

## Applying for a NRSA

By the end of their graduate years, MD/PhD students attain a basic level of competency in many of the skills necessary to succeed as a scientist. A PhD recipient must demonstrate the ability to analyze scientific hypotheses and data, perform experiments to generate data to test hypotheses, and cogently present this data in a written form acceptable for publication in a scientific journal. Grant writing, however, is a skill that many fail to learn, but it is essential for a successful career as an academic physician-scientist.

Graduate programs have recognized this deficiency, and are requiring that students write and defend a grant style proposal in order to advance to candidacy for a PhD. However, this is not required by all programs, and orally defending a grant proposal before a graduate committee is very different from getting a proposal funded by an external source.

Enter the F30 awards, also known as the Ruth L. Kirschstein National Research Service Awards (NRSA) for Individual Predoctoral MD/PhD Fellows. These awards are funded by certain institutes at the National Institutes of Health (NIH) in order to promote the retention of future physician-scientists in biomedical research. In funding these awards, the NIH hopes to provide an experience that will guide the formation of future grant applications, eventually leading to a higher percentage of R01-funded physician-scientists. For MD/PhD fellows who are, as stated in the program announcement, “from underrepresented racial and ethnic groups, individuals with disabilities, or individuals from disadvantaged backgrounds,” most NIH institutes also offer the related F31 award which is designed to promote diversity in health-related research.

The F30/F31 application is similar to that of a Research Project Grant (R01) application, the funding mechanism that is the cornerstone of most laboratory groups. The scientific portion is organized in roughly the same format, requiring sections for Specific Aims, Background Information, Preliminary Studies, and Research Design and Methods. The F30/F31 and R01 awards are designed to fund well-constructed hypothesis-driven research plans, but the F30/F31 application is substantially shorter than a R01. Many of the administrative portions are also very similar, including sections on human and animal research, resource sharing, and the responsible conduct of research. However, there are differences as well. The most substantial of these are the requirements for a fellow training plan and a sponsor information section, which are discussed in more detail below.

### Training Plan

One of the most common pieces of advice received from recipients of the F30 award is to not neglect the training plan. Jennifer Guimbellot, an F30-funded UAB MSTP alumnus, believes that the training portion is just as important as the research proposal for the overall score of the application. “Of course the research part must be good, but they are very familiar with how much a graduate student’s focus may change over time,” she said. “They are, however, very interested in training someone whose future research will fit in to their own institute’s aims, so if the training portion is less than excellent due to the mistaken belief that the research proposal is the most important, you won’t get as good a score.”

For a good training plan section both the sponsor and the applicant should be involved in formulating the training plan. It is left up to the sponsor and the applicant to decide upon the organization and content of this section. One organization scheme that works well is to divide the training into subsections based on who is requiring the applicant to complete these goals. So, a separate subsection could be given to requirements by the fellow’s graduate program, by the MSTP program, and by the sponsor. An advantage to this approach is that the UAB MSTP office has written a standard research training plan describing its requirements which should be a good starting point for any application.

Coursework, journal clubs, seminar series, lab meetings, committee meetings, and national meetings are some of the items that can be included in this section. The requirements for advancing to candidacy and for graduation from both the MD and PhD programs should also be discussed. Don’t neglect training that has already been completed, and make sure to include continuing education on research ethics. You may also wish to include a list of available training opportunities that aren’t required but are encouraged. In this section, how you describe the training is often just as important as the training experiences listed – a weekly meeting with a sponsor may not seem too impressive, but if it is emphasized that the applicant is required to intelligently analyze papers or data during this meeting, it may make this meeting appear to be a critical tool in training the applicant to think like a scientist.

### Sponsor Information

Some of the information in the sponsor section can be taken directly from the sponsor’s curriculum vitae (CV), biosketch, or previous grant applications, but some will require a more substantial time commitment, so make sure to get started early. This is a time-consuming process, and your application will be delayed if the sponsor section is not completed in time for the submission deadline. An especially critical piece of information in this section is the mentor’s previous trainees and their current positions. If possible, noting that your mentor has successfully trained MD/PhD students in the past is particularly helpful. If your mentor does not have previous trainees, you may wish to contact a committee member or a collaborator and

arrange for them to co-mentor you. This is also a helpful strategy if your mentor lacks experience in one or more of the key areas discussed in your research proposal.

### Other Differences in the F30 and R01-style awards

- The F30 does not require a full budget, as only a small institutional allowance is provided for travel, books, and supplies each year, but it does require information on yearly tuition, health insurance, and fees charged by the university. The MSTP office is very helpful in gathering this information.
- The F30 also requires a list of standardized test scores and grades for every course taken in undergraduate, medical, or graduate training. Some institutes may have additional requirements – the National Institutes for Neurological Diseases and Stroke (NINDS), for instance, asks applicants to include a timeline of their MSTP training experiences.
- F30/F31 awards require at least three completed reference letters from individuals “who can make the most meaningful comments about your qualifications for a research career.” This is in addition to letters from your mentor and any co-mentors listed. When possible, it is preferred that one reference is from a different department.
- As noted earlier, not all institutes offer the F30 award, so applicants need to frame their hypothesis carefully. Jennifer could not apply to the National Heart, Lung and Blood Institute for an F30 to fund her pulmonary biology research, so she altered her application for submission to another institute. “I was able to fit it in quite well with National Institute of Environmental Health Sciences by looking at my thesis work from a different angle,” she said, “and it ended up leading to a very interesting set of experiments. In fact, during my residency interviews, PIs at CHOP and Cincinnati said flat out that they wanted me in their lab because of this work, which I only considered in order to try and get an F30!”

### Other Advice on Applying for the F30 Award

- Lisa Nowoslawski Akhtar suggests reading other successful applications. “Some people in our program have written really great grants. Use them.”
- Have others critique your application before submission. Many successful fellows modified their application after receiving feedback from their committee members.
- Don’t be afraid to contact the NIH if necessary. Brain Dizon was uncertain if his proposal would fit within the aims of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), so he contacted them and was very glad he did. “I was advised that because our lab had not previously published anything on type I diabetes, I should have a co-mentor at UAB who had expertise in diabetes research. It is to your advantage to contact

the NIH; they are an incredible resource and any advice they have can greatly strengthen your application.”

- Start early! Even if the scientific portion of the application is completed, the administrative requirements for grant submission are onerous. Check with the IACUC and IRB for their policies on animal and human research protocol approvals, respectively. Check even if you aren't performing human or animal research – at some places, the IRB requires that researchers who aren't conducting human research fill out a No Human Subjects form. With the 'just-in-time' policy, the formal protocol approvals don't need to be in place until the award is officially activated, but the approval process should be pending at the time of grant submission.
- Start the walk-through with the UAB Office of Grants and Contracts (OGCA) ([www.uab.edu/ogca](http://www.uab.edu/ogca)) as soon as possible. Brian ran into problems with this. “I ended up wasting a lot of time running around to get all the papers signed so I could send out my application. This part of the process takes a lot longer than you think, especially if there isn't someone in your department that knows about the walk-through process.” Contact OGCA to get your eRA commons username first and then give your application to the OGCA for a walk-through. It doesn't have to be finalized at this point – you can still perform last minute edits to the scientific areas later, but there should be at least a rough draft present for every section.
- Just do it. It's a long process, but there's no better way to learn than by doing. In addition, UAB pays students \$250 just for submitting the grant application; do you really have anything to lose? If you're successful, the MSTP will also supplement your stipend with an extra \$2,000/year.
- NRSA applications are now submitted electronically through [www.grants.gov](http://www.grants.gov). Give the OGCA a little extra time to handle your application.

### Links

- The program announcement for F30 applications (<http://grants.nih.gov/grants/guide/pa-files/PA-05-151.html>) lists which institutes at NIH fund F30 awards. It also contains general award information, eligibility requirements, application, submission, review, and award information. Read it thoroughly and refer back to this document frequently. It should lead you to all other instructions and forms required for completing the application. The F31 to promote diversity is located at <http://grants.nih.gov/grants/guide/pa-files/pa-07-106.html>. There is also a F31 for PhD fellows which MD/PhD fellows can also apply found at <http://grants.nih.gov/grants/guide/pa-files/PA-07-002.html>.

- Submission schedule (<http://grants.nih.gov/grants/funding/submissionschedule.htm>).  
Contains submission dates for NIH grant applications, including the F-series (F30, F31) awards.