Rather than take time to give this presentation in person, I think that it is more efficient if you look at these slides and my notes before the workshop. That way, we can use the entire workshop to answer your questions. So please go through this presentation before the workshop and write down any questions you have. Email them to gsdean@umn.edu (by August 18 if you register for the August 22nd workshop; by September 12 if you register for the September 14th workshop) and we’ll do our best to answer them during the workshop.
I feel very confident in the advice I’m giving you, but remember that are there different cultures and expectations associated with each discipline. My own research background is the study of morphological and behavioral evolution in birds.

My credentials for giving this presentation are that I’ve served as a reviewer for the NSF Graduate Research Fellowship Program (in two of the 169 subdisciplines), I’ve taught a graduate proposal writing course the last eight years to incoming EEB students (a significant percentage of whom were funded or received honorable mentions) and for three years I taught a university wide proposal-writing course. I’ve also talked with reviewers from additional disciplines and they agree in general with my recommendations.

What I am offering you in this presentation, and what my colleagues and I will offer in the workshop you’ve registered for, is “advice” not “instructions” on how to apply.
As a starting point, let's talk briefly about why you should learn to write proposals. Obviously, you are enrolled in this workshop in order to be able to increase your chances of being funded. But even if you aren't funded, applying for this fellowship is very important at this stage of your career. You need as much practice and guidance as you can get to make you an effective writer. Regardless of your career path, if you dislike writing and/or don’t write well, you will be at a disadvantage. Many people fail to reach their potential in their careers because their written communication skills are inadequate.
The focus of this presentation and in the workshop will be the NSF Graduate Research Fellowship because this is the most common external fellowship applied for, and received by, University of Minnesota students. However, my comments are also relevant to writing proposals for other fellowship opportunities. I encourage you to look at the website of external fellowship opportunities maintained by the graduate school and to apply for multiple fellowships.
TODAY’S PRESENTATION OUTLINE IS FOR THE NSF-GRF

• How proposals are reviewed
• General Writing Suggestions
• Personal, Relevant Background and Future Goals Statement
• Graduate Research Plan Statement
• Hypotheses
• Letters of Recommendation
The best source of information about the NSF GRF program is NSF’s website. When applying for any grant or fellowship, you should always access the funder’s website to get the most up-to-date information possible.
Make sure that you are aware of the submission deadline for your program and be sure to upload your application before 5pm. There are no exceptions. Therefore, I recommend that you make an effort to complete submission 24 hours earlier just in case something goes wrong.

<table>
<thead>
<tr>
<th>2017 GRFP Deadlines</th>
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<tbody>
<tr>
<td>All applications are due at <strong>5:00 p.m. local time, as determined by the applicant's mailing address.</strong></td>
</tr>
<tr>
<td>October 24, 2016 (Monday)</td>
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<tr>
<td>• Geosciences</td>
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<tr>
<td>• Life Sciences</td>
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<tr>
<td>October 25, 2016 (Tuesday)</td>
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<tr>
<td>• Computer and Information Science and Engineering</td>
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<td>• Engineering</td>
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<td>• Materials Research</td>
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<td>October 27, 2016 (Thursday)</td>
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<td>• Psychology</td>
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<td>• Social Sciences</td>
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<td>• STEM Education and Learning</td>
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<tr>
<td>October 28, 2016 (Friday)</td>
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<tr>
<td>• Chemistry</td>
</tr>
<tr>
<td>• Mathematical Sciences</td>
</tr>
<tr>
<td>• Physics and Astronomy</td>
</tr>
<tr>
<td>November 3, 2016 (Friday)</td>
</tr>
<tr>
<td>• All reference letters must be received by 5:00 p.m., Eastern Time Zone</td>
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</table>
Applicants are divided into four levels. Reviewers are aware of the level of each applicant and as reviewers we adjust our expectations accordingly.

Level IV refers to students with more than two years of graduate training, but whose previous training was in an entirely different field. If you are considering applying as a Level IV applicant you should contact NSF to make sure that they agree that you are eligible to apply.

Note: NSF has been receiving a very large number of applications in recent years. As a result, for the first time this year, students may submit only one proposal once they’ve started their graduate career.

If you are in your second year, even if you submitted an NSF GRF proposal last year, you are still eligible this fall and should submit a proposal.

If you are in your first year, you have to decide for yourself whether or not to submit a proposal this fall. If you submit this year, then you won’t be eligible to submit to NSF next year. Regardless of whether you intend to apply as a first year student, I strongly encourage you to write a proposal for this NSF fellowship. I think that the experience alone is very worthwhile, even if you decide not to submit to NSF this year. Furthermore, there might be other fellowships to which you can apply this year. Just make sure that your advisor knows this and is OK with you spending the time this fall even if you decide not to submit.
To be successful as a writer, you must know your audience. In most cases, certainly this is true for NSFGRFP, you should assume that the readers will have a range of backgrounds and not all will be familiar with the kind of research you propose. Your proposal must appeal to this full range of potential reviewers. In the case of NSFGRFP, the reviewers are likely to have backgrounds as diverse as the faculty of your graduate program. One way to think about this is that your proposal should be interesting to, and interpretable by, the faculty member in your program whose interests are closest to your own and the faculty member whose interests are most dissimilar.
Your readers are scientists with full-time day jobs who have volunteered their time to the NSF GRF program. They will be reading proposals in their spare time. Therefore, your readers will be rushed. When they read your proposal they may be in a bad mood having run out of coffee and having just finished reading their tenth proposal of the morning, which had atrocious grammar. Therefore, your writing needs to be well-organized, well-constructed, and enjoyable to read.
Your proposal will be read by two or three reviewers, each of whom gives your proposal two scores (Intellectual Merit and Broader Impacts). Proposals are read in order of their level:

Level I proposals (those from current undergraduate students),

then Level II proposals (those from first year graduate students),

then Level III proposals (those from second year graduate students), and

finally Level IV proposals (those from graduate students with more than two years of graduate experience but in a different field).

In recent years, 14% of proposals have been funded with about the same percentage awarded honorable mentions. You should feel very proud if you get an honorable mention. In my experience, every proposal that gets an award is deserving. It is also my experience that most of the honorable mentions are just as deserving — there just isn’t enough money.

Reviewers provide two scores — Intellectual Merit and Broader Impacts. The former is pretty obvious, but what does NSF mean by Broader Impacts?
Traditionally, scientists have seen the translation of science for the non-scientific community as the responsibility of other professions. Academics teach students science content but otherwise, scientists largely wrote scholarly publications and communicated with other scholars in their disciplines.
The purpose of NSF’s Broader Impacts criterion is to encourage the current and next generation of scientists to take partial ownership of the translation of science to the broader public. To spend their own time and effort making sure that science content is delivered to the public and to others involved in communicating science.
Here is how the NSF defines “Broader Impacts”. You aren’t expected to be involved in all of these.
To get an idea of the kinds of things that can be done to communicate your research, visit the University of Minnesota Bell Museum’s web page entitled “Engaging The Public” at:
http://www.bellmuseum.umn.edu/research-collections/public-engagement-projects. This page lists a wide variety of activities. It also lists contact information if you would like to explore a broader impacts partnership with the museum.
Specifically, I strongly recommend that you consider becoming involved in “Teaching Smart”. This is an opportunity to help K-12 teachers to get kids excited about STEM disciplines.
1) Reviewers are scholars drawn from relatively broad disciplinary fields. Remember, they are reading fast (probably spending no more than 15 minutes on your proposal).

2) In general it is best to avoid poetry or overly flowery language. Avoid sentences such as “Ever since I learned to swim in my grandparents’ lake when I was 4 years old, I have wanted to be a limnologist.”

3) Empty statements such as “My leadership skills are exceptional” do not sit well with reviewers. Rather than making an unsupported statement such as this, your goal should be to describe a personal experience that leads the reviewer to conclude that you have exceptional leadership skills.

4) Everything should sound like it comes from the same person. For example, consider the following proposal:

   the personal statement says you love nature and the outdoors,
   the prior research experiences statement describes all your work in natural ecosystems,
   but your proposed research is to be indoors in the lab.

   There is a disconnect between these statements. If you have such a disconnect, then you need to explain why.
Most students assume that the Proposed Plan of Research is the most important part of the proposal and spend more time on it than on the Personal, Relevant Background and Future Goals Statement. This is a very competitive program and so both sections are important and you are unlikely to be funded if either is weak. That said, I actually think the Personal, Relevant Background and Future Goals Statement may be the most important simply because first impressions matter.
The Personal Statement is the first section that reviewers read. This statement sets the tone for how the reader will think about the rest of your proposal. When a reviewer finishes reading a poorly written Personal Statement, they have already made up their mind that the proposal will not be funded. At that point the reviewer’s mindset is to point out the proposal’s weaknesses. Nothing else in the subsequent sections is likely to change the reviewer’s mind. In contrast, if you have a spectacular Personal Statement, reviewers will read the remainder of the proposal expecting (and hoping) that it will be equally strong.
I want to stress that this is a “personal” statement. The reader is interested in you as a person. Therefore, YOU should be the focus of this statement (not your research advisor, your courses, or even your research...).

If you write about your courses, you should tell the reader why those courses helped you to better understand your own scholarly interests.

If you write about your research, you should tell the reader how you matured as a scientist as a result of those experiences.
Before you write your personal statement, I suggest that you try to complete two exercises. First, imagine that you are at a reception, or you are back home talking with friends or neighbors, and someone asks why you decided to go to graduate school and why in your particular graduate program. What would you say?

Note that the question is not about what you will study. The question is why you have chosen to pursue this course of study?
The second exercise is to start to get specific about the things that contributed to your decision to go to graduate school.

Specifically, what are the key events or experiences in your life that caused you to decide to go to graduate school. These key events could be positive. For example:

“While snorkeling in the Caribbean and marvelling at the incredible diversity I saw, it suddenly struck me that all the ecological and evolutionary concepts I had been learning for the past few years were playing out in front of my eyes.”

Key events could appear to have been negative. For example:

“Having celebrated my five year anniversary doing lab work for a biotech company, it hit me that I wasn’t doing the kind of science that had always fascinated me. I had taken a wrong turn in my career. I didn’t want to be a technician pursuing someone else’s questions. I wanted to work in academia where I could set my own research agenda and pursue questions of my choosing.” Although this might appear superficially to be a negative experience, it is actually incredibly positive because it resulted in the author developing a much better understanding of his/her motivation as a scientist.

Note that it is important not only to describe the events themselves, but also the events’ impact on you and your career choices.
One way to think about these key events is graphically. There is a wide range of career paths that each student could pursue (the vertical axis in this figure). It is possible that over your lifetime (the horizontal axis) there has been no change in your career aspirations. You identified a career when you were two years old and have pursued that career in an unwavering course of study through undergraduate and now in graduate school to reach that goal. Possible, but I doubt it.
However, I’m guessing that a plot of your career goals looks more like this figure—where the path from High School to Graduate School is marked by multiple significant shifts in ideas about career goals. You may have started college as a pre-med major but a summer volunteering at a hospital convinced you that in fact you had no interest in spending your career in that environment. You may have taken a statistics course to satisfy a math requirement only to find that you absolutely loved analyzing data and extracting meaning from complexity. As you think back over your life, I think that each of you has a series of such experiences or events that caused your career trajectory to change and it is the sum of those significant experiences that explains why you are in graduate school today. That is what the reader wants to see in your personal statement. What were those events, what did you learn about yourself and your aspirations, and what subsequent actions did you take as a result of those events?
For most of us, the act of writing is about successively improving what we’ve written to develop the best possible proposal as shown in this figure where proposal quality is on the vertical axis and the horizontal axis represents successive drafts. Unfortunately, as writers we tend to be strongly constrained by the words we’ve written and the organizational structure we’ve employed. In this example, while the proposal improves in quality incrementally with each draft, it never reaches the point of being a high quality proposal. Sometimes, the best path to a high quality proposal is to set aside some, or all, of what we’ve written and to try writing on a blank screen or sheet of paper.
If you find yourself struggling with a paragraph or struggling to insert a new idea into existing text, it is often best to set aside what you’ve written, take a few moments to think about what it is you are trying to communicate and then start writing on a blank screen. As shown in this hypothetical example, the author started struggling with draft #3 and decided to start anew with several key sections in draft #4. As a result of not being constrained by what had been written in draft #3, the author was able to produce a significant strategic improvement to the proposal and the final result was a proposal of much higher quality.
One of the most influential writing constraints is our opening sentence or paragraph. I suggest that you write three completely different introductory sentences or paragraphs for your personal statement and for your research statement. Talk about these with your colleagues to see which resonates most strongly. Which introduction allows you to convey your thoughts most easily? If you do this, you increase your chances of writing a strong proposal. If you only come up with one starting point, you may find that no matter how many drafts you do, you’ll never produce a high quality proposal—all because of the constraint imposed by your starting point.

In this hypothetical example, the author worked on several drafts of three versions a, b, and c. By the time the author was working on the second draft of version “b” it was obvious that this was the most successful approach and this was the approach that the author developed into a full proposal.
The reviewers want to know about your research background. As you talk about your relevant background (research experiences and skills you’ve acquired) remember that this is still a personal statement. The reader is interested in the research and skills, but only as they relate to you. If you have one or more paragraphs about a research experience with no mention of yourself or how that experience influenced you, then you need to rewrite. You are the focus of this statement, not the research itself.
When talking about your career plans, there are two important things to keep in mind. First, you don’t need to know exactly what career path you want to follow. It is perfectly fine to mention several career paths that interest you and why. Second, NSF does not prioritize career paths. Careers in academia, industry, non-profit, or government are all equally appropriate.
The most common error made by graduate students when writing about their research, not just when writing an NSF GRF proposal, is to forget to put their research into a larger context. For example, consider a graduate student conducting research on a common bird species here in Minnesota – the Red-winged Blackbird. The research is actually intended to answer questions about why males of this species are more brightly colored than females. My advice to the student when writing their Research Plan is to avoid mentioning the study species or even the fact that they are working on birds in the introductory paragraph. Instead, the introductory paragraph should be about the theory and alternative hypotheses that have been developed to explain this phenomenon of sexual dimorphism in organisms generally. The focus is on the question, not on the system in which the study will be conducted. Only after this broader context has been established should the student introduce the study system and why it is an ideal system with which to answer the question.

Graduate Research Plan
Statement

1. Clearly state the overarching big picture question.
2. Clearly state the objectives of the research.
3. Indicate why the system you propose to study is ideal for the question you’ve posed.
Remember your audience when writing your research statement. I've suggested that you write a proposal that will appeal to the faculty member in your graduate program whose work is most similar to your proposed project and to the faculty member whose work is most dissimilar. This means using enough of the language of your discipline to appeal to the former but not so much that your writing is not understood by the latter.

In all writing, even short two-page proposals, the ideal conceptual structure is an hourglass. The introductory paragraph(s) should present the big idea and appeal to a very broad audience. The body of the proposal should be more specialized and convince the reader that you understand the concepts and appropriate methodologies to construct and implement an excellent study. The concluding paragraph should remind the reader of the big picture and how the results from your narrowly defined study will help answer the big question.
Finally, remember that one of the criteria that reviewers will use is Broader Impacts. NSF wants scientists to take an active role in engaging non-scientists with the STEM disciplines. I am an evolutionary biologist and I’ve certainly given many talks on my own research. However, I’ve also talked to the public about bird migration, birds and climate change, bird coloration etc... This is all broader impacts. You don’t have to talk about the specifics of your research project. If you have the opportunity to talk to a third-grade class, chances are that your research isn’t the most appropriate topic, so talk about more general STEM ideas.

My recommendation is that you include a separate section on Broader Impacts at the very end of your research statement. This section should include three types of information, who is the intended audience with whom you plan to communicate, what content do you plan to convey, and how are you going to convey that information?
WHO – tell the reader something about the audience (age, ethnicity, socio-economic background, education level...). I strongly recommend that your intended audience include a significant percentage of people from under-represented communities. First, it is the right thing to do. As a society it is critical that we have all communities participating actively in the STEM disciplines. Second, although NSF makes no statement about some audiences being more important than others, in my experience many reviewers explicitly interpret broader impacts as communicating science to members of under-represented communities. There is no ideal audience size for broader impacts. If you can reach hundreds or thousands of people with a presentation that is great. However, an in-depth interaction with five or six individuals over several weeks is also great.

WHAT – tell the reader what STEM content you will convey to the audience and why it is appropriate for that audience. If your specific research project is of interest and relevance to your intended audience then that might be the content you convey. However, you may find that you need to convey somewhat more general ideas given your intended audience.

HOW – tell the reader something about the logistics of the broader impacts program itself. Will you be working with a K-12 educator to develop a lesson plan that you will deliver at local schools? Will you be presenting a café scientifique presentation? Will you give tours of your research lab? The HOW could be a new program that you develop from scratch or it could be participation in an existing program such as TeachingSmart. I recommend against the former. While developing a new program of your own can be very rewarding and influential, you have very limited space in your proposal to explain a new program AND to convince the reader that you will be successful. It is much more convincing that you will be successful by participating in an existing program. Be sure to contact that program so that you can write convincingly about it and about their enthusiasm to have you participate.
If your research is relatively similar to that of your advisor then it is especially important that you emphasize what portions of your project are your ideas. Don’t hesitate to ask your advisor to address this point in his/her letter of reference.

The research you propose should make sense to be conducted by a University of Minnesota student. If your proposed research is on Chimpanzees in Gombe National Park in Tanzania, be sure to point out that we have researchers here with decades-long experience (and data sets) from that population of Chimpanzees. Without that explanation, your choice of projects appears illogical. If your research requires a specific piece of equipment, be sure to emphasize that that equipment is available here and that you will be given the access you need.
Reviewers are assessing whether you have great potential as a scientist. Part of this assessment is an evaluation of the research project that you have proposed. They are evaluating whether the project is innovative and exciting, whether it is feasible, and whether you have demonstrated sufficient understanding of the concepts and the methods necessary to complete the project. They understand that this is early in your career and that the project you end up doing may be quite different than the one you proposed. **You are not required to do the proposed project if you are funded.** This is a very important point because it means that you can relax a little about your project selection. You are not being asked to commit to a research project for your degree.

The NSF GRF Program funds individuals not research projects

If you are funded you are not required to actually conduct the research that you have described in your Proposed Project statement.
Research in most STEM disciplines is hypothesis driven. That means that your proposal should state explicitly the hypothesis you are testing. The problem is that many students have not learned how to correctly state or test hypotheses. I’ve read many proposals that make this mistake.

Consider this example. You’ve observed that Cattle Egrets (for you non-ornithologists, the bird in this picture is a Cattle Egret) are frequently observed in close proximity to cattle. You want to conduct research to investigate why this occurs.
The hypotheses you test could be ones you’ve read in the literature, or novel hypotheses that you yourself propose. Regardless, it is essential that you state hypotheses correctly. Here the word hypothesis is in quotes because what I’ve written is not in fact a hypothesis. It is a prediction. They are not the same, although often you will see predictions such as this identified as a hypothesis.
A hypothesis must include a scientific explanation for the prediction. To make the previous statement a hypothesis we need to add the explanation.
Let me give you some additional information. Cattle Egrets with cattle are frequently gathering food. With that information, an explanation for cattle egret proximity has been added and now this is a hypothesis.
Ideally, scientists design studies around tests of multiple competing hypotheses. It is worthwhile to take the time to read the literature and to think about your study phenomenon to consider other possible explanations. Here are two additional possible explanations from which we can craft hypotheses.

In science, ideally we test multiple competing hypotheses

Other than foraging efficiency, why else might Cattle Egrets be found close to cattle?

- Incidence of predation on Cattle Egrets might be negatively correlated with proximity to Cattle.
- Egrets and Cattle spatial distribution is correlated because they both are reacting to the spatial distribution of some other resource.
So now we have three alternative hypotheses to explain this one phenomenon. Of course, the more detailed the hypothesis, the easier it is to construct tests.

**Alternative Hypotheses**

Cattle egrets are spatially more closely associated with cattle than would be expected by chance because:

1) Egret foraging success is positively correlated with proximity to cattle.
2) Predation on egrets is negatively correlated with proximity to cattle.
3) The spatial distribution of both species is correlated with the same spatially variable resource.
In this slide, I’ve developed two alternative versions of hypothesis #1.
With your hypotheses clearly articulated, your next step is to identify the things that those hypotheses predict. Here I’ve identified five variables about which these hypotheses make predictions. In designing a study, you want to identify a set of variables for which the alternative hypotheses make a distinct set of predictions. As you can see from this table, if we collect data for all five of these variables we should be able to reject at least three of these hypotheses since no two hypotheses make the same set of predictions.

<table>
<thead>
<tr>
<th>Hypothesis Explanation</th>
<th>Egret distribution in a field with and without cows</th>
<th>Egret capture rate of insects close to cows compared with far from cows</th>
<th>% of diet comprised of insects associated with cows and cow dung</th>
<th>Frequency of egrets associated with cows that are moving as compared with those sitting</th>
<th>Frequency of predator attacks on egrets close to cows compared with far from cows</th>
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<tr>
<td>1a) increased success capturing cow-associated insects</td>
<td>different</td>
<td>higher</td>
<td>higher</td>
<td>same</td>
<td>same</td>
</tr>
<tr>
<td>1b) increased success capturing animals flushed by cows</td>
<td>different</td>
<td>higher</td>
<td>lower</td>
<td>higher</td>
<td>same</td>
</tr>
<tr>
<td>2) decreased predation</td>
<td>different</td>
<td>same</td>
<td>lower</td>
<td>same</td>
<td>same</td>
</tr>
<tr>
<td>3) spatial distribution of some other resource</td>
<td>the same</td>
<td>same</td>
<td>lower</td>
<td>same</td>
<td>lower</td>
</tr>
</tbody>
</table>
Finally, once you’ve designed your project in this way, your methods become very clear. The table lays out the critical variables that you need to examine in order to conduct a thorough test.

What I’ve outlined in this review of hypothesis testing is the ideal - multiple alternative hypotheses clearly stated, with unique combinations of predictions, and research methods that link explicitly to those hypotheses and their predictions. This is not easy to do, but I encourage you to try. If you can manage this, your reader will know exactly what you are doing and why.
I’m often asked whether students should include tables and figures in their research proposals. The answer is, “it depends.” They need to be legible, so they end up taking a lot of space in your proposal. My recommendation is that you wait until you have a nearly final draft to make this decision. Then put together two versions one with the figure or table, and the other with the text that you would need in order to make the same point without the figure or table. Which takes up less space? Which is most easily understood by the reader? You should make the decision on that basis.
NSF asks you to identify four letter writers and to prioritize them. If all four letters are submitted, then NSF will include in your file the letters from the three people you ranked most highly. If one of your writers fails to get their letter in on time, then NSF will use the three they did receive. If two of your writers fails to submit on time, then your proposal is incomplete and will not be reviewed.

IT IS UP TO YOU TO MAKE SURE THAT YOUR LETTER WRITERS MEET THE DEADLINE!

So how do you rank your letter writers?

Imagine that you worked in two labs: 1) a Nobel laureate with whom you spoke on only three occasions and 2) an Assistant Professor with whom you worked almost daily. The letter from the Assistant Professor is much more valuable and should be ranked more highly. However, if in the first lab you worked with a postdoc or graduate student on a daily basis, you could ask the Nobel laureate for a letter and suggest that he/she get input (perhaps even a draft) from the postdoc or graduate student. In that case, you would probably rank the Nobel laureate letter writer more highly.

Imagine that you have three faculty members who can write about your research experiences and a museum educator with whom you volunteered who can write about your experiences communicating science to school kids. You definitely want to rank the museum educator in one of your top three because it is important that your commitment to broader impacts be addressed by at least one of your letter writers.
Whenever you ask someone to write a letter on your behalf, be sure to make it as easy for them as possible. Provide them with whatever you can to remind them of the things you did with them. Also, be sure to give them information about the program to which you are applying and give them a draft of your proposal. Finally, if there are specific things you want them to write about, don’t hesitate to mention those. For example, a researcher might not think to mention your involvement in leading tours of the lab if you don’t remind them to talk about broader impacts.

You may want your advisor to state explicitly that the research ideas in your proposal are your own. In addition, there are sometimes important points that you feel uncomfortable making or didn’t have room to make in your statements. Make sure to ask your letter writers to make these points for you.
To reiterate, while the NSF Graduate Research Fellowship is indeed about research, do not underestimate the importance of the broader impacts portion of your proposal. Make sure to talk about your experience with and commitment to broader impacts in your personal statement. If you do not have experience, I strongly recommend that you get that experience between now and when you submit your proposal so that you can talk about that experience. When talking about your broader impacts experience remember that this is a personal statement. The reader wants to know not just what you did, but how that experience affected you. What did you learn about yourself and your interest in communicating science as a result of your involvement in broader impacts. Some students have pointed out how their own interest in STEM is a consequence of being an audience member in a broader impacts activity of another researcher.
Probably the best advice I can give to all of you is that you need to get over any shyness you might have about asking for feedback on your writing. The goal of proposal writing is to communicate an idea to an audience. There is no way for you to know whether your writing is accomplishing this goal unless you ask the audience. Therefore, I strongly recommend that you ask for feedback on your ideas and your drafts early and often.

In my proposal writing course I assigned students to small groups. I provided a rubric and some guidance on how to give each other feedback. They got together once a week to share drafts and discuss their writing.
Students have found this to be very helpful.

If you are interested in participating in such a group, I’ll have a sign up sheet at the workshop. I’ll ask you to identify the campus that you work on and your graduate program. I’ll then assign everyone to groups of 3-4 individuals based on campus and with an effort not to have multiple people from the same graduate program in a group. NOTE: Please don’t sign up unless you are willing to read the proposal drafts of your colleagues and to provide timely feedback to your colleagues on a weekly basis.
Students frequently ask me what they should do if they have an aspect of their record that might concern the reviewer.

Rather than ignore the issue and hope that the reviewer won’t notice it, I recommend that you point it out and explain why it is actually a strength.

For example:
The “D” in physics was the event that caused you to realize that your priorities needed adjusting and since then you’ve had only A’s in your courses.
You were really uncertain why you were in college so you took two years off to work in industry. The experience helped you to see why you wanted to get not only your undergraduate degree but to go on to pursue a research career.
This presentation has been focused on the specifics of the NSF Graduate Research Fellowship Program. However, most of what I’ve mentioned applies to proposal writing generally. Once you’ve done the work to develop a proposal for NSF, I encourage you to apply for other fellowships as well. However, remember that proposals should be written with an audience in mind. If you apply for another fellowship, you will need to rewrite the proposal to some extent. Make sure you know the priorities of each funding opportunity and adjust your proposal accordingly.
START WRITING NOW!!!