers a stipend for currently enrolled UI graduate students to apply for approved nationally competitive grants and fellowships if they have received feedback from faculty and/or fellowships advisors. The grant or fellowship does not have to be awarded for the student to receive a FIP award. Graduate students are limited to one FIP award per fiscal year, and the fellowship/grant application must be submitted to the funding agency during the same fiscal year the FIP award is made. In the case of submissions to NIH, either a new submission or a resubmission can be eligible, as long as all feedback eligibility requirements are met. For the full description, instructions, and list of eligible fellowships/grants visit the [FIP webpage](#).

2. UI Offices That Can Help With a Fellowship Submission

This chapter provides information about the submission process and who can help with this, as well as about offices that can help with writing and grantsmanship.

2.1 File Preparation and Submission

The first step is to read through the funding opportunity announcement and the accompanying guidance. This information from the funder will outline the requirements for the application as a whole and the content within, typically including instructions for eligibility, length limitations, formatting, content, and submission (i.e., via an electronic system, via email, or as a hard copy).

Your mentor (sometimes referred to as "sponsor" by funding agencies) may have examples of fellowship applications that you can use for guidance. Also, the Research Development Office ([RDO](#), **2.2.3**) within the [Office of the Vice President for Research](#) may have examples of funded fellowship applications. These can be found within the [Graduate Student Proposals](#) section of their [Proposal Resource Library](#) (HawkID required for access), or contact vpr-rdo@uiowa.edu. Note that funding agencies occasionally update their instructions and requirements, and the examples you view may have been written according to different guidelines; be sure to follow the current instructions for your application.

In addition to example applications, templates for writing key components of NIH Fellowship applications are available (see **2.2.1**); they combine NIH instructions with tips for good grantsmanship.

2.1.1 Departmental administration

Your mentor's department most likely has support from a research administrator who can assist with: assembling the application, submitting the University of Iowa (UI) Proposal Routing Form, and developing the budget. Some departments may require that the graduate student complete these steps with departmental guidance. If no departmental guidance is available, contact the COM-Research office: E-mail COM-research@uiowa.edu; Phone: 319-335-3500.

2.1.2 Division of Sponsored Programs (DSP)

[DSP](#) is the office that will provide a final review of the application and submit the application on behalf of the university and the trainee. Be sure to find out by when DSP needs your documents to guarantee that they can be posted on time; backlogs can occur at common funding agency deadlines.

DSP requires applicants to submit an approved UI Proposal Routing Form, as well as to provide access to the final proposal application. Access to the proposal can be provided in one of two ways:

- If the proposal is submitted to DSP via e-mail, a PDF copy must be attached, along with the Proposal Routing Form.
- If the application is prepared via an electronic application system (e.g. Cayuse, Proposal Central), the Authorized Organizational Representative (AOR) within DSP will have access to it.

2.2 Writing and Grantsmanship

2.2.1 Scientific Editing and Research Communication Core (SERCC)

The [SERCC](#), within the Carver College of Medicine, works one-on-one with faculty and trainees to improve the success of their writing projects by helping to highlight their scientific message. The SERCC website provides many resources to help individuals improve their grant proposals and their scientific writing skills in general. Resources include presentations, templates, and articles generated by the SERCC and other offices. The templates are among the most popular, providing detailed suggestions for how to use structural elements of grants effectively. Resources specific to graduate students and NIH Fellowship (F) series grants are available under the website's [Resources Specific to Graduate Students](#) section, and several are duplicated in this manual.

Authors who request assistance with their writing can select from the following levels of input: mechanics; style, clarity, and presentation; and the science. An editing project can be scheduled by filling out the [Schedule an Editing Project form](#) on the SERCC website; an editor will be in touch to confirm the timing or work with you to adjust it if necessary. Like other core facilities on campus, the SERCC charges for its services, but the cost is subsidized by some UI departments, institutes, and centers (see [SERCC pricing](#)). For the most efficient scheduling, be sure to secure a spot on the calendar well in advance of a project deadline. For example, for a research grant or fellowship application, it is best to plan to submit the Specific Aims page 1–2 months before the funder's deadline.

2.2.2 Graduate College

The [Graduate College Grad Success Center](#) provides support for students pursuing internal and external funding through grants and fellowships. To schedule a consultation with a member of the Grad Success team, visit the [Grad Success External Fellowships and Grant Support page](#). A consultant can help you identify grant opportunities and develop your writing through individual support.

2.2.3 Research Development Office (RDO)

The RDO team drives interdisciplinary collaboration through initiatives like Innovation Labs and Ideas Labs, uniting researchers across subjects. In addition, they spearhead internal funding programs, igniting research excellence within the UI campus, local communities, and beyond. The RDO hosts a wealth of resources for identifying funding prospects, enhancing grantsmanship prowess, and forging pivotal connections that bolster successful research proposals. For trainees, resources that are especially valuable are the following:

- The Pivot Database provides up-to-date information on funding opportunities (see **Chapter 3.3.1** for details).
- The [Graduate Student Research page](#) of the Office of the Vice President for Research website provides an extensive set of resources.
- The [Graduate Student Proposals section](#) of Resource Library (HawkID required) includes examples of proposals to numerous funders.*

* The Resource Library houses examples of successful proposals for various funding agencies, including both federal agencies and private foundations. It additionally contains examples of various components required for proposals.

2.2.4 Writing centers

UI hosts at least six writing centers that serve graduate students, professional students, and/or postdocs. These writing centers are located in the Carver College of Medicine, the College of Law, the College of Engineering, the College of Liberal Arts and Sciences, and the Tippie College of Business. In [Chapter 9.2](#), we provide an overview of each, along with links to their websites.

3A. Finding the Right Opportunity – Identifying Funders (“Sponsors”)

This chapter provides details about a variety of funding agencies (also referred to as “Sponsors”) that offer fellowship awards. It also provides information about tools for identifying new opportunities.

3.1 Overview of Government Funding Agencies

Each Sponsor has different submission deadlines and eligibility requirements. Chapter 3B is a list of the submission deadlines for agencies from which CCOM trainees have received awards and is annotated with information about US citizenship requirements. This will be updated regularly. However, both submission deadlines and eligibility requirements can change suddenly, so be sure to check the websites of any agencies of interest early, as well as leading up to the anticipated deadline.

3.1.1 National Institutes of Health (NIH)

The NIH Research Training and Career Development Programs help prepare individuals for careers in biomedical, behavioral, social, and clinical research. Individual fellowships provide research experience to students and scientists at the graduate and postdoctoral levels. The main types of predoctoral fellowships that NIH awards are the following:

- F30, an Individual Predoctoral National Research Service Award (NRSA) for dual-degree fellowships (e.g., MD/PhD) (Program Announcement (PA)-25-426);
- F31, a Predoctoral Individual NRSA (PA-25-422);
- F32, an Individual Postdoctoral NRSA Fellowship (PA-25-423); and
- F99/K00, a Predoctoral to Postdoctoral Fellow Transition Award.

NIH fellowship applications follow the [NIH Standard Due Dates](#) for New, Renewal, and Resubmission applications: April 8, August 8, and December 8.

3.1.2 National Science Foundation (NSF)

The goal of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the quality, vitality, and strength of the scientific and engineering workforce of the US. The program recognizes and supports outstanding graduate students who are pursuing full-time research-based master’s and doctoral degrees in science, technology, engineering, and mathematics (STEM) fields, including STEM education. The NSF strives to support basic biology questions and not to support translational research or research devoted to potential therapies or disease mechanisms.

Note that applicants must have completed less than one academic year in a graduate degree program. Also, the GRFP application process involves a submission system that differs from that used for other NSF applications. Therefore, review the funding opportunity for submission instructions on the [GRFP webpage](#) carefully. Due dates are typically in November of each year. Check the GRFP website and solicitation for exact dates.

3.2 Private Foundations

Many private foundations offer fellowship awards, and they are typically disease- or discipline-focused. Among these, the American Heart Association (AHA) is the most popular. To find other possible private sources of fellowships, use [PIVOT](#), an online search resource described in section 3.3.1.

3.2.1 American Heart Association (AHA)

The American Heart Association (AHA) is the university's second most frequently applied to sponsor for fellowship grants. AHA provides Predoctoral Fellowships annually, and applications are generally due in early September. The purpose of AHA funding is to enhance the integrated research and clinical training of promising students who have matriculated in pre-doctoral or clinical health professional degree training programs, and who intend to pursue careers aimed at improving global cardiovascular, cerebrovascular, and brain health. The applicant must be an AHA Professional Member before submitting a proposal, have completed their initial coursework, and be able to commit to 80% full-time effort. The due date for the 2027 AHA Predoctoral Fellowship application is ~September 3, 2026. Please visit the [AHA website](#) for the most current funding announcement.

3.3 Searching for Appropriate Funding

3.3.1 PIVOT as a search tool

[PIVOT](#) is an online funding database to which researchers, faculty, and research administrators have access via the Research Development Office (RDO) within the Office of the Vice President for Research. This resource is designed to help users build a funding strategy to support both their immediate and long-term needs. Specifically, users can explore new avenues for funding, view funding opportunities uniquely matched to their scholar profile, collaborate with colleagues, and manage the results of the process. Find more information, including the dates and times of upcoming demonstration sessions, by visiting the [RDO's PIVOT webpage](#). You may also contact vpr-rdo@uiowa.edu

3.3.2 Grants.gov for federal funding

[Grants.gov](#) is the official site for federal notices of funding opportunities (NOFOs). You can search [for open opportunities as well as forecasted opportunities](#). See the [Search Tips for NIH Opportunities web page](#) to make the process more efficient.

3.3.3 Search tools available via the Graduate College

The UI Graduate College curates a [page of resources for graduate students seeking funding opportunities](#). These include a database of internal funding streams, as well as links to the graduate-focused database GRAPES and to PIVOT.

3B. Finding the Right Opportunity – Sponsor Due Dates

Graduate Fellowship Sponsors – Awarded in past 10 Fiscal Years

External Sponsor	Due Date(s)
Alzheimer's Association	LOI: December 3 (2025) Application: March 18 (2026)
American Cancer Society (Postdoctoral)	June 1 and December 1
American Diabetes Association (Postdoctoral)	April 30 (2025)
American Epilepsy Society (Predoctoral)	January 22 (2026)
American Epilepsy Society (Postdoctoral)	January 22 (2026)
American Heart Association	September 3 (2025 date; 2026 TBA)
American Lung Association	Currently No Funding Announcements
American Speech-Language-Hearing Foundation	August 1 – September 3 (2025) – MARC October 1 – December 1 (2025) (Pathways) October 1 – December 1 (2025) (Lessons for Success)
Arthrex, Inc.	No Standard Due Dates
Autism Speaks (Predoctoral)	LOI: September 2 (2025) (Predoc) Applications: October 15 (2025) (Predoc)
AHA/Autism Speaks (Pre and Postdoctoral)	September 3-4 (2025)
Gates Foundation	March 17 – April 28 (2026)
Children's Tumor Foundation (Young Investigator Award)	December 2 (2025)
CurePSP	January 31 (2026)
Cystic Fibrosis Foundation (Pre and Postdoctoral)	November 16, 2026 (Student Training) December 9 (2025) (Clinical Postdoc) May & December (annually) (Postdoc)
Fight for Sight, Inc.	March 1 (Summer Student & Postdoc)
Foundation for Anesthesia Education & Research	April 30 (2026)
Howard Hughes Medical Institute (Gilliam Fellows)	Applications Open September 1 (annually)
Johnson & Johnson Med Tech (Orthopedics)	Various Sponsors and Deadlines; visit Website
Melanoma Research Foundation	Currently No Student Fellowship Awards, except Med Students
National Science Foundation (GFRP)	November 7 – 15 (2025) (GRFP)
Pharmaceutical Research & Manufacturers of America Foundation	May 27 (2026) (Translational Medicine Predoc & Postdoc)
Ruth Jackson Orthopaedic Society	Various; mostly for clinicians, some Med Student Scholarships
US Department of Energy	Found on Grants.gov; No Open NOFO's currently
US Department of Health & Human Services, National Institutes of Health F30, F31, F99/K00 (Predoctoral) F32 (Postdoctoral)	April 8, August 8, December 8 (annually)

4. Timeline and Scope of the Grant Writing Process

4.1 Overview of Content in an NIH Fellowship Grant Submission

A National Institutes of Health (NIH) Fellowship submission requires many different documents, each with their own specifications, formats, and page limits (full details are available in the [NIH instructions](#); also discussed in [Chapter 5B](#), and links to the NIH “Focus on Fellowships” videos series are available via the SERCC website). In brief, these documents cover the proposed research plan, the potential of the trainee, the support from the faculty mentor (often also referred to as “Sponsor” by funding agencies) and facilities, as well as potential additional documents if human or vertebrate animal subjects are included. At the University of Iowa (UI), some components will be prepared by you (the trainee), some will be prepared by your mentor or collaborators, and some can be prepared based on boilerplate text from relevant programs and offices. Gathering and coordinating all this information can be confusing when starting a new fellowship proposal; the fellowship grant submission overview below is adapted from a Word document available on the SERCC website ([Overview of Content in an NIH Fellowship Grant Submission](#)) and it is intended to provide a big-picture overview of the steps required in applying for an NIH fellowship and to help demystify the process and get you started preparing your application.

4.1.1 General considerations

- Be sure to read through the relevant [Parent Announcement](#) or [Notice of Funding Opportunities \(NOFO\)](#) and determine which training grant is most appropriate for you and which NIH institute/center your work is most relevant to. Do your best to align your research goals with those of the specific funding opportunity or institute/center you are targeting.
- Start early and set small deadlines for yourself to stay on track. The Scientific Editing and Research Communication Core (SERCC) has a timetable tool, [Recommended Timeline for Fellowship Proposals](#), that you can use to help plan your schedule. Starting early will also give you more time to get feedback from your mentors, colleagues, and others, which is an important part of the process.
- For each section of your application, be sure to convey unique information rather than simply reiterating what is in another section. However, each section should complement the others and paint a single, cohesive picture. This requires that you spend some time thinking about how each section of your application works with the others, including the sections written by other people (e.g., Sponsors and co-Sponsors).
- A unique aspect of fellowship applications is that the funders are not interested only in supporting the proposed research; first and foremost is their funding of you as a trainee. As such, you should put a lot of time and energy into conveying how this fellowship will advance your ability to achieve your career goals. It might be helpful to look at examples of fellowship applications. These may be obtained from the [UI Research Development Office \(RDO\)](#), [Open Grants](#), or other graduate students.

4.1.2 Contact your departmental administrator

There are a few ways to submit a grant to the NIH. At UI, fellowship applications are submitted to the NIH using the research administration tool, Cayuse, in collaboration with your academic department and the Division of Sponsored Programs (DSP). DSP is the office that will ultimately submit the application for you.

- Check with your faculty mentor about the process for submitting grant applications in your academic department.

- In many departments, there will be a departmental administrator or a research administrator who will contact DSP to initiate the application on your behalf. This person will also route your application to DSP for submission.
- Have your application completed and submitted to DSP at least five business days prior to the NIH deadline so that DSP has time to review it, consult you about any issues related to compliance with funding agency requirements, and submit it before the deadline. Remember, the earlier you submit to DSP, the more time they will have to thoroughly review your application.

4.2 Responding to Questions on an NIH Grant Application

4.2.1 Questions you will have to address

The NIH fellowship application includes several questions about yourself and your proposed research. If you don't know how to answer a question, be sure to reach out to your sponsor(s) or departmental administrator to make sure the sections are filled out correctly.

Below is a description of some of the more complicated questions on fellowship applications. Depending on the type of research you do, you may not be able to answer all of them quickly, so make sure to leave plenty of time to provide a thoughtful response.

- Are human subjects involved?
 - This [NIH decision tool](#) can be used to determine whether the proposed research is considered human subjects research or is exempt.
 - If the proposed research involves human subjects and is not exempt, the applicant must provide information regarding the Institutional Review Board (IRB) status of the proposed work, which must be pending or approved at the time of the application submission. (See the [Human Subjects Office \(HSO\) website](#) for more information.)
 - The applicant must also complete a series of additional documents detailing the planned procedures for recruiting and testing human subjects.
 - Of note, independent clinical trials are not eligible for fellowship funding; however, applicants are allowed to propose research projects that are part of ongoing clinical trials, which must be described in the fellowship application.
- Are vertebrate animals used?
 - If vertebrate animals will be used for the proposed research, at any point or at any site, the applicant must provide information regarding the [Institutional Animal Use and Care Committee \(IACUC\)](#) status of the proposed work; the status must be pending or approved at the time of the application submission.
 - The applicant must also complete the “Vertebrate Animals” attachment, detailing exactly how the animals will be used and how ethical principles will be upheld.
 - Are select agents (hazardous biological agents and toxins) involved?
- What is in the budget?
 - In many cases, the departmental administrator will complete this section for you.
 - For fellowship applications, the budget section is relatively straightforward. If the applicant must complete it themselves, they will mainly focus on reporting costs related to the applicant's training (e.g., tuition, stipend, etc.).

4.2.2 Application documents

The rest of the application is largely composed of sections that you and/or other people on your team will write. Some of these comprise standard information about resources and the environment at UI and can be adapted from grants that your mentor has submitted or from boilerplate text. You can find boilerplate text on the [SERCC website resources page](#) or ask your departmental administrator for it. Other sections are specific to you and your project. Below is a list of these documents and a brief description of what each one covers. Page limits are listed in parentheses. If no page limit is included, the length of that section is not restricted. **Chapter 5** goes into greater detail about some of these sections, providing links to writing resources, such as templates and presentations, for those that are most challenging to write.

Cover Letter

- Includes administrative information listed in instructions, including a list of the applicant's referees. Not evaluated with the rest of the application.

Project Summary/Abstract (30 lines or less)

- Brief description of the proposed research that should stand on its own, apart from the rest of the application. If the award is funded, this section is made public.

Project Narrative (3 sentences or less)

- Short description of the public health relevance of the proposed research. If the award is funded, this section is made public.

Bibliography and Works Cited

- List of references to the previous work you cite in your application.

Facilities and Other Resources

- Description of the scientific environment in which you will complete the proposed work and the resources available to enable you to meet your research and training goals.

Equipment

- List of the equipment available to conduct the studies proposed in the fellowship application.

Biographical Sketch (Biosketch)

- A tailored version of your CV that conveys your qualifications for completing the fellowship. Unlike a typical CV, a biosketch includes a personal statement and contributions sections that show how your past experience has prepared you for the proposed research and training. Separate Biosketches must be completed by the applicant and each of the senior/key personnel and significant contributors, and they must be generated using a tool called SciENCv (see [Chapter 5](#) for details, including templates and a presentation).

Goals, Preparedness, and Potential (3 pages)

- Description of the applicant's qualifications for the proposed training, goals, and potential for a productive career in biomedical research.

Training Activities and Timeline (3 pages)

- Overview of each training activity and when it will be completed. This should also include a description of 1) how each activity will help the applicant achieve the goals outlined in the "Goals, Preparedness, and Potential" section and 2) utilize the resources described in the "Facilities and Other Resources" section.

Research Training Project

- This is divided into two sections (described below). See [Chapter 5](#) for details, including templates and presentations.

Research Training Project Specific Aims page (1 page)

- Summary of the background and scientific context for the proposed research, the broad goals and specific aims of the research, and the expected outcomes and broader impact of the work.

Research Training Project Strategy (6 pages)

- Justification for the proposed work and description of the strategies and methods, including support for feasibility of the study and contingency plans in case things don't go as expected.

Training in the Responsible Conduct of Research (1 page)

- Description of the training the applicant has received and will receive in responsible conduct of research. Because this is something that is typically integrated into the graduate curriculum, departments will likely be able to provide templates and/or examples.

Sponsor(s) Commitment (6 pages)

- Document that is completed by the applicant's sponsor and any co-sponsors. It should describe how the sponsor(s) will support the applicant throughout the fellowship. It is helpful for the applicant to provide the sponsor(s) with the "Goals, Preparedness, and Potential," "Training Activities and Timeline," and "Research Training Project" sections, so that the sponsor(s) can comment specifically about the training and research goals the applicant has written about. See [Chapter 5](#) for details, including a template.

Letters of Support from Collaborators, Contributors, and Consultants (6 pages total)

- Letters that are completed by individuals who will provide the applicant with additional training and should detail their anticipated role in the proposed work.

It might seem daunting to complete all of these documents, but by planning ahead and reaching out to others for help and advice, you can submit a strong application.

4.3 Recommended Timeline for Writing Fellowship Proposals

Writing a fellowship can feel like an overwhelming commitment, and it can be difficult to know where to start. It can be helpful to plan designated writing time and give yourself deadlines for each document. The SERCC provides a tool, the [Recommended Timeline for Fellowship Proposals](#), to help with this process. This document will auto-populate with deadlines for writing specific grant documents and contacting various potentially relevant university offices based on manual entry of the funding agency's due date (referred to as the "Sponsor's Deadline" (SD)). The file also color codes the documents according to which must be written by you (the trainee, in blue) and which must be written by your faculty mentor (often also referred to as "Sponsor" by funding agencies) or other collaborators (in red).

Note: boilerplate text may be a useful starting point for writing some of these documents and may be provided by your department or graduate program (see [Chapter 2](#)). Also, boilerplate text describing university facilities is available on the [SERCC website resources page](#).

5A. NIH Fellowship Applications – Goals and Review Criteria

5.1 Overview of Fellowship Applications

5.1.1 Goals of the National Institutes of Health (NIH) F30 and F31 funding mechanisms

According to the NIH, the purpose of its [individual fellowship programs](#) is to “provide [a] mentored research experience to students and scientists at various stages of their careers” (grants.nih.gov, 2026). These fellowships may provide a stipend, tuition and fees, an institutional allowance to help support the costs of training, and childcare costs.

In the case of the F30 mechanism, the [Individual Predoctoral National Research Service Award \(NRSA\) for MD/PhD Fellowships](#), the purpose is to “enhance the integrated research and clinical training of promising predoctoral students, who are matriculated in a combined MD/PhD or other dual-doctoral degree training program (e.g. DDS/PhD, AuD/PhD, DVM/PhD), and who intend careers as physician-scientists or other clinician-scientists” (grants.nih.gov, 2026).

In the case of the F31 mechanism, the [Predoctoral Individual National Research Service Award](#), the purpose is to “enable promising predoctoral students with potential to develop into a productive, independent research scientists, to obtain mentored research training while conducting dissertation research” (grants.nih.gov, 2026).

The NIH also offers individual fellowship programs at additional career levels. These are the [Predoctoral to Postdoctoral Fellow Transition Award](#) (F99), the [Ruth L. Kirschstein Postdoctoral Individual National Research Service Award](#) (F32), and the [Ruth L. Kirschstein National Research Service Awards for Senior Fellows](#) (F33). Below we focus mainly on the F30 and F31 mechanisms.

5.1.2 What F30 and F31 funding provides

Funding typically covers three types of costs: Stipend, Tuition and Fees, and Institutional Allowance. For the current fiscal year ([see budget notice](#)), funding is as follows.

Category	Funding
Stipend	\$29,364 yearly (\$2,447 monthly)
Tuition and Fees	PhD: 60% of tuition, up to \$16,000 per year Dual degree (MD/PhD, AuD/PhD, etc.): 60% of tuition, up to \$21,000 per year
Institutional Allowance	Sponsored by non-Federal Public, Private, and Non-Profit Institutions: \$4,750 Sponsored by Federal and For-Profit Institutions: \$3,650

5.2 How NIH Fellowship Applications Are Evaluated

The following are the review criteria for [F30](#), [F31](#), and [F32](#) applications. Criteria changed recently, and a summary of the new criteria can be found on the NIH web page [Changes to the Fellowship Review Criteria](#). For more information about the fellowship review process, see the [Fellowship Reviewer Guidance](#) or this NIH video [Focus on Fellowships: Part 3 - Fellowship Application Peer Review](#).

5.2.1 Overall impact score

Reviewers will provide an overall impact score to reflect their assessment of the likelihood that the fellowship will enhance the candidate's potential for, and commitment to, a productive independent scientific research career in a health-related field, in consideration of the scored and additional review criteria. The overall merits of the applications will be scored using the three scored review criteria (each scored 1–9, with 1 being the best score), additional review criteria, and additional review considerations as outlined below. The information below is taken from [Section V of the F31 Parent Announcement](#), but applies to F30 and F32 applications as well. Note that additional criteria may apply for certain fellowship mechanisms, so always check the instructions in the relevant Parent Announcement or Notice of Funding Opportunity.

5.2.2 Scored review criteria

Candidate's Preparedness and Potential (reviewers will provide a score from 1–9)

- Discuss the candidate's previous educational, scientific, and professional experience in terms of how it prepares the candidate for the proposed research training plan. Consider the context, for example, the candidate's stage of training and the opportunities available.
- Assess whether the candidate and sponsor (sometimes referred to as "mentor" in this guide) statements as well as the referee letters provide convincing evidence that the candidate possesses qualities (such as scientific understanding, creativity, curiosity, resourcefulness, and drive) that will improve the likelihood of a successful research training outcome.
- Consider the candidate's potential to benefit from the fellowship research training plan and to transition to the next career stage in the biomedical research workforce.

Research Training Plan (reviewers will provide a score from 1–9)

- Assess the rigor and feasibility of the research training project and how completion of the project will contribute to the development of the candidate as a research scientist. (For details of NIH expectations for Rigor and Feasibility, see the SERCC lecture "[Addressing Rigor and Reproducibility in the Research Strategy Lecture](#)".)
- Evaluate the goals of the overall research training plan and the extent to which the plan will facilitate the attainment of the goals.
- Discuss whether the research training plan identifies areas of needed development and contains appropriate, realistic activities and milestones to address those needs.
- Consider whether the sponsor(s), scientific environment, facilities, and resources are adequate and appropriate for the proposed research training plan.
- If the candidate is proposing to gain experience in a clinical trial as part of his or her research training, is there evidence of the appropriate expertise, experience, resources, and ability on the part of the sponsor(s) to guide the applicant during the clinical trial research experience?

Commitment to Candidate (reviewers will provide a score from 1–9)

- Assess whether the sponsor(s) presents a strong mentoring plan appropriate to the needs and goals of the candidate.

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- Evaluate the extent to which the sponsor(s) and organizational commitment is appropriate, sufficient, and in alignment with the candidate's research training plan.
- Consider whether the level of commitment provided will contribute to the successful completion of the proposed plan and allow the candidate to advance to a productive career in the biomedical research workforce.
- If proposed, will the clinical trial experience contribute to the proposed project and/or the candidate's research training?

5.2.3 [Additional review criteria](#)

As applicable for the project proposed, reviewers will evaluate the following additional items while determining merit, and in providing an overall impact score. Although reviewers will consider these criteria in determining the overall impact score, they will not provide individual scores for them.

Protections for human subjects

- For research that involves human subjects but does not involve one of the categories of research that are exempt under 45 Code of Federal Regulations (CFR) Part 46, the committee will evaluate the justification for involvement of human subjects and the proposed protections from research risk relating to their participation according to the following five review criteria: 1) risk to subjects, 2) adequacy of protection against risks, 3) potential benefits to the subjects and others, 4) importance of the knowledge to be gained, and 5) data and safety monitoring for clinical trials.
- For research that involves human subjects and meets the criteria for one or more of the categories of research that are exempt under 45 CFR Part 46, the committee will evaluate: 1) the justification for the exemption, 2) human subjects involvement and characteristics, and 3) sources of materials. For additional information on review of the Human Subjects section, please refer to the [Guidelines for the Review of Human Subjects](#).

Inclusion of human subjects policies

When the proposed project involves human subjects and/or NIH-defined clinical research, the committee will evaluate the proposed plans for inclusion. For additional information on review of the Inclusion section, please refer to the [Guidelines for the Review of Inclusion in Clinical Research](#).

Vertebrate animals

The committee will evaluate the involvement of live vertebrate animals as part of the scientific assessment according to the following three points: (1) a complete description of all proposed procedures including the species, strains, ages, sex, and total numbers of animals to be used; (2) justifications that the species is appropriate for the proposed research and why the research goals cannot be accomplished using an alternative non-animal model; and (3) interventions including analgesia, anesthesia, sedation, palliative care, and humane endpoints that will be used to limit any unavoidable discomfort, distress, pain and injury in the conduct of scientifically valuable research. Methods of euthanasia and justification for selected methods, if NOT consistent with the American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals, is also required but is found in a separate section of the application. For additional information on review of the Vertebrate Animals Section, please refer to the [Worksheet for Review of the Vertebrate Animals Section](#).

Biohazards

Reviewers will assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

Resubmissions

For Resubmissions, the committee will evaluate the application as now presented, taking into consideration the responses to comments from the previous scientific review group and changes made to the project.

Renewals

Individual fellowship awards are generally not renewable. In rare cases in which fellowship recipients require further fellowship support, the committee will consider the progress made in the last funding period.

Revisions

Not Allowed

5.2.4 [Additional review considerations](#)

As applicable for the project proposed, reviewers will consider each of the following items. However, they will not give scores for them and should not consider them in providing an overall impact score.

Training in the responsible conduct of research

All applications for support under this Notice of Funding Opportunity (NOFO) must include a plan to fulfill NIH requirements for Instruction in the Responsible Conduct of Research (RCR). Taking into account the level of experience of the candidate, including any prior instruction or participation in RCR as appropriate for the candidate's career stage, the reviewers will evaluate the adequacy of the proposed RCR training in relation to the following five required components:

- 1) **Format** – the required format of instruction, i.e., face-to-face lectures, coursework, and/or real-time discussion groups (a plan with only on-line instruction is not acceptable);
- 2) **Subject Matter** – the breadth of subject matter, e.g., conflict of interest, authorship, data management, human subjects and animal use, laboratory safety, research misconduct, research ethics;
- 3) **Faculty Participation** – the role of the sponsor(s) and other faculty involvement in the fellow's instruction;
- 4) **Duration of Instruction** – the number of contact hours of instruction (at least eight contact hours are required); and
- 5) **Frequency of Instruction** – instruction must occur during each career stage and at least once every four years.

Plans and past record will be rated as **ACCEPTABLE** or **UNACCEPTABLE**, and the summary statement will provide the consensus of the review committee. See also: [NOT-OD-10-019](#) and [NOT-OD-22-055](#).

Applications from foreign organizations

Reviewers will assess whether the project presents special opportunities for furthering research programs through the use of unusual resources, populations, or environmental conditions that exist in other countries and either are not readily available in the United States or augment existing U.S. resources.

Select agent research

Reviewers will assess the information provided in this section of the application, including

- 1) the Select Agent(s) to be used in the proposed research,
- 2) the registration status of all entities where Select Agent(s) will be used,
- 3) the procedures that will be used to monitor possession use and transfer of Select Agent(s), and
- 4) plans for appropriate biosafety, biocontainment, and security of the Select Agent(s).

Resource sharing plans

Reviewers will comment on whether the Resource Sharing Plan(s) (e.g., [Sharing Model Organisms](#)) or the rationale for not sharing the resources, is reasonable.

Authentication of key biological and/or chemical resources

For projects involving key biological and/or chemical resources, reviewers will comment on the brief plans proposed for identifying and ensuring the validity of those resources.

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Budget and period of support

Reviewers will consider whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed research.

5B. NIH Fellowship Applications – Writing a Strong Application

5.3 Keys to a Strong Application

[Based on a list compiled for the UI Medical Scientist Training Program by Ashley Hood]

1. You need to write the application **but make sure the support of your mentor(s) (sometimes referred to as "sponsor(s)" by funding agencies) is obvious**. Clearly outline their role(s) and coordinate information so that it is consistent between your statements and theirs.
2. Include a biographical sketch (biosketch) that complies with all agency requirements; note that it must be prepared and submitted using the [SciENCv tool](#).
3. Establish an exceptional research and career development team (sponsor(s), co-sponsor, advisory committee) that collectively covers all research and training needs.
4. In selecting individuals to write reference letters for you, be sure to include someone from outside your department to show that you have external support.
5. Leave plenty of time to write the “Candidate’s Goals, Preparedness, and Potential” and “Training Activities and Timeline” documents for your application, and be thoughtful about your answers. Make sure that the planned research and training activities in the two documents clearly and consistently support your stated career goals.
6. Get several people to provide input on your draft. Include some from your lab and some from outside of your lab (e.g., an editor in the Scientific Editing and Research Communication Core (SERCC)) to ensure that it is easily understood by scientists whose research area is closely related to yours and also by scientists with different research interests. Be sure to do this early so that readers can provide detailed feedback and you have sufficient time to incorporate it.

5.4 Overview of Documents That Must Be Submitted

Here we provide a brief summary of each document; additional details are provided in section 5.5. Page limits are noted in the text where they apply. If they are not mentioned, the document does not have a page limit.

5.4.1 Documents that are key to evaluating the proposed research

Research Training Project Specific Aims

This document provides a brief summary of the background and scientific context for the proposed research, the broad goals and specific aims of the research, and the expected outcomes and broader impact of the work. This is the one document that most reviewers (even those not responsible for discussing your application during the study section meeting) are likely to review before providing their scores for your application. Limit: one page (submitted via the PHS Fellowship Supplemental Form, see 5.5.5).

Research Training Project Strategy

This document provides justification for the proposed work and describes the strategies and methods that will be used for the research. The strategies and methods should include support for feasibility of the study and contingency plans in case things don’t go as expected. Limit: six pages (submitted via the PHS Fellowship Supplemental Form, see 5.5.5).

Introduction to resubmissions

Unsuccessful applications may be resubmitted once (subsequently, the same application must be submitted as a new application). When a resubmission is submitted, an Introduction must be included. This document

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summarizes any major changes to the application (changes may not be indicated in the application itself) and responses to issues brought up by reviewers in the summary statement from the previous submission. Limit: one page (submitted via the PHS Fellowship Supplemental Form, see 5.5.5).

Links to resources

The SERCC has developed lectures about, as well as templates for, writing individual sections of fellowship applications. The templates include the National Institutes of Health (NIH) instructions as well as additional tips, guidelines, and formatting instructions. These resources comply with the current SF424 Instructions (FORMS-I). The SERCC lectures were created for the Medical Scientist Training Program (MSTP) and focus on F30 applications, but they are applicable to other types of fellowship applications for PhD students as well and contain guidance for writing and organizing individual documents. These can be viewed as PDFs or as recorded video lectures.

Templates

- [Research Training Project Specific Aims and Strategy Template](#)
- [Fellowship Instructions for NIH and Other Public Health Service \(PHS\) Agencies](#)
- [General Instructions for NIH and Other PHS Agencies](#): For all NIH mechanisms.

SERCC lectures

- [What's in an Aims Page Lecture](#)
- [Addressing Rigor and Reproducibility in the Research Strategy Lecture](#)
- [SERCC Presentations](#)

Notes about resources

- Policy is changing quickly at NIH and other government funding agencies. Therefore, it is important to check for updates to all instructions. As you prepare your application, consult the current Notice of Funding Opportunity (NOFO) for your specific fellowship application and the NIH web page “[Notices of Policy Changes](#).”
- To search for up-to-date (Active) funding opportunities, see [Explore NIH Grant Opportunities](#). Under Filters, check the Active Opportunities box, click Advanced Search, type F30 or F31 into the Activity Code filter, then search. In the desired fellowship row, click the Grants.gov Record, scroll down, and then click the Link to Additional Information for the fellowship details.
- SERCC Templates will be updated to reflect the most current NIH policies as information becomes available.

5.4.2 Documents that are key to evaluating the training potential

Candidate's Goals, Preparedness, and Potential

This is a description of the applicant's qualifications for the proposed training, goals, and potential for a productive career in biomedical research. Limit: three pages (submitted via PHS Fellowship Supplemental Form, see 5.5.5).

Training Activities and Timeline

This document provides an overview of each training activity and when it will be completed. It should also include a description of how 1) each activity will help the applicant achieve the goals outlined in the “Goals, Preparedness, and Potential” section and 2) the resources described in the “Facilities and Other Resources” section will be utilized. Limit: three pages (submitted via PHS Fellowship Supplemental Form, see 5.5.5).

Sponsor(s) Commitment

This is a document that is completed by the applicant's sponsor and any co-sponsors. It should describe how the sponsor(s) will support the applicant throughout the fellowship. It is helpful for the applicant to provide the sponsor(s) with the “Goals, Preparedness, and Potential,” “Training Activities and Timeline,” and “Research Training

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Project” sections so that the sponsor(s) may specifically comment on the training and research goals the applicant has written about. Limit: six pages (submitted via PHS Fellowship Supplemental Form, see 5.5.5).

Biosketch

This is a tailored version of the applicant’s curriculum vitae (CV) that conveys qualifications for completing the fellowship. Unlike a typical CV, a biosketch includes a Personal Statement and Contributions to Science section that shows how past experiences have prepared the applicant for the proposed research and training. A separate biosketch must be completed by the applicant and each of the senior/key personnel and significant contributors (e.g., sponsor/co-sponsor). Instructions for preparing this document using the [SciENCv tool](#) can be accessed via the Senior/Key Person Profile Form (see section 5.5.4).

Letters of Recommendation and Support

These letters are completed by individuals who will provide the applicant with additional training or support and should detail their anticipated role in the proposed work. SERCC provides two presentations about how to request letters of recommendation and letters of support, linked below. Two types of letters can be added to your application. The page limits are specified below (submitted via PHS Fellowship Supplemental Form, see 5.5.5).

Letters of recommendation

Three are required, but up to five can be submitted. Aim to formally request letters one month before the fellowship is due, and provide the referee with key deadlines, fellowship documents, and details about what to include. Two weeks before the deadline, follow up with the referee. They must submit the letter through eRA commons before the fellowship deadline, at which point you will be able to see the completed submission, though the contents will be hidden. Limit per letter: two pages.

Letters of support

These letters are not required but could be pertinent to your specific proposal. They may describe institutional commitment or resources provided for your proposal, contributions from a collaborator, or support from a potential or current user of a resource or service proposed in your application. If you choose to request letters of support, be sure to mention the role of each “supporter” in your training plan. Limit: six pages in total.

Links to resources

Templates

- [Candidate's Goals, Preparedness, and Potential Template](#)
- [Training Activities and Timeline Template](#)
- [Sponsor\(s\) Commitment Template](#)
- [SERCC-annotated Instructions for the Biographical Sketch](#)

Lectures

- [Considerations for the Research Training Plan Lecture](#)
- [Biosketch Lectures](#)
- [Obtaining Letters of Recommendation and Support Lecture](#)

5.4.3 Other documents that must be submitted

For detailed instructions for the following documents, see the [Fellowship Instructions for NIH and Other PHS Agencies](#).

Cover Letter

The cover letter includes administrative information listed in the instructions, including the application title, the title of the NOFO (Program Announcement or Request for Applications), and a list of the applicant’s referees. If an application is late, the cover letter should include information about the nature of the delay, and if an application

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has been changed or corrected and resubmitted after the due date, the reason should be explained, and all information from the previous cover letter should be included. Certain budget conditions or agency approval documentation conditions can be included if needed (see details in [Fellowship Instructions for NIH and Other PHS Agencies](#)). The following additional information may be included if appropriate: a statement of intent if a video will be submitted as post-submission material; and a statement that the proposed study will generate large-scale genomic data when this is the case. The cover letter is not evaluated with the rest of the application and is not seen by peer reviewers. (Submitted via SF424 R&R Form, Fellowship Supplemental Form, see 5.5.1).

Project Summary/Abstract

This document is a brief description of the proposed research and training plan that should stand on its own, apart from the rest of the application. It should include the long-term objectives, specific aims, methods, and the health relatedness of the proposed work specific to the mission of the funding agency. Avoid discussing previous accomplishments and using first person voice. Also, avoid including proprietary or confidential information as this section is made public if the award is funded. It is also advisable to write this in language that is understandable to a science-literate nonspecialist (helps the public understand how NIH-funded research contributes to the public good). Limit: 30 lines (submitted via R&R Other Project Form, see 5.5.2).

Project Narrative

This is a short description of the public health relevance of the proposed research. If the award is funded, this section is made public. Limit: three sentences (submitted via R&R Other Project Form, see 5.5.2).

Bibliography and Works Cited

This is a list of references to the previous work you cite in your application. (Submitted via R&R Other Project Form, see 5.5.2.)

Facilities and Other Resources

This is a description of the scientific environment in which you will complete the proposed work and the resources available to enable you to meet your research and training goals. It covers both the physical resources that are available and the intellectual rapport at your institution. If you will be working with biohazardous or other dangerous materials, describe safety measures. Your sponsor will likely have a good starting draft for this document from their previous grant submissions; if so, you can tailor this to your fellowship. SERCC has also developed a [Facilities and Resources Template](#), including information on content and organization, as well as and some boilerplate text that may be applicable. (Submitted via R&R Other Project Form, see 5.5.2.)

Equipment

This is a list of the major equipment available to conduct the studies proposed in the fellowship application. Your sponsor will likely have a good starting draft for this document from their previous grant submissions; if so, you can tailor this to your fellowship. (Submitted via R&R Other Project Form, see 5.5.2).

Training in the Responsible Conduct of Research

This is a description of the training in responsible conduct of research that the applicant has received and will receive. Because this is something that is typically integrated into the graduate curriculum, departments will likely have templates and/or examples available. Limit: one page (submitted via PHS Fellowship Supplemental Form, see 5.5.5).

5C. NIH Fellowship Application – Using the NIH Instructions

5.5 Navigating the SF424 Application Forms to Find Instructions for Key Documents

The SF424 Application Guide provides general instructions regarding applications and is organized by activity code (e.g., Fellowship (F), Career (K), Research (R)). Instructions can be downloaded as a PDF file from the NIH web page [How to Apply – Application Guide](#) (Figure 5.1).

These instructions are typically valid for broad categories of applications and for multiple years. When major changes to NIH instructions are implemented or significant new requirements are incorporated, the SF424 guidelines are updated to a new set of “Forms” denoted by a capital letter. At the time of this update (July 2026), the valid instructions were referred to as SF424 Forms I (the prior version was Forms H).

The Fellowship application guide includes instructions for completing the five forms that are described below. One is depicted in Figure 5.2; it includes numerous fields for administrative information, as well as links for attaching the required documents. The content of these forms is described in greater detail below. To fill out the administrative fields, work with your sponsor and/or research administrator, and/or consult additional resources described in Chapter 4.2.1.

Form-by-Form, Field-by-Field Application Instructions		
Determine the Correct Application Instructions for Your Activity Code		
Application Instructions	Description	SF424 (R&R) - Version I (Due dates ON/AFR Jan. 25, 2025) Alert Updated December, 2025. See Significant Changes .
G General Instructions	Comprehensive guidance, including standard instructions that apply to all applications and all program-specific instruction call-out boxes (research, training, fellowship, career development, multi-project, and small business)	HTML / PDF
Filtered Application Instructions		
R Research Instructions	Standard instructions that apply to all applications plus research instruction call-out boxes. Activity Codes: Research (R), including Research Education (R25), and equivalent Cooperative Agreements (U)	PDF
K Career Development Instructions	Standard instructions that apply to all applications plus career development instruction call-out boxes. Activity Codes: Individual Career Development (K), excluding Institutional Career Development (K12, K12, KM1)	PDF
T Training Instructions	Standard instructions that apply to all applications plus training instruction call-out boxes. Activity Codes: Institutional Training (T), including International Training (D43, D71, U2R) and Institutional Career Development (K12, K12, KM1)	PDF
F Fellowship Instructions	Standard instructions that apply to all applications plus fellowship instruction call-out boxes. Activity codes: Fellowship (F)	PDF
M Multi-Project Instructions	Standard instructions that apply to all applications plus multi-project instruction call-out boxes. Activity Codes: Program Project Grants and Center Grants (P) and equivalent Cooperative Agreements (U)	PDF
B SBIR/STTR Instructions	Standard instructions that apply to all applications plus small business instruction call-out boxes. Activity Codes: R41-R44, SB1, U43, U44, UB1, UT1, UT2	PDF

Figure 5.1. Screenshot of the NIH website where you can find the SF424 Application guide that’s relevant to the NIH mechanism you will apply for.

SF 424 (R&R) Form

View Burden Statement OMB Number: 4040-0011 Expiration Date: 12/31/2022

APPLICATION FOR FEDERAL ASSISTANCE
SF 424 (R&R)

1. TYPE OF SUBMISSION: ☐ Pre-application ☐ Application ☐ Change/Amended Application

2. DATE RECEIVED BY STATE: State Application Identifier

3. DATE SUBMITTED: Applicant Identifier

4. APPLICANT INFORMATION: UBI: []

Legal Name: [] Department: [] Division: [] Street1: [] Street2: [] City: [] State: [] Country: [] ZIP / Postal Code: []

Person to be contacted on matters involving this application: First Name: [] Middle Name: [] Last Name: [] Suffix: [] Position/Title: [] Street1: [] Street2: [] City: [] State: [] Country: [] ZIP / Postal Code: [] Phone Number: [] Fax Number: [] Email: []

6. EMPLOYER IDENTIFICATION (SBN or ITN): []

7. TYPE OF APPLICANT: ☐ Small Business Organization Type ☐ Women Owned ☐ Socially and Economically Disadvantaged

8. TYPE OF APPLICATION: ☐ New ☐ Revision ☐ Renewal ☐ Continuation ☐ Extension

9. NAME OF FEDERAL AGENCY: []

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: []

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: []

12. PROPOSED PROJECT: Start Date: [] Ending Date: []

13. CONGRESSIONAL DISTRICT OF APPLICANT: []

14. AUTHORIZED REPRESENTATIVE: First Name: [] Middle Name: [] Last Name: [] Suffix: [] Position/Title: [] Organization: [] Street1: [] Street2: [] City: [] State: [] Country: [] ZIP / Postal Code: [] Phone Number: [] Fax Number: [] Email: []

15. SIGNATURE OF AUTHORIZED REPRESENTATIVE: [] Date Signed: []

16. Pre-application: [] Add Attachment: []

17. Cover Letter Attachment: [] Add Attachment: []

Figure 5.2. SF424 (R&R) Form. Forms included in the SF424 guidelines include both fields requiring administrative information and attachments (bottom of page 2).

5.5.1 The SF424 (R&R) form

This form is depicted in Figure 5.3 and addresses mostly administrative components. The one exception is the following

Cover Letter Attachment

See Section 5.4.3 for required content.

5.5.2 The SF424 (R&R) Other Project Information form

This form is depicted in Figure 5.4 and begins with questions about human subjects or vertebrate animal research here. We do not go into detail about answering these but be sure to complete these in consultation with your sponsor, research administrator, and/or resources described in Chapter 4.2.1. The non-administrative components of this form are the following:

Project Summary/Abstract

See 5.4.3 for required content.

Project Narrative

See section 5.4.3 for content.

Bibliography and References Cited

See section 5.4.3 for content.

Facilities and Other Resources

See section 5.4.3 for content.

Equipment

See 5.4.3 for required content.

F.200 - SF 424 (R&R) Form

The SF 424 (R&R) Form is used in all grant applications. This form collects information including type of submission, applicant information, type of applicant, and proposed project dates.

[View larger image](#)

Quick Links

- [1. Type of Submission](#)
- [2. Date Submitted and Applicant Identifier](#)
- [3. Date Received by State and State Application Identifier](#)
- [4a. Federal Identifier](#)
- [4b. Agency Routing Identifier](#)
- [4c. Previous Grants.gov Tracking ID](#)
- [5. Applicant Information](#)
- [6. Employer Identification](#)
- [7. Type of Applicant](#)
- [8. Type of Application](#)
- [9. Name of Federal Agency](#)
- [10. Catalog of Federal Domestic Assistance Number and Title](#)
- [11. Descriptive Title of Applicant's Project](#)
- [12. Proposed Project](#)
- [13. Congressional District of Applicant](#)
- [14. Project Director/Principal Investigator Contact Information](#)
- [15. Estimated Project Funding](#)
- [16. Is Application Subject to Review by State Executive Order 12372 Process?](#)
- [17. Certification](#)
- [18. SFLLL \(Disclosure of Lobbying Activities\) or Other Explanatory Documentation](#)
- [19. Authorized Representative](#)
- [20. Pre-application](#)
- [21. Cover Letter Attachment](#)

Figure 5.3. Application component that is uploaded via the SF424 (R&R) Form. The blue arrow identifies the component described in this manual.

Form

The R&R Other Project Information Form is used for all grant applications. This form includes questions on the use of human subjects, vertebrate animals, and environmental impact. This form also has fields to upload an abstract, project narrative, references, information on facilities, and equipment lists.

[View larger image](#)

Quick Links

- [1. Are Human Subjects Involved?](#)
- [1a. If YES to Human Subjects](#)
- [2. Are Vertebrate Animals Used?](#)
- [2a. If YES to Vertebrate Animals](#)
- [3. Is proprietary/privileged information included in the application?](#)
- [4. Environmental Questions](#)
- [5. Is the research performance site designated, or eligible to be designated, as a historic place?](#)
- [6. Does this project involve activities outside of the United States or partnerships with international collaborators?](#)
- [7. Project Summary/Abstract](#)
- [8. Project Narrative](#)
- [9. Bibliography & References Cited](#)
- [10. Facilities & Other Resources](#)
- [11. Equipment](#)
- [12. Other Attachments](#)

Additional Instructions for Fellowship:

This R&R Other Project Information Form should be completed in consultation with the sponsor and administrative officials at the sponsoring institution.

Figure 5.4. Application components that are uploaded via the SF424 (R&R) Other Project Information Form. The blue arrows identify the components described in this manual.

5.5.3 The SF424 (R&R) Project/Performance Site Location form

This form is depicted in Figure 5.5. We do not go into detail about project performance sites because this is usually relatively straightforward and requires entering information about the location and institution where the research project will take place. Be sure to fill this out, and if you have any questions, consult your sponsor, research administrator, or a resource mentioned In Chapter 4.2.1.

5.5.4 The SF424 (R&R) Senior/Key Person Profile form

This form is shown in Figure 5.6. In a fellowship application, the graduate student applying for the award is considered the PI/Program Director (PD), and the faculty mentor is the sponsor. Since you are the PI/PD on the application, you must have an eRA Commons account that is affiliated with the applicant organization (UI), and the account must list you as the PI.

Biosketch

See 5.4.2 for required content.

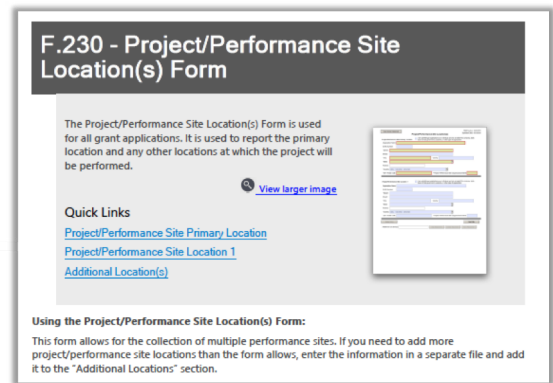


Figure 5.5. Application components that are uploaded via the SF424 (R&R) Project/Performance Site Location(s) Form.

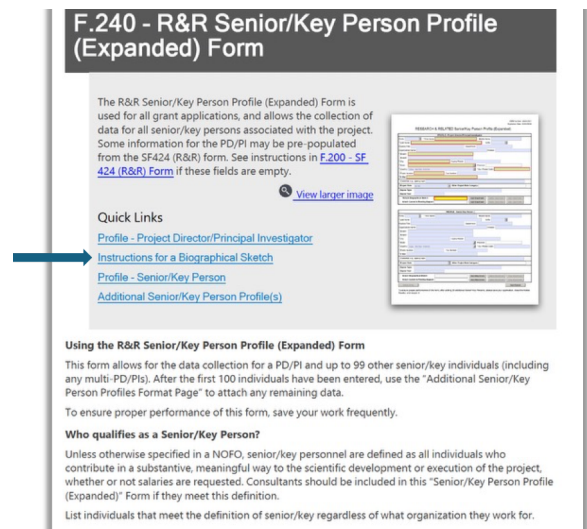


Figure 5.6. Application components that are uploaded via the SF424 (R&R) Senior/Key Person Profile Form. The blue arrow identifies the instructions for writing a Biographical Sketch (Biosketch). These instructions are summarized here and in templates and lectures from the SERCC.

5.5.5 The PHS Fellowship Supplemental form

This form is shown in Figure 5.7 and covers numerous documents. We focus on those most relevant to the proposer research and the training plan.

Introduction

Introduction to Application

See 5.4.2 for required content.

Candidate Section

Candidate's Goals, Preparedness, and Potential

See 5.4.2 for required content.

Research Training Plan

Training Activities and Timeline

See 5.4.2 for required content.

Research Training Project Specific Aims

See 5.4.1 for required content.

Research Training Project Strategy

Commitment to Candidate, Mentoring and Training Environment

Sponsor(s) Commitment

See 5.4.2 for required content.

5.6 Where to Find Updates to the Instructions and How to Prioritize Conflicting Information

The NIH provides guidance to authors at three levels as described below. As discussed above, the instructions in the SF424 Application Guide are general and do not typically change frequently. However, instructions that are more specific may be published before the more general instructions are changed. Such changes could be introduced via a Parent Announcement (PA), a Notice of Funding Opportunity (NOFO) or Related Notices, described below.

5.6.1 Notice of Funding Opportunity (NOFO)

NOFOs provide specific instructions for a particular funding mechanism, e.g., for specific types of fellowships to address particular issues. NOFOs include information about due dates, which NIH institutes participate in the program, and specific requirements that do not apply to the standard version of that funding mechanism. Because

F.430 - PHS Fellowship Supplemental Form

The PHS Fellowship Supplemental Form is used only for fellowship applications.

This form includes fields to upload several attachments including the Specific Aims, Research Strategy, and Applicant Background and Goals.

The attachments in this form, together with the rest of your application, should include sufficient information needed for evaluation of the project and fellow, independent of any other documents (e.g., previous application). Be specific and informative, and avoid redundancies.

[View larger image](#)

Quick Links

- [Introduction](#)
- [1. Introduction to Application \(for Resubmission applications\)](#)
- [Candidate Section](#)
- [2. Candidate's Goals, Preparedness and Potential](#)
- [Research Training Plan](#)
- [3. Training, Activities and Timeline](#)
- [4. Research Training Project Specific Aims](#)
- [5. Research Training Project Strategy](#)
- [6. Progress Report Publication List \(for Renewal applications\)](#)
- [7. Training in the Responsible Conduct of Research](#)
- [Commitment to Candidate, Mentoring and Training Environment](#)
- [8. Sponsor\(s\) Commitment](#)
- [9. Letters of Support from Collaborators, Contributors, and Consultants](#)
- [10. Description of Candidate's Contribution to Program Goals](#)
- [Other Research Training Plan Section](#)
- [Vertebrate Animals](#)
- [11. Are vertebrate animals euthanized?](#)
- [12. Vertebrate Animals](#)
- [13. Select Agent Research](#)
- [14. Resource Sharing Plan](#)
- [15. Other Plan\(s\)](#)
- [16. Authentication of Key Biological and/or Chemical Resources](#)
- [Additional Information Section](#)
- [17. Human Embryonic Stem Cells](#)
- [18. Alternate Phone Number](#)
- [19. Degree Sought During Proposed Award](#)
- [20. Field of Training for Current Proposal](#)
- [21. Current or Prior Kirschstein-NRSA Support?](#)
- [22. Applications for Concurrent Support?](#)
- [23. Citizenship](#)
- [24. Change of Sponsoring Institution](#)
- [Budget Section](#)
- [25. Tuition and Fees](#)
- [26. Childcare Costs](#)
- [27. Present Institutional Base Salary](#)
- [28. Stipends/Salary During First Year of Proposed Fellowship](#)
- [Appendix](#)
- [29. Appendix](#)

Figure 5.7. Application components that are uploaded via the SF424 (R&R) PHS Fellowship Supplemental Form. The blue arrows identify the instructions for writing the components described in this manual. These instructions are summarized in Section 5.4 and are further explained in templates and lectures from the SERCC.

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these instructions can be for application types that have a very specific purpose, they supersede the guidance in the parent NOFO and the standard guidance in the SF424 Application Guide.

5.6.2 Related Notices

These typically provide updates to PAs/NOFOs, or clarifications that are made after the SF424 and PA/NOFO of interest are published. They therefore supersede the instructions in both the SF424 Application Guide and the NOFO. You can find these notices by checking the PA/NOFO of interest periodically; related notices will be linked to the NOFO once they are published.

5.7 Boilerplate Language

[To be added by graduate programs: links to any boilerplate text they might make available to their students]

5.8 Instructional Videos from NIH

- [NIH Webinar: Focus on Fellowships Part 1. Introduction to NIH Fellowship Funding Opportunities](#)
- [NIH Webinar: Focus on Fellowships Part 2. Information for Candidates](#)
- [NIH Webinar: Focus on Fellowships Part 3. Fellowship Application Review](#)
- [NIH Webinar: Focus on Fellowships Part 4. Information for Sponsors](#)

6. Adapting Information from NIH and NSF Templates for Other Funding Opportunities

Chapter 6 in Microsoft Word Format (contains figures) – [link to be added]

Writing a good grant application requires that you understand what your funder is looking for and that you provide the requested information as logically, clearly, and succinctly as possible. In other words, you need to make it easy for reviewers to find the information they need to evaluate your proposal, and you need to present the information clearly and concisely.

An existing template for one grant type can be adapted to a new funding opportunity—even for a different funder and a vastly different mechanism. The key is to retain the logical linkage provided by the original template, while adapting the content to the specific instructions for the funding opportunity of interest, and accommodating any constraints those impose. Below, we illustrate this concept—using the Scientific Editing and Research Communication Core’s (SERCC’s) template for writing a standard National Institutes of Health (NIH) R01 application as the starting point—in developing a template for a departmental funding opportunity.

6.1 The Original Template and the Application Instructions

Figure 6.1A shows the standard NIH R01 template that is available on the [SERCC website](#) (image captured Jan 2026). The SERCC editors are very familiar with this template, and actively track announcements of changes and adapt the template accordingly. When adapting a template to a different funding mechanism than intended, be sure to read the instructions and understand the differences in expectations. (The SERCC can help prepare a template specific for that funding opportunity if needed.) This helps ensure that everyone working on the grant (applicant, co-authors, editor) has the same expectations before most of the writing is done, and it often avoids unnecessary duplication of information.

Figure 6.1B shows an example of a template that the SERCC adapted from the their standard R01 template ([NIH Research Grant \(R\) Application Template, Specific Aims and Research Strategy](#)). It was designed to optimize the flow of logic through the grant. Although the page limit for this application was much shorter than for the NIH R01 application, the specialized template has a similar overall structure. It merges much of the content normally found on an NIH

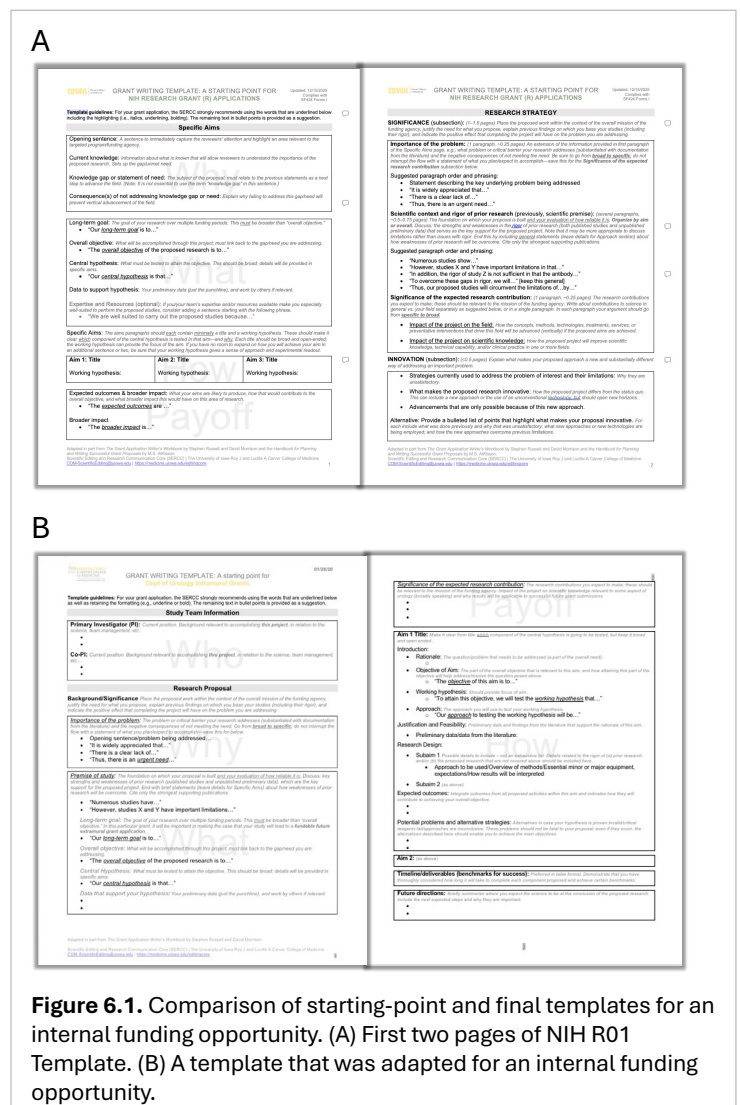


Figure 6.1. Comparison of starting-point and final templates for an internal funding opportunity. (A) First two pages of NIH R01 Template. (B) A template that was adapted for an internal funding opportunity.

Specific Aims page with that typically found in the NIH Research Strategy document, ensuring that all of the required components are present. This template also ensures that the review criteria are addressed as effectively as possible. The following big-picture elements come from the Specific Aims page: why this problem should be addressed now; what the overall goal of the project is; in general, what the research approach is; and what the expected payoff is. Also, these elements roughly bookend the shorter application. Additional details for the specialized grant are provided by elements taken from the Research Strategy of the R01 template, which focuses more on the approach to be taken.

To design a template for a specific funding opportunity, study the announcement for that application carefully. Identify any differences in requested content, as well as differences in the order in which the content is expected, and add what is necessary to the specialized template, arranging it as necessary to both comply with the new requirements and present it in the most logical way. The template in **Figure 6.1B** was generated by incorporating the goals, instructions (including space constraints), and review criteria into the standard SERCC R01 template, as described in more detail below.

6.2 Considerations in Adapting the Template

Key points in this funding opportunity announcement (**Figure 6.2**) were the following:

6.2.1 Program objectives

- Support departmental research projects
- (Because projects are considered pilots) produce results that:
 - Support future grant submissions (non-internal)
 - Are relevant to [the field of] urology in the broadest possible sense
- Use funds within a 12-month period (requirement)

6.2.2 Instructions

- Applications may not exceed 2 pages, except:
 - Abstract (≤ 500 words)
 - Budget
 - Budget justification
 - Literature cited (≤ 5 references)
- The 2 pages (i.e., research plan) must include:
 - Study team information
 - Research proposal
 - Specific Aims
 - Hypotheses
 - Background/significance
 - Research design/methods
 - Expected outcomes
 - Study timeline
- Proposals will be scored on a scale of 0–5 points based on scientific merit, scientific impact, feasibility, likelihood that project will lead to extramural funding.

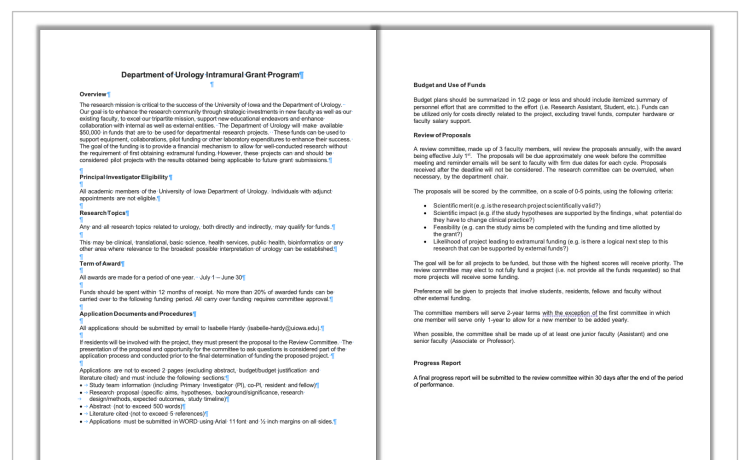


Figure 6.2. Instructions for internal funding opportunity of interest. Instructions are shorter than those for NIH grants, and much less complex.

6.2.3 Review criteria and the related questions reviewers are asked in assessing proposals

- Scientific merit:
 - Is the research project scientifically valid?
- Scientific impact:
 - If the study hypotheses are supported by the findings, what potential do they have to change clinical practice?
- Feasibility:
 - Can the study aims be completed with the funding and time allotted by the grant?
- Likelihood that project will lead to extramural funding:
 - Is there a logical next step to this research that can be supported by external funds?

6.3 Content

6.3.1 Incorporating content specified in the instructions in the new template

Study Team Information (template page 1)

As illustrated in **Figure 6.3A**, this information is provided on the first page of the template and divided into information about the primary investigator (PI) and information about any co-PIs.

Research Proposal (template page 1)

As illustrated in **Figure 6.3A**, a subset of this information is shown on the first page of the template.

- Specific Aims
- **Hypotheses**
- **Background/significance**
- Research design/methods
- Expected outcomes
- Study timeline

Research Proposal (template page 2)

As illustrated in **Figure 6.3B**, additional details about the hypotheses and background/significance are provided, and here it is broken down by Specific Aim. Other information includes the experimental design and alternative approaches for each Specific Aim, expected outcomes (overall and by Specific Aim), and a study timeline.

- **Specific Aims**
- **Hypotheses (by Specific Aim)**
- **Background/significance (by Specific Aim)**
- **Research design/methods**
- **Expected outcomes**
- **Study timeline**

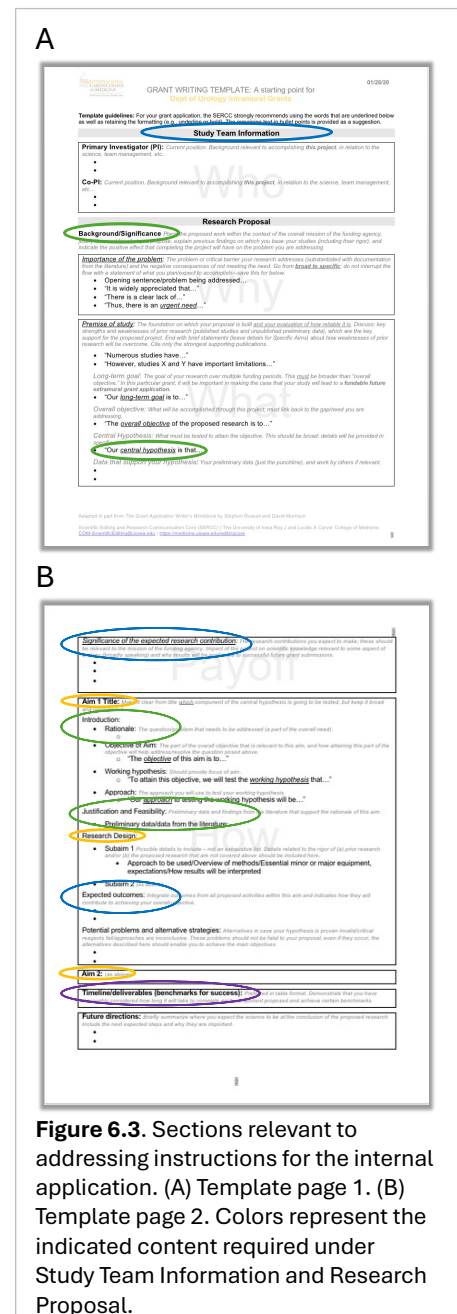


Figure 6.3. Sections relevant to addressing instructions for the internal application. (A) Template page 1. (B) Template page 2. Colors represent the indicated content required under Study Team Information and Research Proposal.

6.3.2 Incorporating content that addresses the review criteria into the new template

Scientific Merit

“Is the research project scientifically valid?” In determining this, reviewers appreciate clearly marked sections on the:

- Importance of the problem (WHY?)
- Premise of the study (WHAT?)
- Overall objective(s) of proposed study (WHAT?)
- Central hypothesis of proposed study (WHAT?)

Scientific Impact

“If the study hypotheses are supported by the findings, what potential do they have to change clinical practice?” In determining this, reviewers appreciate clearly marked section on the:

- Significance of the expected research contribution (PAYOFF).

Feasibility

“Can the study aims be completed with the funding and time allotted by the grant?” In determining this, reviewers will appreciate clearly marked section entitled:

- Timeline and/or
- Deliverables/benchmarks for success.

Likelihood that project will lead to extramural funding

“Is there a logical next step to this research that can be supported by external funds?” In determining this, reviewers will appreciate clearly marked sections entitled:

- Significance of the expected research contribution (PAYOFF)
- Future Directions

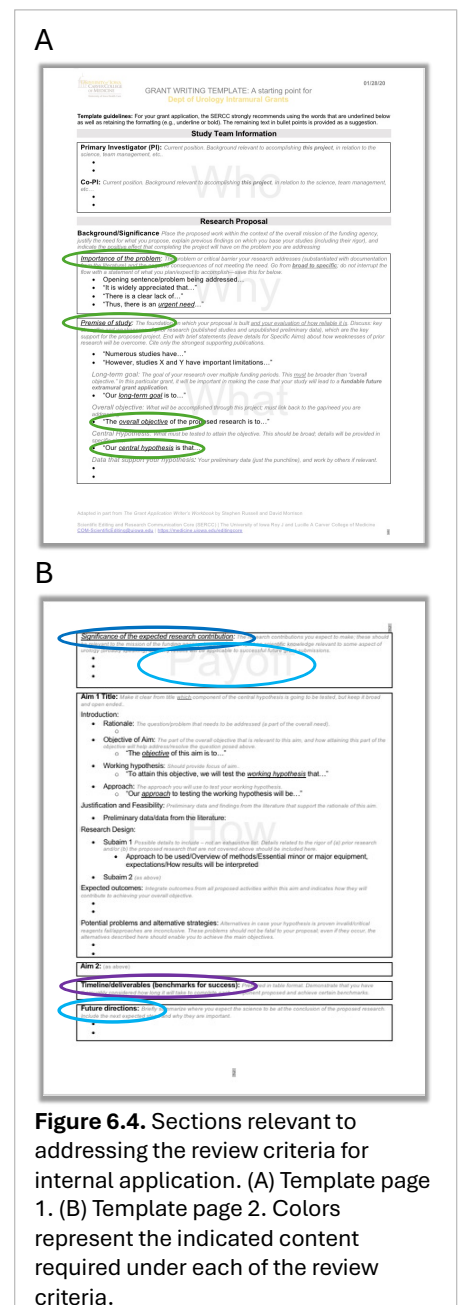
6.3.3 Notes about the template, including details that should be added to each section

Study Team Information

Here, it can be helpful to take advantage of the instructions for the NIH biographical sketch (biosketch, see examples provided with the [SERCC's NIH biosketch instructions](#)). Specifically, provide a brief description of why you are well-suited for your role in the project described in this application. This may include: aspects of your training; previous experimental work/contributions to science either on this specific topic or related topics; technical expertise, collaborators or scientific environment; and past performance in the field of interest or in a related field. Have any co-PI do the same. However, be mindful of your page limits. It is possible that you will have to limit yourself to only the most important information about each team member (the funder may not want that much information on this topic).

Background/Significance

Consider discussing the importance of the problem, the premise of the study, and the significance of the expected research contribution.



- When discussing the premise, tell the reviewers what you think is happening and why; convince them that you are on to something. Discuss the data you are basing your hypotheses on and how reliable those data are. This may be preliminary data from your laboratory or that of someone else, with permission.
- For significance of the expected research contributions, discuss how your anticipated findings would contribute to the field, to the mission of this funder and this application type, and why a future funder would be interested.

Aims

- For each Specific Aim, make the introduction similar to the premise of the study, but focused on just this part of the project.
- For Justification and Feasibility, you might include two types of information
 - *Justification of need*, which would likely come largely from the *literature*.
 - *Evidence of feasibility*, i.e., evidence that you can do the work necessary to solve the problems you have framed, which would come from *preliminary data*.

Research Design

- Depending on space, this could be more than one paragraph per Specific Aim.
- It should be related to the research activities that will be undertaken to accomplish the objectives.
- Each paragraph should make a single conceptual point.
- Each activity should be introduced with an interest-grabbing statement (e.g., “Aim 2.1. Identify the cell types that require activity of the mmd protein”).

Expected Outcomes

- Integrate the expected outcomes for the aim (one per activity)
- Convey how the expected outcomes collectively achieve the objective of the aim
- Mention any important caveats

Potential Problems and Alternative Solutions

- Identify problems that could arise but *probably won't*; only the most important and probable, e.g.:
 - assays might not be sufficiently discriminating
 - critical reagents/patient samples might not be available
 - your working hypothesis might be proven invalid
- For each, identify:
 - the nature of the problem
 - reasons it is unlikely to arise
 - alternative approaches you would try if it were to arise

Timeline/Deliverables

- Table or paragraph outlining time needed to complete each subaim.
 - Show that grant is not over- or under-ambitious
 - The fact that you've thought about this will be a plus

Future Directions

- Brief summary of where you think the science will be when you are done
- Mention the next expected steps and why they are important
- Mention which funding agency would likely be interested

6.3.4 When going beyond the bullet points in the template to writing sentences and paragraphs

Try to start early enough to

- Take a break before expanding to sentences and paragraphs
- Get constructive criticism from colleagues (can include fellow students in addition to mentors and collaborators)
- Cycle through making sure that each component achieves its purposes and is linked logically to other components.

Be sure to

- Leave nothing to the interpretation of reviewers (spell out your meaning)
- Highlight key terms/concepts, but don't overdo it with respect to frequency or style.

*Make it easy for reviewers to find **key information***

Headings and titles (“Significance,” “Approach,” aims titles)

- Give them their own lines, make sure they stand out

Statements of significance or impact

- Highlight and make sure they stand out

Concepts underlying aims

- Consider using a simple schematic to illustrate: how they relate to both **what is known** and to **one another**; and what makes them independent of one another.

In talking about outcomes

- Do not overstate [we will define]
- Do not understate [we may lay the foundation for; this may be relevant to]
- Make it conditional [has the potential to; is expected to identify]

7. Achieving Clarity in Scientific Writing

In any piece of scientific writing, the authors need to pay careful attention to clarity to make sure that the information they are sharing is easy to interpret correctly. This will be essential for the reviewers who evaluate the science for either funding or publication. Also, in the case of a publications, writing logically—and from the reader’s perspective—is critical for maximizing the chances that the scientific message is interpreted accurately by the broader community of readers. In the words of [George Gopen and Judith Swan](#):

*If the reader is to grasp what the writer means, the writer must understand what the reader needs.**

The Scientific Editing and Research Communication Core (SERCC) has developed presentations that cover reader expectations based on the article cited above, a variety of other sources, and their own experiences with grant and manuscript writing. Topics covered in these presentations include how to guide readers with structural clues; how to write clear, easy-to-follow paragraphs; how to use sentence structure to maintain clarity; and the value of sticking to impactful verbs and other language.

Here we provide access to these SERCC presentations ([Achieving Clarity in Scientific Writing](#), Writing for Success: Making Yourself Understood to Funders and Publishers). In addition, below we summarize some of the most important tips from them.

7.1 Structure in Scientific Writing

Clarity in scientific writing comes from the use of structural elements at multiple levels: sentences, paragraphs, and sections of documents, as well as data presentation. Here we summarize key principles to keep in mind in writing at the sentence and paragraph levels.

7.1.1 Sentence structure

- Use the topic and stress positions of a sentence wisely. In general:
 - Provide old information (i.e., context) in the first part of the sentence (the topic position).
 - Provide new information in the last part of the sentence (the stress position).
 - This will help your reader to orient themselves first (follow the logic of the story) and also make the new information more memorable.
- Place the verb near its grammatical subject.
 - Long interruptions between the subject and what it does or is done to it can lose the reader.
- Articulate the action of every clause and sentence in its verb.
 - State what the action is rather than implying it (e.g., not “show the effects of Notch on X,” but rather “show that Notch represses X”).
 - Avoid using noun forms of the verbs that tell your story instead of using the verbs themselves (e.g., using “analysis” rather than “analyze”) followed by a verb that isn’t very descriptive (“is”).
- Use parallel structure.
 - E.g. when writing lists, make sure that all components are nouns, verbs, or adjectives.
- Avoid making sentences more complicated than necessary.
 - E.g., when long strings of nouns or adjectives are used, the reader may miss the point.
 - Complicated sentences are prone to dangling modifiers (unclear what something refers to).

7.1.2 Paragraph structure

- Limit each paragraph to one major idea.
- Describe this idea in a logical manner (main idea; followed by evidence; followed by analysis; followed by summary of main point plus further analysis, i.e., “lead out”).
- Spell out interpretations or conclusions.
- Use linker words or phrases to cue the reader about the direction the story is taking.
- Pay attention to sentence structure (topic-stress position).
 - Option 1: Use alternating old-new old-new structure to build paragraphs that flow in an order that’s logical to the reader.
 - Option 2: Connect sentences based on a common topic or concept described in an earlier sentence.
 - It’s not necessary to always use the topic and stress positions as described here, or generate paragraphs based on them, but if you are having trouble linking the information logically and introducing new information without it coming out of the blue, give this a try. This can be especially helpful for the first paragraph or specific aims.

7.2 Storytelling Within a Document (More Structure)

7.2.1 Tell your story with a clear beginning, middle, and end

- On the Specific Aims page of a grant, this means:
 - Starting with the problem you plan to address and why it’s important (to provide context)
 - Discussing what you propose to do to address the problem and how
 - Ending on how success with the proposed research will move the field forward
- See **Chapter 5** to see how this might look on the Specific Aims page of a fellowship application.

7.2.2 Use parallel construction within parts of a document

- This doesn’t matter only at the sentence level; the structure of one part of a document will set expectations of others.
- Within the Specific Aims page of a fellowship application:
 - Structure the Specific Aims paragraphs the same way.
 - If you start out one with the working hypothesis and follow that with approach, do the same in the other.
- Within the Research Strategy section/Approach subsection of a fellowship application:
 - Present the paragraphs in this section in the same way.
 - If you use the following order for one Specific Aim, do the same for the other: aims title, introduction/rationale paragraph, justification and feasibility paragraph, research design paragraphs, expected outcomes paragraph, potential problems and alternative strategies paragraph.

7.2.3 Use good signposting

- Provide cues and transitions to keep the reader oriented (give them direction).
- Underline key terms to help the reader quickly find the information they need, e.g., on the Specific Aims page, these might include:
 - critical need
 - long-term goal

- objective (of the proposed research)
- central hypothesis (overall)
- rationale
- specific aims
- working hypothesis (by aim)
- expected outcomes
- positive impact

7.2.4 Avoid red herrings!

- When providing context, don't overdo it (you don't want to lose the reader in excess detail).
- Don't provide too much highlighting—or make it so complex that the reader feels the need to crack a code.
- Make sure labels and abbreviations aren't used inconsistently.
- Be sure to define any field-specific jargon.

7.2.5 Thoughts on wording throughout the document

- Keep terms (and abbreviations) consistent.
- Avoid jargon, colloquialisms, and contractions
- Avoid unnecessary complexity.
- Avoid redundant wording.
- Use correct terms when using words with similar spellings (e.g., know when to use affect vs effect).
- Use tense correctly.
- Make sure that subject-verb agreement is correct throughout.
- Use punctuation correctly.
- Check for (and correct) misspellings and other typographical errors.

7.3 Additional Considerations

7.3.1 Using illustrations, data figures, and tables wisely

- Schematic illustrations
 - Are typically most appropriate in the Significance section
 - Indicate the overall goal and purpose of each aim
 - Describe a process
- Data figures
 - Can clarify complicated points
 - Can substantiate claims about preliminary data
 - Can show feasibility
 - Are helpful in breaking up the text
- Quantity and size of figures – don't overdo these in an application
 - There isn't much room to spare for these
 - Too many can be distracting
 - Simple figures tend to be more effective than large, multi-panel figures that require long legends
- Figure legends
 - Include an overall title (what the whole figure is about)

- For multi-panel figures, include panel titles that immediately distinguish each panel from the others (any necessary details should come after the panel title)
- Present information in legends in a logical order that is easy to follow (provide necessary context)
- Start with the information necessary to understand what figure represents (not significantly more)
- Be consistent with labeling, layout, and descriptions
- Include statistics, significance values, and symbol descriptions (always specify n values)

7.3.2 Make titles informative and interesting

- The purpose of a title is to capture reader's attention and highlight what is new.
- They should be informative, yet succinct.
 - Application title: What sets your study apart from others?
 - Figure legend title: What makes this figure different from the others in this application?
 - Figure panel titles: What makes this panel different from the other panels in this figure?
- It helps to include a verb that conveys the action, e.g.,
 - Good: SRC64 Regulates the Localization of a Tec-Family Kinase Required for Drosophila Ring Canal Growth
 - Not ideal: Cellular and Genetic Analysis of Wound Healing in Drosophila Larvae

7.3.3 Additional advice

- Stick to the guidelines for your funding agency and mechanism, and fulfill all the requirements.
 - Specifics of funding agency instructions—and the most recent version—always trump other advice (also, see **Chapter 5**).
 - Be sure to read instructions carefully and to double check them occasionally while writing, given current rapid changes in federal policy.
- Start early, get feedback, and act on feedback.
 - Have drafts proof-read by colleagues, both in and outside your field.
 - Revise your application based on feedback even if it generates more work.

8A. Feedback, Revision, and Resubmission – Interpreting Reviewer Feedback

8.1 How to Interpret and Use Reviewer Feedback

[Source: Scientific Editing and Research Communication Core ([SERCC](#)) Newsletter “[Strategies for Addressing Reviewer Feedback on a Research Proposal](#)”, May 2024]

After you submit a research proposal, you hope that it is funded. But if not—as is often the case—what should you do next? Below are some strategies for reviewing and interpreting reviewer feedback and how to use that information to determine your next steps.

8.1.1 Take time to process your feelings

- Immediately after initially reading reviewer critiques, it is normal to feel a variety of negative emotions.
- Taking a break from thinking about the critiques can help you approach them later with an open mind.
- Try not to take the rejection personally. Funding is extremely competitive, and rejection of the first submission is common. In fact, many grant writing strategists recommend factoring in time for a resubmission when planning a long-term funding strategy.
- A critical review may be an indication that an issue was not dealt with or explained clearly in the proposal. This is good because it can be fixed.

8.1.2 Analyze the feedback strategically

- First identify comments that should be prioritized in the resubmission. Here are a few approaches to consider.
 - Create a table of review criteria that lists both the strengths and weaknesses brought up by each reviewer.
 - Organize the strengths and weaknesses by topic to identify shared criticisms.
 - Identify ideas that received a poor score because of fixable flaws in the proposed approach. It is easier to address these than to come up with new ideas.
- Contact your Program Official (PO). They can help you interpret the reviewer comments, and if they were present during the review session, they may be able to provide insight regarding the focus of the discussion.
- Seek feedback from mentors and colleagues, especially those who have been funded by your target sponsor.
- If you feel that the review was flawed procedurally, you may contact the appropriate PO to determine whether an appeal is appropriate.

8.1.3 Revise your application strategically

- Try to respond to all reviewer comments, even if you don't have space to fully describe the changes you made to address these in a summary (e.g., the “Introduction” of a National Institutes of Health (NIH) application).

- If one reviewer's feedback conflicts, or is inconsistent, with that of the other reviewers, try to determine why and identify ways to remedy any confusion.
- If reviewers critique your expertise, consider collaborating with another principal investigator (PI).
- If reviewers don't find the project significant, consider targeting a different funding agency or institute/division whose mission better aligns with the goals of your project.

8.1.4 Do your homework

- Confirm that the sponsor accepts resubmissions and check their requirements (e.g., timeline, policies).
 - NIH requires resubmission within 37 months of the due date for the original proposal and allows only one resubmission (note: resubmission is not allowed for all funding opportunities, so check the Parent Announcements or Notice of Funding Opportunity for your application).
 - Some National Science Foundation (NSF) programs require a one-year wait before they will consider a resubmission.
 - The Department of Defense does not allow resubmissions.
- For some funding agencies, resubmissions have a higher likelihood of being funded than new applications.
 - E.g., R01 A1 applications *tend* to have higher success rates than A0 applications; however, this depends on the quality of the initial submission, revisions made to address reviewer concerns, and the competitiveness of other applications reviewed during that round.

8.1.5 Decide whether to resubmit your application or to submit a new one

- Consider resubmitting your application to the same sponsor if
 - your reviewers were enthusiastic about your idea,
 - your reviewers commented on fixable problems, and
 - you can readily address the reviewers' concerns.
- Consider submitting to a different sponsor (or institute/division) if reviewers were not enthusiastic about the ideas and
 - their expertise did not fit your topic,
 - they were not knowledgeable about the methods you proposed,
 - they did not understand the rationale for your proposal,
 - a considerable amount of time has passed, or
 - the science has changed substantially.
- Regardless of where you resubmit,
 - remember that reviewers rotate on and off review panels, so you have no guarantee who will evaluate your revised application; and
 - it is useful to address reviewer critiques from your initial submission, particularly if reviewers have access to these (as they do at NIH).

8.1.6 If you opt to resubmit, decide on the best time

- Try to submit as soon as possible after receiving reviews, but not until you can effectively address all of the reviewers' concerns.
- Strengthen the application as much as you can (you aren't limited to revising only the issues raised by the reviewers).
- Even if you start revising your application before you receive the reviewer comments (e.g., if you obtain new preliminary data), be sure to adequately address the reviewers' concerns once you do receive them.

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- Use the time between submitting your application and receiving your reviews to solidify your collaborations, obtain more preliminary data, and/or publish more papers.
- Confirm that the original funding solicitation hasn't expired, that your project is still a good fit, and that you still meet eligibility requirements.
- If the original solicitation has been updated, use the most recent version, even if it is different than what you used initially.
- If you are just above the pay line or on the list for possible selective pay or end-of-year funding, don't wait to see what happens. Revise as soon as you can and resubmit when ready.

8.1.7 Keep a positive perspective

Rejection is difficult. But remember, in the long run individuals who persevere through early setbacks systematically outperform those with narrow wins.

8.1.8 References

1. AtKisson, MS. [Handbook for Planning and Writing Successful Grant Proposals: Strategic Planning and Timelines](#).
2. [NIH Grants Policy Statement: 2.4.2 Appeals of Initial Scientific Review](#)
3. Bouvier Grant Group. [R01 Resubmission Success Rates](#).
4. NIH Data Book. [R01-Equivalent Grants: Success Rates, by Gender and Type of Application](#). 2024
5. Wang, Y., Jones, BF, Wang, D. [Early-career setbacks and future career impacts](#). Nat. Comm. 10(4331).

8.1.9 Additional resources

1. NIH: National Institute of Allergy and Infectious Disease (NIAID) [Revise and Resubmit an Application](#)
2. NIH [Frequently Asked Questions: Resubmissions of NIH Applications](#)

8B. Feedback, Revision, and Resubmission – Examples of Reviewer Feedback

8.2 Examples of Reviewer Feedback from Pre-2025 Review System

To provide a sense of what reviewers tend to consider important, below we reprint anonymized comments (positive and negative) that reviewers provided on F30 applications submitted to National Institutes of Health (NIH) by University of Iowa (UI) graduate students in the Medical Scientist Training Program (MSTP) prior to 2017. Note that the review criteria for those applications (those that were in effect at the time) are shown above the critiques and differ slightly from those currently in use at NIH. However, most of the information conveyed remains relevant.

This information was compiled from F30 Review Statements from National Cancer Institute (NCI); National Eye Institute (NEI); National Heart, Lung, and Blood Institute (NHLBI); National Institute on Aging (NIA); National Institute of Allergy and Infectious Disease (NIAID); National Institute of Environmental Health Sciences (NIEHS); National Institute of General Medical Sciences (NIGMS); and National Institute of Mental Health (NIMH) proposals.

[Information is provided Courtesy of the UI Medical Scientist Training Program; compiled by Ashley Hood]

8.2.1 Overall impact/merit

Reviewers will provide an overall impact score to reflect their assessment of the likelihood that the fellowship will enhance the candidate's potential for, and commitment to, an independent scientific research career in a health-related field, in consideration of the scored and additional review criteria.

As described in [Chapter 5A](#), the Overall Impact Score is based mainly on an assessment of scored review criteria, with some impact from additional review criteria. Note that this score is not an average of the scores for all of these criteria. Reviewers also address questions related to Additional Review Considerations, but these do not contribute to the Overall impact score directly.

8.2.2 Scored review criteria (pre-2025)

Fellowship Applicant

Questions reviewers were asked:

- *Are the applicant's academic record and research experience of high quality?*
- *Are the applicant's interests consistent with a career as a physician-scientist or other clinician-scientist?*
- *Does the applicant have the potential to develop into an independent and productive contributor to biomedical, behavioral or clinical science as a physician-scientist or other clinician-scientist?*
- *Does the applicant demonstrate commitment to a career as a physician-scientist or other clinician-scientist?*

Reviewer critiques of past submissions

- Strong publication record (1st author and several collaborations) [example: 0 publications by 3rd year is viewed poorly]
- Glowing letters of recommendation => motivation, intellect, research/writing abilities, independence, critical thinking, work ethic
- Demonstrate that a fellowship will have a high impact on the future career
- Clearly state career goals AND the role research will play in future career goals
- Limited PhD training potential when staying in same lab as MS (BUT publication record & preliminary data)
- Undergrad GPA
- Med School grades (Honors)
- MCAT scores and Step 1 scores (scores no longer required to be reported)
- Need details of exact technical/scientific/clinical learning experiences
- Emphasize completion of comprehensive exam

Sponsors, Collaborators, and Consultants

Questions reviewers were asked:

- *Are the sponsor(s)' research qualifications (including recent publications) and track record of mentoring individuals at a similar stage appropriate for the needs of the applicant?*
- *Is there evidence of a match between the research and clinical interests of the applicant and the sponsor(s)? Do the sponsor(s) demonstrate an understanding of the applicant's training needs as well as the ability and commitment to assist in meeting these needs?*
- *Is there evidence of adequate research funds to support the applicant's proposed research project and training for the duration of the research component of the fellowship?*
- *If a team of sponsors is proposed, is the team structure well justified for the mentored training plan, and are the roles of the individual members appropriate and clearly defined?*
- *Are the qualifications of any collaborator(s) and/or consultant(s), including their complementary expertise and previous experience in fostering the training of fellows, appropriate for the proposed project?*

Reviewer critiques of past submissions

- Mentoring record: MSTP students, postdocs, residents/fellows, PhD students [MSTP mentoring is best]
- Research Expertise: established track record; successful and productive
- Funding: if mentor grants ending soon, need co-sponsor with funding + scientific expertise
- Thesis Committee: who; how selected; how/when committee evaluates student; add blurb in "collaborators"
- Mentor publication record: steady, increasing/decreasing rate? Junior faculty should have a number of pubs without postdoctoral mentor
- Good match between mentor expertise and applicant career goals
- Highly productive junior investigator publishing in top-tier journals
- Productive junior faculty sponsor, with established (science + training), well-funded senior co-sponsor
- Evidence that the sponsor interacts "intensely" with the candidate in forming excellent research plan
- Added co-sponsor or consultant to provide specific experimental expertise (include biosketch, letter)
- Need absolute clarity of independent role and time sponsor(s) will devote to mentoring applicant
- List others currently in the lab => staff; scientists, postdocs [those who can lend hands-on, near-peer expertise]
- Include any "group" lab meetings that involve additional faculty
- All biosketches should reference applicant (or at least mentoring expertise) in Personal Statement
- Consider including scientific experts who can advise on specific cell lines to use

Research Training Plan

Questions reviewers were asked:

- *Is the proposed research project of high scientific quality, and is it well integrated with the proposed research training plan?*
- *Based on the sponsor's description of his/her active research program, is the applicant's proposed research project sufficiently distinct from the sponsor's funded research for the applicant's career stage?*
- *Is the research project consistent with the applicant's stage of research development?*
- *Is the training plan well-reasoned, and likely to provide an effective, integrated research and clinical training experience and [to] ease the transitions between the phases of the dual-degree program?*
- *Is the proposed time frame feasible to accomplish the proposed research and clinical training?*

Reviewer critiques of past submissions

- Well-written and organized
- Clear justification for the proposed experiments
- Innovative and clinically relevant
- Consider potential problems in a thoughtful way => provide expected results and alternatives
- Training potential => will experiments provide solid foundation in (translational) research?
- If including animal breeding, consider feasibility within scope of F30
- Note: Preliminary data is NOT required, but if included, clarify what (if any) was YOUR work
- Preliminary data to show feasibility => of experiment, of model, OR of collaboration (group papers, etc)
- Evidence of applicant critically reviewing preliminary data
- Concerns about over-ambitious plans can be alleviated by proof of high productivity (prelim data; papers)
- NEW JANUARY 2016: animal studies must consider sex as a biological variable in research plan
- Clear analysis of mathematics to determine statistical power and animal study group size
- Plan: techniques, intellectual development, scientific independence
- POSITIVE – grantsmanship
 - Proposal based on applicant's prior work
 - Detailed expected results and alternatives show thought and care in designing experiments
 - Included big picture conclusions
- NEGATIVE – grantsmanship
 - Small font in figures hindered evaluation of data
 - Descriptive aims or hypotheses; lacks mechanistic insight
 - Conclusions from preliminary data are over-stated
 - Lack of details on how results will be interpreted for significance
 - Concern the Aims were interdependent ("sequential technical hurdles")
 - Concern the Aims were disconnected
 - Overall plan is overambitious; many studies are exploratory
 - Limited alternative strategies and consideration of pitfalls
- Consider experimental critiques when considering resubmission [did everything else score well?]

Training Potential

Questions reviewers were asked:

- *Are the proposed research project and research and clinical training plan likely to provide the applicant with an integrated perspective and appropriate skills for a physician-scientist or other clinician-scientist?*
- *Does the training plan take advantage of the applicant's strengths and address gaps in needed skills? Does the training plan document a clear need for, and value of, the proposed training?*

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- *If applicable to the dual-degree program, are appropriate opportunities for electives, early and longitudinal clinical experiences, or other enhanced clinical training available to the applicant? Are appropriate opportunities available to ease the transition to clinical clerkships and for research electives during clinical training?*
- *Does the proposed integrated research and clinical training have the potential to serve as a sound foundation that will clearly enhance the applicant's ability to develop into a productive, independent physician-scientist or other clinician-scientist?*

Reviewer critiques of past submissions

- Quality of applicant and attention to detail in the training plan suggest high potential
- Weaknesses (experimental) in the Research Training Plan can dampen enthusiasm for training potential
- Approaches are sophisticated and take advantage of latest advances
- Training plan is uniquely tailored to the applicant => aligned with career goals; integrate MD and PhD
- Emphasize areas of training programs over which applicant has control
- Build on applicant's strengths and weaknesses
- Is applicant exposed to new research skills in addition to career development?
- Attention to on-going career development and transition back to clinic
- Learn diverse scientific techniques/skills, even via intra/inter-institutional collaborations
- Clinical Connections helps students maintain clinical exposure during graduate phase
- 8-weeks of clerkships before graduate phase provide important clinical component to research training
- State specific techniques to be learned in the Goals section
- Applicant should receive reasonable personal attention from the mentor
- Include time for meetings, seminars, writing in all years (even final medical year)
- Include information on training of a specific necessary technique (molecular biology? biostatistics? physics?)
- MD/PhD training potential can be strengthened by emphasizing how research can yield clinical relevance

Institutional Environment & Commitment to Training

Questions reviewers were asked:

- *Are the research facilities, resources (e.g., equipment, laboratory space, computer time, subject populations, clinical training settings) and training opportunities (e.g. seminars, workshops, professional development opportunities) adequate and appropriate?*
- *Is the institutional environment for the applicant's scientific and clinical development of high quality? Are the facilities and resources appropriate to provide exposure to a research-oriented, clinical environment?*
- *Does the environment include individuals with similar training who will serve as role models for the applicant?*
- *Given the integrated nature of the training program, will appropriate advising be available to the applicant as he/she transitions between the research and clinical components of the integrated training program and to the next career stage?*
- *Is there appropriate institutional commitment to fostering the applicant's integrated training as a physician-scientist or other clinician-scientist? Does this commitment extend to support the applicant's research and training, if needed, for the duration of the proposed award?*

Reviewer critiques of past submissions

- Ulowa has a very strong environment
- Clear institutional commitment to MD/PhD trainees
- Very successful MSTP and other T32s

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- MSTP is thorough and well-designed
- Good integration of medical and graduate training, with protected time for research
- Clear commitment of sponsor to applicant and project
- Many clinical and scientific opportunities => are there core facilities related to the proposal?
- Clearly identify opportunities for networking, training, and mentorship
- Workshops on “how to interview”
- Include / mention programs that support professional development of MSTP (or other grad programs)
- Of 198 students, 138 completed training. 72% (of 138) careers at academic centers

8.2.3 Additional review criteria (pre-2025)

These items do not receive individual scores but do influence overall impact score. [Acceptable/Unacceptable]

Protections for Human Subjects

The Committee will evaluate:

- **[For a] Study NOT exempt under 45 Code of Federal Regulations (CFR) Part 46** – The justification for involvement of human subjects and the proposed protections from research risk relating to their participation according to: (1) risk to subjects, (2) adequacy of protection against risks, (3) potential benefits to the subjects and others, (4) importance of the knowledge to be gained, and (5) data and safety monitoring for clinical trials.
- **[For a] Study exempt under 45 CFR Part 46** – (1) The justification for the exemption, (2) human subjects involvement and characteristics, and (3) sources of materials.

Reviewer critiques of past submissions

- None noted

Inclusion of Women, Minorities, and Children

The Committee will evaluate:

- **When the proposed project involves human subjects and/or NIH-defined clinical research** – the proposed plans for the inclusion (or exclusion) of individuals on the basis of sex/gender, race, and ethnicity, as well as the inclusion (or exclusion) of children to determine if it is justified in terms of the scientific goals and research strategy proposed.

Reviewer critiques of past submissions

- None noted

Vertebrate Animals

The Committee will evaluate:

- The involvement of live vertebrate animals as part of the scientific assessment according to the following criteria: (1) description of proposed procedures involving animals, including species, strains, ages, sex, and total number to be used; (2) justifications for the use of animals versus alternative models and for the appropriateness of the species proposed; (3) interventions to minimize discomfort, distress, pain and injury; and (4) justification for euthanasia method if NOT consistent with the American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals.
- The use of chimpanzees as they would any other application proposing the use of vertebrate animals.

Reviewer critiques of past submissions

- Clearly and mathematically justify number of animals to be used

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Biohazards

Reviewers will assess:

- *Whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.*

Reviewer Critiques of Past Submissions

- Consideration of virus use

Resubmissions

The Committee will evaluate:

- *The application as now presented, taking into consideration the responses to comments from the previous scientific review group and changes made to the project.*

Reviewer critiques of past submissions

- Notice NOT-OD-14-074
- Introduction
- Address every criticism
- POSITIVE
 - “highly responsive resubmission”
 - new preliminary data => speaks to feasibility and to productivity between reviews
 - addition of consultants for research skills and/or career guidance

8.2.4 Former additional review considerations (pre-2025)

These items do not receive individual scores and do not influence overall impact score.

[Acceptable/Unacceptable] Any deficiencies will need to be addressed before funding is issued.

Training in the Responsible Conduct of Research

The reviewers will evaluate:

- *All applications for support under this Funding Opportunity Announcement (FOA) must include a plan to fulfill NIH requirements for Instruction in the Responsible Conduct of Research (RCR). Taking into account the level of experience of the applicant, including any prior instruction or participation in RCR as appropriate for the applicant’s career stage, the reviewers will evaluate the adequacy of the proposed RCR training in relation to the following five required components: 1) Format - the required format of instruction, i.e., face-to-face lectures, coursework, and/or real-time discussion groups (a plan with only on-line instruction is not acceptable); 2) Subject Matter - the breadth of subject matter, e.g., conflict of interest, authorship, data management, human subjects and animal use, laboratory safety, research misconduct, research ethics; 3) Faculty Participation - the role of the sponsor(s) and other faculty involvement in the fellow’s instruction; 4) Duration of Instruction - the number of contact hours of instruction (at least eight contact hours are required); and 5) Frequency of Instruction – instruction must occur during each career stage and at least once every four years. Plans and past record will be rated as ACCEPTABLE or UNACCEPTABLE, and the summary statement will provide the consensus of the review committee. See also: NOT-OD-10-019.*

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Reviewer critiques of past submissions

- Acceptable
- Unacceptable: “RCR completed and no additional formal training pursued during proposed support”
 - Refresh courses after 4 years; has been addressed in RCR document from MSTP

Select Agent Research

The reviewers will assess:

- *The information provided in this section of the application, including (1) the Select Agent(s) to be used in the proposed research, (2) the registration status of all entities where Select Agent(s) will be used, (3) the procedures that will be used to monitor possession use and transfer of Select Agent(s), and (4) plans for appropriate biosafety, biocontainment, and security of the Select Agent(s).*

Reviewer critiques of past submissions

- None noted

Resource Sharing Plans

The reviewers will comment on:

- *Whether the following Resource Sharing Plans, or the rationale for not sharing the following types of resources, are reasonable: (1) Data Sharing Plan; (2) Sharing Model Organisms; and (3) Genomic Data Sharing Plan.*

Reviewer critiques of past submissions

- None noted

Budget and Period of Support

The reviewers will consider:

- *Whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed research.*

Reviewer critiques of past submissions

- None noted

9. Writing Support and Peer Engagement

9.1 Courses Offered by Specific Programs and Departments

Several Carver College of Medicine (CCOM) courses integrate a scientific writing component, and these are described in **Table 9.1**. These courses are supplemented by offerings from a variety of offices and writing centers in the CCOM and other University of Iowa (UI) colleges, as described in **Sections 9.2–9.4**.

Table 9.1 Writing-intensive courses in specific topic areas for CCOM graduate students

Program	Course	Nature of Grant Writing Assignment
Biochemistry and Molecular Biology	BMB:5282:0A02 Biochemistry and Molecular Biology Seminar	Students develop thesis proposal with research advisor
Cancer Biology	CBIO:7500 Crafting a Scientific Proposal	Students develop a full proposal
Cell and Developmental Biology	ACB:6250 Critical Thinking Science Writing/Presentation	Students develop a Specific Aims page
Free Radical and Radiation Biology	FRRB:5000 Radiation Biology	Students develop an NIH-style grant application
Genetics	GENE:6150:0001 Genetic Analysis of Biological Systems (GABS)	Students develop a fellowship application
Immunology	IMMU:6241 Writing a Scientific Proposal	Students prepare a scientific proposal
Medical Scientist Training Program	MSTP:8514 Grant Writing Basics	Students develop a Specific Aims page, analyze examples of the Research Strategy and Training Plan, and begin to organize their ideas for the latter
Microbiology	MICR:6265 Introduction to Grant Writing	Students write an R21-style proposal
Neuroscience	BIOL:6188 Seminar: Writing in Natural Sciences (SP)	Writing projects include thesis project proposals, thesis chapters, reviews and data-driven articles, and competitive grant applications
Pharmacology	PCOL:6203 Pharmacology for Graduate Students PCOL:6250 Advanced Problem Solving	A component of the course includes an off-topic mock comprehensive exam proposal and defense Students write a Specific Aims page and work in groups to prepare a full F31-style fellowship proposal

Information gathered by the Office of Graduate and Postdoctoral Studies, June 11, 2025.

9.2 Scientific Editing and Research Communication Core

The Scientific Editing and Research Communication Core (SERCC) within the Carver College of Medicine works one-on-one with both faculty and trainees to improve the success of their writing projects—helping to highlight their scientific message. The [SERCC website](#) also contains many resources to help individuals improve their grant proposals and scientific writing skills in general. These include presentations, templates, articles, and other resources. Those specific to graduate students and National Institutes of Health (NIH) Fellowship series grants are available under the resources tab, and several are duplicated in this manual.

If authors request assistance with their writing, they can select from various levels of input, including: mechanics; style, clarity, and presentation; and the science. To schedule an editing project, fill out the [Schedule and Editing Project form](#) on the SERCC website, and an editor will get back to you. This is a paid service, but may be subsidized by your department (see [SERCC pricing](#)). Contacting SERCC well in advance of your project deadline is

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recommended. For example, for a grant or fellowship, the Specific Aims page is ideally submitted 1–2 months before the grant/fellowship deadline.

SERCC editors additionally offer virtual Open Writing Sessions and Ask the Editor sessions, at which graduate students and others can get personalized input on their writing.

9.2.1 Open Writing Sessions

Dedicated time, with the support of a casual accountability group, for students and postdocs to work on their writing, with a scientific editor available to answer questions. These sessions are held twice monthly, and participation is virtual on a drop-in basis. See the [SERCC events webpage](#) for more details.

9.2.2 Ask the Editor

Virtual office hours that any trainee, staff member, or faculty may attend to discuss their latest manuscript, grant, or other scientific document with a scientific editor, or simply to ask about SERCC services. These sessions are held twice monthly. See the [SERCC events webpage](#) for more details.

9.3 Graduate Success Center (Graduate College)

The Graduate College Grad Success Center provides support for students pursuing internal and external funding through grants and fellowships. To schedule a consultation with a member of the Grad Success team, visit the [Grad Success External Fellowships and Grant Support](#) page. A consultant can help you identify grant opportunities and develop your writing through individual support.

9.4 Writing Centers in Various UI Colleges

The UI hosts at least six writing centers that serve graduate students within the Carver College of Medicine, College of Law, College of Engineering, College of Liberal Arts and Sciences, and Tippie College of Business. These are excellent supplements to the services that the offices described above provide.

Here we provide an overview of each of these writing centers, including services provided, how they are staffed, how tutors are trained and funded, performance metrics, and some background about each writing center's history. This information has been compiled from interviews, emails, and writing center websites.

Table 9.2 Overview of writing centers at the University of Iowa that serve the students at the graduate level

	Carver College of Medicine	College of Liberal Arts and Sciences	College of Engineering	College of Law	Tippie College of Business	College of Education
	Writing and Humanities Program	The Writing Center	Hanson Center for Communication	Iowa Law Writing Center	Frank Business Communication Center	College of Education Writing Resource
Grad students	Yes (*MD only)	Yes	Yes	Yes	Yes	Yes
Type of input provided						
Feedback	Yes	Yes	Yes	Yes	Yes	Yes
Workshops		Yes	Yes	Yes		
Writing Sessions		Yes	Yes	Yes		Yes
Courses	Yes	Yes		Yes	Yes	

Input provided by						
Faculty/staff	Yes	Yes	Yes	Yes	Yes	Yes
Peer tutors		Yes	Yes	Yes	Yes	Yes

** The Writing and Humanities Program supports medical students in the CCOM
Information compiled by Heather Widmayer, 2025.*

9.4.1 Writing and Humanities Program (Carver College of Medicine)

The [Writing and Humanities Program](#) at the Carver College of Medicine offers elective courses as well as a Humanities Distinction Track to empower future physicians to find their voice, craft compelling narratives, and cultivate a deeper connection to the art of healing. The program also offers one-on-one writing consultations to support students in refining a wide range of work, including scholarship applications, residency personal statements, CVs, research papers, abstracts, patient notes, presentations, correspondence, letters of recommendation, and creative writing projects. For more about these services and online resources, contact: camille-socarras@uiowa.edu.

9.4.2 Writing Center (College of Liberal Arts and Sciences)

The College of Liberal Arts and Sciences (CLAS) provides a comprehensive set of services, offering support for any stage of the writing process through the Writing Center. This center is hosted by the Department of Rhetoric, in the English Philosophy Building (EPB). Services are free and available to all UI students, faculty, and staff, and range from designated writing time with attendance accountability to one-on-one assistance. For more information or to register for any of these programs, visit the [CLAS Writing Center website](#). You can also find general writing resources on topics such as punctuation, grammar, and citing sources on their [Writing Resources page](#).

9.4.3 Hanson Center for Communication (College of Engineering)

The Hanson Center for Communication (HCC) is a comprehensive resource for students in the College of Engineering to develop communication skills, specializing in technical communication. The HCC provides one-on-one and group tutoring sessions for writing and presentation skills. Workshops and groups are held in 4650 Seamans Center, and individual tutoring sessions are held in 2228 Seamans Center in the Engineering Commons. To schedule a 30-minute appointment (online or in person) or to join a weekly, tutor-guided writing group, visit the [HCC website](#).

9.4.4 Iowa Law Writing Center (College of Law)

The Iowa Law Writing Center develops legal writing and analytical thinking skills to prepare law students for practice. It supports students in three important ways. First, it serves as an extension of the first-year Legal Analysis, Writing, and Research classroom; highly trained tutors provide feedback to students on their first-year writing assignments in a supportive environment. Second, the Writing Center serves students beyond the first year by providing feedback on coursework, journal articles, writing samples, and more. Third, the Center provides academic success services for all students—offering individual mentoring services and programs on law school success skills, such as preparing for class, preparing for exams, and taking exams. To learn more, visit the [College of Law Legal Writing page](#).

9.4.5 Frank Business Communication Center (Tippie College of Business)

The [Frank Business Communication Center](#) is the Big 10's first business-specific writing and communication center. The hub for all Tippie College of Business communication initiatives, it supports students and faculty in reaching their communication objectives. Transforming raw data into insight differentiates the Tippie graduate. Let the Frank Center help you learn how to communicate that insight.

Support includes: Tutoring in writing, visual design, and presentations for all Tippie class assignments as well as resume review, cover letters, and interview preparation; partnering with Tippie academic departments to develop departmental communication plans and support communication initiatives; and coaching Tippie student teams for case competitions, such as the Eller Collegiate Ethics Case Competition.

9.4.6 College of Education Writing Resource (College of Education)

A fresh pair of eyes is a powerful tool during the drafting process. The [College of Education Writing Resource](#) provides support at every stage of your writing process, from conceptualizing ideas to polishing and publishing your work. Support includes: assistance with a variety of types of graduate student writing projects, including abstracts, course assignments, CVs, dissertation proposals, PowerPoint slides, presentations, and teaching materials; “Write-on-Site” Sessions for focused writing time, with the option to consult with Writing Resources staff (offered periodically, e.g., June 17 and August 13); workshops on writing-related topics, such as writing literature reviews (typically 2–4 workshops per semester); and both asynchronous review of documents as well as online appointments for video chat.

9.5 Use of Artificial Intelligence (AI) in Scientific Writing

AI may seem like a great time saver for preparing a research proposal. However, whether it will provide you with novel ideas worthy of funding is uncertain, and its propensity to generate incorrect information can create a lot of extra work in terms of fact checking. Notably, funding agency policies are evolving—and each has its own level of restrictions. Some merely request transparency about its use, whereas others are potentially ready to evaluate the submission for misconduct. Therefore, if you do use AI, be sure you know what the relevant policy is, and precisely what kind of use is and is not considered acceptable.

9.5.1 An example: [NIH policy](#)

- NIH will not consider applications that are either substantially developed by AI, or contain sections substantially developed by AI, to be original ideas of applicants. If the detection of AI is identified post award, NIH may refer the matter to the Office of Research Integrity to determine whether there is research misconduct while simultaneously taking [enforcement actions](#) including but not limited to disallowing costs, withholding future awards, wholly or in part suspending the grant, and possible termination.
- NIH will only accept six new, renewal, resubmission, or revision applications from an individual Principal Investigator/Program Director or Multiple Principal Investigator for all council rounds in a calendar year. This policy applies to all activity codes except T activity codes and R13 Conference Grant Applications. Based on recent data, this limit will affect a relatively small number of Principal Investigators while enabling the NIH to maintain consistently high-quality grant application review and appropriately steward taxpayer dollars.

9.5.2 An example: National Science Foundation (NSF) policy

- NSF reviewers are prohibited from uploading any content from proposals, review information and related records to non-approved generative AI tools.
- Proposers are encouraged to indicate in the project description the extent to which, if any, generative AI technology was used and how it was used to develop their proposal.

9.5.3 Other points to consider in deciding whether and how to use AI in writing grants

If you use AI to develop ideas for a proposal

- What are the chances that it will generate novel ideas, considering that it learns from what's already been written about?
- Will you be making your ideas public by feeding in specifics of your research direction?
- Will you learn more than you would by discussing your ideas with trusted colleagues?

If you use AI to ensure that your literature sources are complete

- Given that AI is known to invent references, how much work will it be to check all those sources for accuracy?
- How on-target is the output likely to be?

If you use AI to improve your writing beyond a grammar check

- Will it be flagged as AI-generated?
- Will it be flagged as plagiarized? (AI output can include text taken verbatim from published materials.)
- Will it help you tell your story in a logical and persuasive way?
- Will you be losing out on a key aspect of the training you need to succeed in science in the long run?

10. Reference Materials and Appendices

10.1 Contact Information for Questions, Clarifications, and Examples

COM Office of Research

Email: COM-research@uiowa.edu

Phone: 319-335-3500

Office of Graduate and Postdoctoral Studies (OGPS)

Email: biomedgrad-postdoc@uiowa.edu

Phone: 319-467-1747

Scientific Editing and Research Communication Core (SERCC)

Email: COM-ScientificEditing@uiowa.edu

Location: 451 Newton Road, 130 Medicine Administration Building, Iowa City, IA 52242

10.2 Glossary of Terms and Abbreviations

- **ACB** Anatomy and Cell Biology
- **AHA** American Heart Association
- **AI** Artificial Intelligence
- **AOR** Authorized Organizational Representative
- **AVMA** American Veterinary Medical Association
- **BIOL** Biology
- **biosketch** biographical sketch
- **BMB** Biochemistry and Molecular Biology
- **CBIO** Cancer Biology
- **CCOM** Carver College of Medicine
- **CFF** Cystic Fibrosis Foundation
- **CFR** Code of Federal Regulations
- **CLAS** College of Liberal Arts and Sciences
- **COM** College of Medicine
- **CV** Curriculum Vitae
- **DOD** Department of Defense
- **DOM** Department of Management
- **DSP** Division of Sponsored Programs
- **EHS** Environmental Health and Safety
- **EPB** English Philosophy Building
- **FIP** Fellowship Incentive Program
- **FOA** Funding Opportunity Announcement
- **FRRB** Free Radical and Radiation Biology
- **GENE** Genetics
- **GRAPES** Graduate and Postdoctoral Extramural Support
- **GRFP** Graduate Research Fellowship Program

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- **HCC** Hanson Center for Communication
- **HSO** Human Subjects Office
- **IACUC** Institutional Animal Care and Use Committee
- **IMMU** Immunology
- **IRB** Institutional Review Board
- **MDA** Muscular Dystrophy Association
- **MICR** Microbiology
- **MSTP** Medical Scientist Training Program
- **NCI** National Cancer Institute
- **NEI** National Eye Institute
- **NHLBI** National Heart, Lung, and Blood Institute
- **NIA** National Institute on Aging
- **NIAID** National Institute of Allergy and Infectious Disease
- **NIEHS** National Institute of Environmental Health Sciences
- **NIGMS** National Institute of General Medical Sciences
- **NIH** National Institutes of Health
- **NIH F-series** Fellowship Grants
- **NIH K-series** Career Development Awards
- **NIH R-series** Research Grants
- **NIH T-series** Training Grants
- **NIMH** National Institute of Mental Health
- **NOFO** Notice of Funding Opportunity
- **NOSI** Notice of Special Interest
- **NRSA** National Research Service Award
- **NSF** National Science Foundation
- **OAR** Office of Animal Resources
- **OGPS** Office of Graduate and Postdoctoral Studies
- **OVPR** Office of the Vice President for Research
- **PA** Program Announcement
- **PCOL** Pharmacology
- **PD** Program Director
- **PDF** Portable Document Format
- **PHS** Public Health Service
- **PI** Principal/Primary Investigator
- **PO** Program Official
- **RASO** Research Administration Support Office
- **RCR** Responsible Conduct of Research
- **RDO** Research Development Office
- **RISO** Research Integrity and Security Office
- **SERCC** Scientific Editing and Research Communication Core
- **SD** Sponsor's Deadline
- **STEM** Science, Technology, Engineering, Mathematics
- **UI** University of Iowa

10.3 Links to Resources

Per chapter, in order of appearance

10.3.1 Chapter 1 – Overview

- UI Policy Manual
 - <https://policy.uiowa.edu/>
- UI Policy Manual Section V, Chapter 5
 - <https://policy.uiowa.edu/administrative-financial-and-facilities-policies/gifts-grants-and-contracts>
- Division of Sponsored Programs (DSP)
 - <https://dsp.research.uiowa.edu/>
- Human Subjects Office (HSO)
 - <https://hso.research.uiowa.edu/>
- Office of Animal Resources (OAR)
 - <https://animal.research.uiowa.edu/office-animal-resources-oar>
- Environmental Health and Safety (EHS)
 - <https://ehs.research.uiowa.edu/>
- Research Integrity and Security Office (RISO)
 - <https://research.uiowa.edu/research-integrity-and-security-office>
- SERCC newsletter article “The Advantages of Contacting Your NIH Program Official”
 - https://sercc.medicine.uiowa.edu/sites/sercc.medicine.uiowa.edu/files/2023-12/220426_Newsletter_SERCC.pdf
- Office of Graduate and Postdoctoral Studies Additional Incentives webpage
 - <https://ogps.medicine.uiowa.edu/more-incentives>
- FIP webpage
 - <https://grad.uiowa.edu/grad-success/fellowship-incentive-program>

10.3.2 Chapter 2 – Offices That Can Help With a Fellowship Submission

- Research Development Office (RDO)
 - <https://research.uiowa.edu/research-development-office>
- Division of Sponsored Programs (DSP)
 - <https://dsp.research.uiowa.edu/>
- Scientific Editing and Research Communication Core (SERCC)
 - <https://sercc.medicine.uiowa.edu/>
- SERCC resources tab
 - <https://sercc.medicine.uiowa.edu/resources>
- Schedule an Editing Project form
 - <https://sercc.medicine.uiowa.edu/form/schedule-an-editing-project>
- SERCC pricing
 - <https://sercc.medicine.uiowa.edu/pricing>
- Graduate College Grad Success Center
 - <https://grad.uiowa.edu/grad-success>
- Grad Success External Fellowships and Grant Support page
 - <https://grad.uiowa.edu/grad-success/external-fellowships-and-grant-support>
- Proposal Resource Library

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- <https://iowa.sharepoint.com/sites/vpr/GrantWritingResources/Forms/AllItems.aspx>
- Graduate Student Research page
 - <https://research.uiowa.edu/graduate-student-research>

10.3.3 Chapter 3A – Finding the Right Opportunity – Funders and Searches

- NIH Standard Due Dates
 - <https://grants.nih.gov/grants-process/submit/submission-policies/standard-due-dates>
- GRFP webpage
 - <https://www.nsf.gov/funding/opportunities/grfp-nsf-graduate-research-fellowship-program>
- PIVOT
 - https://pivot.proquest.com/funding_main
- AHA website
 - <https://professional.heart.org/en/research-programs/aha-funding-opportunities/predoctoral-fellowship>
- Research Development Office's (RDO's) PIVOT webpage
 - <https://research.uiowa.edu/research-development-office/researcher-toolkit/pivot>
- grants.gov
 - <https://www.grants.gov/>
- UI Graduate College page of resources for graduate students seeking funding opportunities
 - <https://grad.uiowa.edu/grad-success/finding-funding>
- RDO within the Office of the Vice President for Research (OVPR) resource library
 - <https://iowa.sharepoint.com/sites/vpr/GrantWritingResources/Forms/AllItems.aspx>

10.3.4 Chapter 3B – Finding the Right Opportunity – Sponsor Due Dates

10.3.5 Chapter 4 – Timeline and Scope of the Grant Writing Process

- Overview of Content in an NIH Fellowship Grant Submission
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-4>
- NIH Instructions
 - <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/fellowship-forms-i.pdf>
- Notice of Funding Opportunities (NOFO)
 - <https://grants.nih.gov/funding/funding-categories/research-training-and-career-development/individual-fellowships>
- Notices of Special Interest (NOSI)
 - <https://www.nigms.nih.gov/grants-and-funding/funding-search?tab=nosi>
- Recommended Timeline for Fellowship Proposals
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-3>
- UI Research Development Office (RDO) grant examples
 - <https://iowa.sharepoint.com/sites/vpr/GrantWritingResources/Forms/AllItems.aspx>
- Open Grants
 - <https://www.ogrants.org/grants-03-programs>
- NIH decision tool

- <https://grants.nih.gov/policy-and-compliance/policy-topics/human-subjects/hs-decision>
- Human Subjects Office (HSO) website
 - <https://hso.research.uiowa.edu/>
- Institutional Animal Use and Care Committee (IACUC)
 - <https://animal.research.uiowa.edu/office-institutional-animal-care-and-use-committee>
- SERCC website resources page
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-1>
- Template for writing the Research Training Project Specific Aims and Strategy
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Recommended Timeline for Fellowship Proposals
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-3>

10.3.6 Chapter 5A – NIH Fellowship Application – Instructions and Review

- individual fellowships programs
 - <https://grants.nih.gov/funding/funding-categories/research-training-and-career-development/individual-fellowships>
- Individual Predoctoral National Research Service Award (NRSA) for MD/PhD Fellowships
 - <https://grants.nih.gov/funding/activity-codes/F30>
- Predoctoral Individual National Research Service Award
 - <https://grants.nih.gov/funding/activity-codes/F31>
- Predoctoral to Postdoctoral Fellow Transition Award
 - <https://grants.nih.gov/funding/activity-codes/F99>
- Ruth L. Kirschstein Postdoctoral Individual National Research Service Award
 - <https://grants.nih.gov/funding/activity-codes/F32>
- Ruth L. Kirschstein National Research Service Awards for Senior Fellows
 - [Ruth L. Kirschstein National Research Service Awards for Senior Fellows](#)
- budget notice
 - <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-26-044.html>
- F30 review criteria
 - https://grants.nih.gov/grants/guide/pa-files/PA-25-426.html#_Section%20V.%20Application%20Review%20Information
- F31 review criteria
 - https://grants.nih.gov/grants/guide/pa-files/PA-25-422.html#_Section%20V.%20Application%20Review%20Information
- F32 review criteria
 - https://grants.nih.gov/grants/guide/pa-files/PA-25-423.html#_Section%20V.%20Application%20Review%20Information
- Changes to the Fellowship Review Criteria
 - <https://grants.nih.gov/policy-and-compliance/policy-topics/peer-review/revisions-nih-fellowship-application-review-process/changes-to-fellowship-review-criteria>
- Guidelines for the Review of Human Subjects
 - https://grants.nih.gov/grants/guide/url_redirect.php?id=11175
- Guidelines for the Review of Inclusion in Clinical Research
 - https://grants.nih.gov/grants/guide/url_redirect.php?id=11174
- Worksheet for Review of the Vertebrate Animals Section
 - https://grants.nih.gov/grants/guide/url_redirect.php?id=11150
- NOT-OD-10-019

- <http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-10-019.html>
- NOT-OD-22-055
 - <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-22-055.html>
- Sharing Model Organisms
 - <https://sharing.nih.gov/other-sharing-policies/model-organism-sharing-policy#policy-overview>

10.3.7 Chapter 5B – NIH Fellowship Application – Writing a Strong Application

- SciENCv
 - <https://www.ncbi.nlm.nih.gov/sciencv/>
- Research Training Project Specific Aims and Strategy Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Fellowship Instructions for NIH and Other Public Health Service (PHS) Agencies
 - <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/fellowship-forms-i.pdf>
- General Instructions for NIH and Other PHS Agencies
 - <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/general-forms-i.pdf>
- What's in an Aims Page Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Addressing Rigor and Reproducibility in the Research Strategy Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- SERCC Presentations
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Explore NIH Grant Opportunities
 - <https://grants.nih.gov/funding/explore-nih-opportunities>
- Candidate's Goals, Preparedness, and Potential Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Training Activities and Timeline Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Sponsor's Commitment Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- NIH Biosketch Template for Fellowships
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Considerations for the Research Training Plan Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Biosketch Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Obtaining Letters of Recommendation and Support Lectures
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Fellowship Instructions for NIH and Other PHS Agencies
 - <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/fellowship-forms-i.pdf>
- Facilities and Resources Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>

10.3.8 Chapter 5C – NIH Fellowship Application – Using the NIH Instructions

- Fellowship Instructions for National Institutes of Health (NIH) and Other Public Health Service (PHS) Agencies
 - <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/fellowship-forms-i.pdf>
- Fellowship Instructions for NIH and Other PHS Agencies
 - <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/fellowship-forms-i.pdf>
- Facilities and Resources Template
 - [Facilities and Resources Template](#)
- Templates for preparing content for Biosketches
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Preparing your Biographical Sketch for NIH
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Candidate's Goals, Preparedness, and Potential Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Training Activities and Timeline Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Considerations for the Research Training Plan Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Research Training Project Specific Aims and Strategy Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- What's in an Aims Page Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Research Training Project Specific Aims and Strategy Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- Addressing Rigor and Reproducibility in the Research Strategy Lecture
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>
- Sponsor(s) Commitment Template
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- NIH web page How to Apply – Application Guide
 - <https://grants.nih.gov/grants-process/write-application/how-to-apply-application-guide>
- NIH Webinar: Focus on Fellowships Part 1. Introduction to NIH Fellowship Funding Opportunities
 - <https://www.youtube.com/watch?v=WmtcXOnxiKE>
- NIH Webinar: Focus on Fellowships Part 2. Information for Candidates
 - <https://www.youtube.com/watch?v=VybrDIQ1p4U&t=123s>
- NIH Webinar: Focus on Fellowships Part 3. Fellowship Application Review
 - <https://www.youtube.com/watch?v=BPYYSwrdulE>
- NIH Webinar: Focus on Fellowships Part 4. Information for Sponsors
 - <https://www.youtube.com/watch?v=ifKDA7VX8Zo>

10.3.9 Chapter 6 – Adapting Information from NIH and NSF Templates for Other Funding Opportunities

- SERCC website
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- NIH Research Grant (R) Application Template, Specific Aims and Research Strategy
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>
- SERCC's NIH biosketch instructions
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-0>

10.3.10 Chapter 7 – Achieving Clarity in Scientific Writing

- “The science of scientific writing”
 - <https://www.americanscientist.org/blog/the-long-view/the-science-of-scientific-writing>
- Achieving Clarity in Scientific Writing
 - <https://sercc.medicine.uiowa.edu/resources/writing-grants#accordion-item-1116-2>

10.3.11 Chapter 8A – Feedback, Revision, and Resubmission – Interpreting Reviewer Feedback

- SERCC Newsletter “Strategies for Addressing Reviewer Feedback on a Research Proposal”
 - https://sercc.medicine.uiowa.edu/sites/sercc.medicine.uiowa.edu/files/2024-05/240528_Newsletter_Strategies%20for%20Addressing%20Reviewer%20Feedback.pdf
- Handbook for Planning and Writing Successful Grant Proposals: Strategic Planning and Timelines
 - <https://www.atkissontraininggroup.com/handbook>
- NIH Grants Policy Statement: 2.4.2 Appeals of Initial Scientific Review
 - https://grants.nih.gov/grants/policy/nihgps/html5/section_2/2.4.2_appeals_of_initial_scientific_review.htm
- R01 Resubmission Success Rates
 - <https://bouvergrant.com/r01-resubmission-success-rates/>
- R01-Equivalent Grants: Success Rates, by Gender and Type of Application
 - <https://report.nih.gov/nihdatabook/report/131>
- Early-career setbacks and future career impacts
 - <https://www.nature.com/articles/s41467-019-12189-3>
- Revise and Resubmit an Application
 - <https://www.niaid.nih.gov/grants-contracts/revise-resubmit-application>
- Frequently Asked Questions: Resubmissions of NIH Applications
 - https://grants.nih.gov/faqs?a_html=#/resubmission.htm?anchor=53101

10.3.12 Chapter 8B – Feedback, Revision, and Resubmission – Examples of Reviewer Feedback

10.3.13 Chapter 9 – Writing Support and Peer Engagement

- SERCC website

Getting a Fellowship – Chapter 10

- <https://sercc.medicine.uiowa.edu/>
- Schedule an Editing Project form
 - <https://sercc.medicine.uiowa.edu/form/schedule-an-editing-project>
- SERCC pricing
 - <https://sercc.medicine.uiowa.edu/pricing>
- SERCC events webpage
 - <https://sercc.medicine.uiowa.edu/news-events>
- Grad Success External Fellowships and Grant Support
 - <https://grad.uiowa.edu/grad-success/external-fellowships-and-grant-support>
- Writing and Humanities Program
 - <https://md.medicine.uiowa.edu/student-and-program-resources/opportunities-growth/writing-and-humanities-program>
- CLAS Writing Center website
 - <https://writingcenter.uiowa.edu/>
- Writing Resources page
 - <https://writingcenter.uiowa.edu/resources>
- HCC website
 - <https://engineering.uiowa.edu/hcc>
- College of Law Legal Writing page
 - <https://law.uiowa.edu/iowa-jd/curriculum/legal-writing>
- Frank Business Communication Center
 - <https://students.tippie.uiowa.edu/tippie-resources/frank-business-communication-center>
- College of Education Writing Resource
 - <https://education.uiowa.edu/current-student-resources/college-education-writing-resource>
- NIH policy
 - <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-25-132.html>
- enforcement actions
 - <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D/subject-group-ECFR86b76dde0e1e9dc/section-200.339>

10.3.14 Chapter 10 – Reference Materials and Appendices