

## NRSA Application

The National Institute of Health (NIH) National Research Service Award (NRSA) is a major source of support for graduate students in the middle to late stages of graduate school. The stated purpose of the NRSA is to “provide individual predoctoral research training fellowship awards to promising doctoral candidates who have the potential to become productive, independent investigators in research fields relevant to the missions of these participating NIH Institutes and Centers.” Applications for the NRSA are accepted at three deadlines across the calendar year and consist of a 10-page maximum research proposal to be completed by the applicant and ~15 pages of supporting material to be completed by the applicant and advisor.

This guide is intended to help students effectively navigate the NRSA application process. It consists of two main sections. The first is an overview of the NRSA application process, while the second is a top-ten list of tips for a successful NRSA application. It is not intended to replace any application instructions provided by the NIH or to provide a “winning strategy” for writing a proposal. Any student interested in applying for the NRSA should be sure to consult other resources in addition to this guide and be sure to talk to other students and faculty members who have been successful in obtaining funding.

### *Initial Preparation*

The first step for any student interested in applying for the NRSA should be to download the official program announcement and application instructions. The most current program announcement can be found here:

<http://grants.nih.gov/grants/guide/pa-files/PA-07-002.html#SectionIV>

**CUSON INSERT: Most current program announcement for NINR F31 can be found here: <http://grants.nih.gov/grants/guide/pa-files/PA-05-091.html>**

Please note that the information contained in the program announcement can be rendered obsolete very quickly. Always verify that you have the most current information available. Make sure to note the relevant application deadlines and eligibility information in the program announcement. At this point you might also want to find copies of applications that have been submitted and funded in the past (past applications might be available from your advisor). These will provide you with a pretty clear idea of the information that you will need to provide when completing your application.

As noted above, there is a considerable portion of the NRSA application that will need to be completed by your doctoral advisor. Before you begin writing your section of the application, it may be worthwhile to work out a timetable with your advisor for completing the application. This is particularly important since there are parts of the application written by your advisor that will complement statements written by you and you want to be sure that your statements are consistent (for example, it would be a

disaster if your advisor characterized your training plan as preparation for a career in academia while you stated that you were planning on a career in industry).

A final decision to consider at this point is which component of the NIH you will submit your application to (these components will be listed in the program announcement). Each NRSA application is submitted to an individual component of the NIH (i.e. NINDS, NIDA, NIMH) that makes the final funding decision for the application. Each component has differing program goals and areas of interest. Visit the website of each of these components to determine whether your research falls under the purview of that component and to determine whether your research may fall within an area of special interest for any funding component. It may be worthwhile to contact a program officer (contact e-mail addresses are usually listed on the websites) to inquire about the applicability of your research to the component's funding goals. You can also get information about previous proposals funded by each funding component at the following website:

<http://crisp.cit.nih.gov/>

### *Writing the Proposal*

As mentioned previously, this guide isn't intended to provide a winning strategy for writing a research proposal. Different labs and different scientific disciplines often make different stylistic or strategic choices in writing proposals, all which may be equally valid and effective. One of the best ways to learn to write a successful research proposal is to read lots of research proposals that have been written previously. Talk to graduate students and post-docs in your lab to see if you can get copies of fellowship proposals that they have submitted in the past. Also talk to your advisor to get a copy of any grants applications that have been recently submitted. Making your research easily understandable to reviewers who are not likely to be experts in your exact topic can be a difficult task, but is essential for a successful proposal. Borrowing techniques and strategies from your advisor (who has presumably been successful in obtaining funding) can make this task much easier.

You may also want to consider writing your NRSA application concurrently with your prospectus (which can be written in the format of an NRSA proposal). Having a prospectus meeting prior to submitting your NRSA proposal will essentially allow you to have your entire committee critique your application. Your committee members may also be able to write letters of recommendation for your application, as they will be familiar with the details of your research proposal (and will hopefully be satisfied that you have the means to complete them).

### *Writing the Other Stuff*

Your research proposal is only one part of your NRSA application (some would argue that it isn't even the most important part of the application). You must also provide supporting material to convince your reviewers that you have the ability and resources

From Yale University Interdepartmental Neuroscience Program

[http://www.med.yale.edu/neurosci/other\\_files/NRSAApplication.pdf](http://www.med.yale.edu/neurosci/other_files/NRSAApplication.pdf)

Revisions in grey by K. Kulage, Office of Research Resources, Columbia University School of Nursing

to complete the research that you have proposed and that your graduate training is important enough to warrant federal funding. This supporting material should be quite different from the material that you may have written for an NSF fellowship application. Reviewers are generally not concerned with the “broader impacts” that may make or break an NSF application, but are concerned instead evidence of potential for training as a scientist. This evidence can include prior publications, academic honors, previous fellowships, and descriptions of your previous research experience and proposed dissertation research.

As mentioned earlier, there is significant amount of supporting material that must be written by your advisor. This will include an NIH Biosketch, a description of the laboratory resources that will be available for your research, and a description of the training plan that your advisor has prepared for you. This material ends up being pretty time-consuming and must be perfectly consistent with the supporting material that you have written. It is definitely to your advantage to make a plan with your advisor to get this part of the application together well ahead of the due date.

You must provide three letters of reference along with your application. Your advisor cannot write a letter, so members of your qualifying or thesis committees are generally good choices. Undergraduate or rotation advisors would also be possibilities. Generally, it is to your benefit to choose recommenders who are familiar with the project that you have proposed for your application and who can attest to your ability to complete that research (hence the convenience of asking your committee members to write you recommendations right after your prospectus meeting).

### *Submitting the Application*

**CUSON INSERT:** Before your application can be submitted routed through the CUMC Research Administration Office for administrative review and signature. Research Administration requires grants to be submitted to their office a minimum of 5 business days prior to the deadline. The research proposal portion of the application is not reviewed during this process, so it is perfectly fine to continue revising your proposal while the rest of your application is awaiting administrative approval.

Before you submit your application you will also write a cover letter. In this cover letter you can request the funding component that you want your application sent to and request a study section that you would like to review your application. A list of study sections and study section rosters can be found here:

<http://cms.csr.nih.gov/PeerReviewMeetings/Fellowship/>

**CUSON INSERT: Cover letter requesting funding component is not needed if responding directly to the NINR F31 Program Announcement.**

Each study section specializes in a particular area of biomedical research and it is important that your application be reviewed by scientists who will understand the

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research that you are proposing (confusing your reviewers would be a disaster). Read the descriptions of each study section and choose one that fits best with the research that you are proposing. You may also want to review the study section rosters with your advisor- there may be study section members who would be particularly well-suited to review your application in some study sections and this might influence your choice.

### *What Happens Next*

When you submit your application, you will create an eRA Commons username and password.

***CUSON INSERT: ORR Office will take care of obtaining an eRA Commons username for you prior to grant submission.***

When your application has been received by the NIH and entered into their computer system you will be able to log in to the eRA Commons website and check the status of your application (you should get an e-mail when your application has been received). Immediately after your application has been received you should be able to check the study section that your application has been assigned to and the date on which your application will be reviewed. At this point you can address any questions that you might have to the Scientific Review Administrator listed on the website.

A few weeks after your study section has met you will be able to check the priority score and percentile that were assigned to your application by your study section. Priority scores range from 100 to 500 (where 100 is the highest priority for funding and 500 is the lowest). Each member of your study section rates your application on a 1-5 scale and the mean is multiplied by 100 to derive the priority score. The percentile score tells you where your priority score ranked among all of the priority scores assigned by that study section. A few weeks after your priority score is released you will be able to download detailed reviews of your application (each application is assigned two main reviewers who present the application to the study section and write detailed comments). At this point you will also be given the name and contact information of your program officer who will be able to answer any questions that you may have about your application's status.

### *10 tips for writing your NRSA*

These tips are based on my experience writing (and rewriting) my NRSA and, even more so, on reviews I received on my applications, the second of which was funded.  
–Shannon Gourley

**1. Read the PHS 416 instructions manual.** It's long and dry, but it's full of important information like font size and how to justify the use of animals or address the inclusion (or exclusion) of women and minorities in your studies. These might seem like minor issues to you, but they're important to the NIH and need to be strictly followed. In my initial submission, I was penalized for not spelling out why I wanted to conduct my

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experiments in rats, even though I felt it was fairly obvious that experiments calling for direct infusions of drugs into the amygdala would best be conducted in the rodent.

***CUSON INSERT: “Start early” paragraph tailored for CUMC submissions.***

**2. Start early.** Your application has to be routed through the CUMC Research Administration Office for administrative review and signature. Research Administration requires grants to be submitted to their office a minimum of 5 business days prior to the deadline. Everything has to be complete except the proposal when you send your application to them, including the pagination.

**3. Ask someone who’s not in your field to read your proposal.** Your study section will primarily include people who are not actually in your field, so take extra care not to use too much jargon or assume your readers are familiar with your methods. For example, I proposed viral-mediated gene transfer, which is common in my field, but one reviewer asked why I was infusing the HIV virus into the amygdala. In my resubmission, I was much more explicit about what the Herpes Simplex Virus is and why it’s simply a delivery mechanism, not an infectious agent in the traditional sense.

**4. Don’t shy away from statistics in your proposal.** This won’t apply to everyone, but especially if you’re conducting any sort of behavioral work, run a power analysis to justify the number of animals you propose to use. Although I was very thorough in describing how I would analyze the data, reviewers requested a power analysis to justify the number of animals I proposed to use to collect those data.

**5. Give your advisor sufficient time to complete his/her sections.** The NRSA application is as much about your advisor’s ability to mentor you as it is about your ability to be successfully mentored. Your advisor will need sufficient time to fill out information about lab space, other successful mentees, current and past funding, etc. I cannot emphasize how important it is to demonstrate your advisor has the space, time, funding, and experience to be a good mentor. If your advisor doesn’t talk him/herself up in the mentor section, encourage him/her to do so. Your advisor will be judged primarily on funding, publications, and previous mentors, but the surrounding research environment is also important and should be emphasized.

**6. Emphasize your ethics ‘training.’** This is not just a gratuitous prop for the INP ethics course. The NIH is very concerned about funding ethically-trained scientists in light of recent ethical scandals in the field. Write about the formal ethics course you’ve taken, discuss the topics covered, and emphasize how important you think such training is.

***CUSON INSERT: CUMC requires applicants to have completed the RASCAL Good Clinical Practices and HIPAA courses online prior to submission; be sure to mention this training in your application.***

**7. Write about your broader learning environment.** The NIH is interested in your learning environment beyond the lab. If your department has a departmental seminar series, write about it. Write about research talks; mention that you participate regularly as both an audience member and a presenter. If your advisor sends you to meetings—even if only once a year—write about what a valuable learning experience that is. If you attend lab meetings in a collaborating lab, mention that. In short, make sure the NIH knows you and your lab don't do your science in isolation.

***CUSON INSERT: ORR Office has boiler plate information on CUMC “Resources” available to applicants for use.***

**8. Display independence.** If you've taken initiative to start up a course, give a talk at a meeting, bring a new technique into the lab, start up a collaboration, etc., write about it in your essays. Even better, make sure your advisor mentions it in his/her essay. Independence demonstrates that you think independently of your advisor and that you have promise as a future PI.

**9. Write simply.** Your application will be one in a huge pile of applications your reviewer is probably going to read while exhausted late at night. Regardless of how well you write, your reviewers are going to misread some things. Simple prose will minimize how much is misread. Write clearly and avoid jargon and long, awkward sentences. Avoid long paragraphs; shorter paragraphs and bullet or numbered points create a break for the eyes and make the text on the page seem more manageable. Brevity is valued. If you can write your research proposal in 9 pages, write it in 9 pages. Don't add a page of empty text for the sake of filling the allotted space; reviewers can smell time-wasting maneuvers from a mile away.

**10. If you resubmit....** Go above and beyond to address reviewers' concerns, but don't fix it if it's not broken. Demonstrate that you're invested in winning this funding. For example, to address reviewers' concerns about my work with viruses (see #3), we not only clarified what the HSV virus is, but added a figure illustrating viral spread in the brain, and asked a faculty person in the department who also works with viruses to act as a consultant on the work. Even if you might think the reviewers' concerns are foolish, they must be taken seriously. On the other side of the coin, don't change anything your reviewers didn't criticize, because they have to read everything you change, so each unnecessary change you make adds unnecessary work for them. In the cover letter of your resubmission, explicitly state the several things you did to address the reviewers' concerns; thank them for their constructive comments. Limit your letter to one page. Remember, your application is one in a very large pile; be pointed, respectful, and thorough, but also efficient, in your revisions.