

SCHOLARLY PURSUITS: A GUIDE TO PROFESSIONAL DEVELOPMENT DURING THE GRADUATE YEARS

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CHAPTER FIVE

**“GRANTSMANSHIP IN SUPPORT OF STUDY OR RESEARCH:
WRITING A FELLOWSHIP PROPOSAL OR STATEMENT OF PURPOSE”**

APPLYING FOR FELLOWSHIPS IN THE EARLY STAGES OF GRADUATE STUDY: THE PREDISSERTATION PROPOSAL

(see samples of winning pre-dissertation proposals at the end of this chapter)

There are fellowships, such as the National Science Foundation (NSF) Graduate Fellowships, which are intended for students at or near the beginning of their graduate study. At this early stage, fellowship application materials — letters of recommendation, transcripts, and Graduate Record Examination scores — will closely overlap those used for graduate admission. Writing the NSF Proposed Research Project or the Javits Proposed Plan of Study and/or Research, however, can be a more challenging task. First-year graduate students generally are not yet ready to write a detailed research proposal, and yet they must be prepared to write an informative and focused essay about their research and study plans and future goals. The question is how to do so — conveying interests in a concrete and even personal way — while still having perhaps only tentative ideas.

Much of your knowledge at this early stage may still be related to undergraduate research, or other research experiences in between college and the graduate program. It is considerably easier to present a focused and well-informed discussion on what you have already done, than on what you are about to do (a condition common to all proposal writers). In using past experiences in a Proposed Research Project, however, it is essential to present them in terms of their impact on your future direction. A discussion of your senior thesis or major seminar paper, for example, should not focus on the procedures or findings, (which in the NSF

application are already discussed in the essay on past research), but on what you learned from them that influenced or shaped your future goals for graduate study. The impact may have directed you towards new methodologies and issues; or, alternatively, it may have encouraged you to continue working on similar issues, using your graduate training to expand your expertise. Using concrete examples from the past is primarily of value in allowing you to talk about future plans with greater assurance and precision. As noted above, the NSF application has a separate question on past research experience. You should of course answer that question by discussing your most important research experiences, but do not hesitate to cite them again in your Personal Statement or Proposed Research Project. The main point is to discuss them in a new way in the Proposed Research essay — once again, focusing on how this past research determined your future plans. **Each essay should be self-contained; you should not count on the reader to remember what you said in response to the research question when you are answering the question on your study plans.**

In organizing the essay on Proposed Research, if you are one of the many people who are still uncertain about your precise research plans, the best strategy for writing a focused essay is to organize it around two or three major research experiences from the past (perhaps an important seminar paper, a research project where you assisted a faculty member, your senior thesis) and show how they led to two or three areas that you wish to explore in your graduate program. Even the most undecided people can name three potential areas of interest that they can then use to write a focused essay. If you choose this strategy, it is usually more effective to start with your most important experiences and then proceed backwards — a principal that works effectively in preparing a curriculum vitae. If, on the other hand, you already have a fairly precise idea of what your research future plans are, you may choose to organize your essay around a single culminating research project from the past (in many cases, that is the senior thesis). Whether you decide on a single project or a cumulative series of events, it is important to organize the material tightly and not to get too bogged down in descriptive detail. Each sentence or paragraph about past experiences should help to advance the single theme — your future goals and how they took shape.

A final point about the essay is that it is also an important display of your writing skills. You should be sure that it is a highly polished piece of work. When you have completed a draft, read it over and have others read it. With a final draft, be sure to have someone else read it for typographical errors. (See the end of this chapter for sample pre-dissertation proposals and accompanying NSF essays.)

WRITING THE DISSERTATION PROPOSAL IN THE HUMANITIES AND SOCIAL SCIENCES, SPECIAL CONSIDERATIONS FOR RESEARCH ABROAD

(See samples of winning dissertation proposals at the end of this chapter.)

Learning to write an effective fellowship proposal at the dissertation stage has implications that go well beyond the process itself; it is a skill that is essential to a scholar throughout his or her career. (As noted elsewhere, students in the science fields are commonly asked to submit an original research proposal for their qualifying exam, which then serves as the basis for the dissertation. Ordinarily the science dissertation is a series of papers or write-ups of lab result; it grows directly out of research done in the lab or on the research team.)

The Nature of a Proposal: How a Dissertation Fellowship Proposal Differs from a Dissertation Prospectus

A fellowship proposal is essentially a persuasive argument for why your project deserves to be funded. Most dissertation fellowships — and fellowships in general — involve a highly competitive contest, judged by an anonymous fellowship committee. This is in contrast to a dissertation prospectus, where you are simply asking your own department to decide whether your project is *acceptable* or not; this is normally an easier task, more like “preaching to the converted.” Many departments have their own rules as to what a prospectus

should be — how long, what to include, what format to use, and other requirements — but in general the prospectus is a fairly detailed explanation of your project.

In a fellowship competition you are asking an anonymous fellowship committee to decide that you deserve to *win* and — yes — that someone else deserves to lose. In this situation, it will not do simply to describe a project that is acceptable; instead, you must develop a highly persuasive and polished argument that will convince the reader that your proposed project will make an important contribution to the field, and that it deserves to be funded. The argument should be constructed so carefully that each sentence and each paragraph advances your contribution argument in the most tightly-knit and logically coherent fashion.

Constructing a Polished Argument for How Your Project Will Contribute to the Field: Three Possible Paradigms

Before you can construct a tightly-knit argument, you must first decide what your contribution argument will be. There are three possible paradigms — or three logical possibilities — for defining how a study will contribute to the field (See Appendix A for samples of complete proposals illustrating each paradigm):

Paradigm One: The project is a research topic that never has been done before. Almost by definition it will contribute to the field. The burden in this argument, however, is to show that the topic is indeed significant despite its neglect by scholars. Perhaps it has only recently acquired significance through scholarly developments, or perhaps there are other factors that have been overlooked that explain its importance. The main point in this paradigm is to show that the topic no longer should be neglected.

Sample Argument, Paradigm One:

“While thirteenth-century Venetian art has been studied in depth, the story of the fourteenth century remains to be written. Not only was this a period of extraordinary political and economic expansion and turning westward, but it was also a period matched by artistic transition, moving away from the prevalent use of Byzantine cultural models — once again in the direction of the West.”

Paradigm Two: (This argument is the opposite of Paradigm One.) The project will study well-known material that has been examined many times before, but you are making a reassessment of that material by looking at it in a new way, which will be your contribution. The challenge in this paradigm is to make a strong argument for the need for reassessment without denigrating all previous work. (Your readers may well include an author of one of those previous works.) The wisest approach is to stress that you are adding a new dimension, thanks to the work that has already been done.

Sample Argument, Paradigm Two:

“The rapid turnover in population in nineteenth-century cities and the chaotic ordering of their neighborhoods has led many historians to focus almost exclusively on the social dislocation and uprootedness that they felt urban life brought. This dissertation seeks to re-examine these assumptions . . .”

Paradigm Three: (This argument logically falls between Paradigms One and Two; it is where most research projects fall as well.) In this case, the project will contribute by exposing some new material, which in turn will call for some reassessment of what has already been done.

Sample Argument, Paradigm Three:

“While there have been some studies done on the Alliance’s activities in North Africa, there have been none on its work in the Ottoman Empire where most of its schools were located . . . By studying the activities of an organization which channeled Western values directly to a broad mass of young students, I hope to shed some new light on the process of Westernization at the local level.”

Discussion of the Scholarly Literature and Incorporating It into Your Contribution Argument: Should You Include Footnotes and a Bibliography?

You will note that all three paradigms have the advantage of allowing you to discuss the scholarly literature in the field, which is an essential part of a fellowship proposal. However, they avoid the potential monotony of simply describing a long list of works; instead they make the discussion of literature an integral part of your contribution argument. When you discuss the literature, the general practice is to keep the scholarly apparatus at a minimum within the proposal. Cited works can be presented in abbreviated form — author's last name and date of publication — and placed within the text in parentheses, rather than in footnotes. This is especially recommended when only a brief fellowship statement is required (of no more than six double-spaced pages). The proposal can be accompanied by a bibliography even if one is not required, but it should be limited to *selected works*, presenting only those items that are central to the proposal.

In some competitions, usually when a longer and more elaborate proposal is required (around ten double-spaced pages), you will be expected to have references and a bibliography. Cited works can still be presented in abbreviated form within the text, or you may use footnotes. In either case, this type of proposal should be accompanied by a bibliography. Once again, the bibliography should be limited to selected works that are central to the proposal.

Writing a Concise Introduction to the Proposal

Your contribution argument will have more meaning if the reader first has a grasp of the overall purpose of your project. An ideal way to begin a proposal is with an introductory paragraph that presents a clear and concise statement of the major goals of the project as a whole. If your topic concerns a particular time period and a particular location, this information should be included in the introduction. Similarly, if you are relying on a specific method or a specific kind of data, this too should be specified at the outset. The following are two examples of opening statements, with the first and longer example serving as an introduction to a longer a more complex proposal and research project:

- “The purpose of my proposed research is to explore the transformation of Mexican rural social relations from 1940 to 1958 by examining the increasingly dominant role of business in agriculture. I will focus on the Gulf state of Veracruz, known for a wide range of soils, climates, food crops, and social relations of production, as well as for the strength of its peasant leagues since the 1920's. My preliminary work indicates that the study of business interests and networks is the most effective way of understanding the nature and pace of change in rural social relations in modern Mexico. In this context ‘business’ may be broadly defined as the profit-oriented activities of individuals or companies with an interest in rural production — e.g., machinery, fertilizers, pesticides, seed, credit, and marketing. The main sources for my research would be company and private papers, business publications, local newspapers, community records, government and diplomatic documents, agricultural manuals and other specialized publications, and oral history or field interviews.”
- “I plan to study archival materials in Norway relevant to my doctoral dissertation. I hope to demonstrate through an examination of his personal papers, music, and publications that Grieg developed a unique style of composition based upon a personal aesthetic outlook.”

Significance of the Project in Broader Terms

Another important component of the contribution argument is to explain the significance of the project in broader terms, showing its relation to larger theoretical issues or to the larger scholarly dialogue. Since this is such an important part of the contribution argument, it could be included not only as you present your paradigm, but also later in the proposal, as you make your closing arguments. The following two examples

illustrate the use of broader arguments. Note in both cases, the use of active words, stating the potential significance in terms of expected or predicted outcomes (“The study will contribute . . .” or “must provide a significant test case”):

- “My work on the state of Veracruz, the first properly historical study of Mexican agriculture after 1940, will test the explanatory possibilities of this novel perspective, and will contribute new sources and fresh approaches to the fields of modern agrarian history and rural development.”
- “I could say, then, that my project is justified in that working out the intricacies of the Old Norse verbal system constitutes a formidable intellectual challenge. But I feel that much more is at stake than that. First, if the facts are as intractable as they seem . . . then they must provide a significant test case for the descriptive and explanatory power of current linguistic theory, and bring issues into clear view which have hitherto lurked in the background.”

Feasibility of the Project

The fellowship selection committee will want to know that the project is feasible, as well as of importance to the field. There are a number of important steps or issues to cover in your proposal that would help to assure the feasibility of your project.

Developing Specific Objectives

One essential step is to translate your major goals into a series of well-defined hypotheses or specific objectives, making sure that the specific objectives are a logical outgrowth of the major goals. For each stated major goal, there should be at least one corresponding specific objective. The feasibility argument will be stronger if you avoid having too many objectives or hypotheses — after a certain number of questions the project’s feasibility sounds less convincing. Similarly, it is important to state all of your specific objectives in a single place in an orderly fashion. If they are scattered (and there is a common tendency for writers to pile up new questions on almost every page of a proposal), then it is impossible for the reader to know exactly what is being proposed, and how or why it fits with the major goals or contribution paradigm.

Special Considerations in a Proposal for Research Abroad

- **Question of time required:** Bear in mind that in doing research abroad many tasks are more time-consuming than they might be in a more familiar setting, that access to research materials may have a number of constraints, and also that the unexpected is likely to occur. The fellowship selection committee will be concerned with feasibility in terms of whether or not your research objectives realistically can be accomplished during the fellowship period. Your proposal should indicate that you have done as much preparatory work as possible at home, so that you are ready to make the best use of your time abroad. If your goals in country are part of a broader set of research goals, be sure to explain the overall topic and how your research plans in country fit into the larger dissertation picture.
- **Question of political climate:** The selection committee will also be concerned with feasibility in terms of whether or not the research questions that you have formulated are compatible with the political climate of the country in question. It is important to frame things in a manner that does not offend political sensibilities. The best course is to consult with area specialists who have up-to-the minute information on the present situation and who can give you strategic advice. (More on that in the separate section below.)

Research Design

Closely related to feasibility is the methodology or research design of your project, and especially how closely it mirrors both your major goals and your more specific set of objectives. There is a tendency at times for the methodology discussion to veer off course, so that it does not closely match the stated objectives. (In extreme cases, the methodology discussion sounds like the introduction of a completely different project.) It is important to keep checking back to your stated goals, making adjustments as necessary, so that the WHAT you are doing and HOW you are doing it are perfectly matched. Once you have ascertained that your methodology and objectives are a perfect fit, the methodology discussion should include the following:

- Overall plan and why it has been adopted — once again, with an emphasis on how closely it reflects the stated major and specific objectives (your method may be comparative, longitudinal, qualitative, quantitative, participant observer, sample survey, a case study, an experiment, or some combination of these methods).
- Type of data to be used
- How data will be collected
- How data will be analyzed
- Timetable for implementation
- Available resources for implementation

Candidate's Relevant Background or Qualifications: The Biographical Essay or Fellowship Curriculum Vitae

Often the application includes instructions for discussing the applicant's qualifications as part of the proposal, or there is a separate essay question asking for relevant personal background, or a curriculum vitae is required. If there are no specific questions or requirements, it is nevertheless important to include some of your strongest qualifications or preparation for the project in the proposal itself, once you have described the project. This discussion also gives you the opportunity to convey a sense of your commitment and enthusiasm for the project. (Conveying your own enthusiasm may well generate a corresponding enthusiasm from the reader.) If there are no instructions, the following items should be addressed:

- How the project fits in with your long-term career goals
- Special background or skills or preparatory work for the project (languages or other skills mastered, prior fieldwork or research related to topic, etc.)
- Any other evidence of your promise to carry out the project successfully.

Some applications ask for a c.v. or seek a more extended biographical essay — for example, the Fulbright Institute of International Education application includes a c.v. in essay form that asks for such personal history as family background, intellectual influences, enriching experiences and how they have affected you. Whether it is a standard c.v. or a biographical essay, it is important to be selective and to present those aspects of your background that emphasize how well qualified and well suited you are for the particular fellowship. The essay is not the occasion to “tell the story of your life.” A good idea in preparing to write the essay or c.v. is to make a list in hierarchic order of what you think are your most outstanding qualifications and then

work them into a personal essay or a c.v. In organizing a c.v. it is common to list things in reverse chronological order, since your most impressive qualifications or experiences are probably your most recent ones. For the same reasons you might even want to organize your biographical essay in that fashion: you need not start from the beginning—it is possible to work backwards. (Samples of fellowship c.v.s, as well as biographical essays for fellowship purposes appear in Appendix B; job application c.v.s will be discussed in chapter six, and samples appear in Appendix D.)

How and When to Include Background Information of a More Personal Nature: Childbirth, or Other Circumstances, Such as Illness, That Have Affected Your Work

If some event or circumstance in your personal life has visibly affected the progress of your work, you might want to address that issue directly, rather than leaving it to the reader to speculate. One possibility is to ask a recommender to mention it, or you could bring it up yourself. Should you choose the latter, my main suggestion is to keep a clear line of separation between the proposal, which should focus exclusively on explaining the merits of your project, and your inclusion of personal information. You could accomplish this separation between the professional and the personal, either by adding a brief cover note, or by adding at the end of your proposal a transitional sentence that indicates you are shifting gears, such as: "On a more personal note . . ." Whichever you choose, you should try to emphasize that you are now basically back on track, and in fact have acquired considerable expertise at time management, now that it is such a compelling issue.

Who Serves on Fellowship Selection Committees—Will Your Proposal Be Read by Specialists in the Field, or by Generalists?

Most people want to know the answer to this question so that they can address their proposal to the appropriate audience. The problem is that even in competitions that are judged by people in your own discipline, you cannot or should not assume that they are fully knowledgeable about your own specialized topic. Indeed, even specialists need convincing, and may in fact view your proposal with a more critical eye. The safest course is to provide enough background in making your contribution argument, so that both generalists and specialists will view the background as a necessary and logical part of your contribution argument. It is also wise to avoid jargon or un-necessary technical terms.

Paying Attention to Fellowship Descriptions; Adapting the Proposal When Applying for Several Fellowships

It is wise to apply for as many fellowships as possible, as long as they are appropriate for your project. Most fellowship announcements include a description of the fellowship, stating selection criteria and providing some details about the type of projects that the granting agency seeks to support. You may find that there are a number of fellowships, which are appropriate for your project, but that the fellowship descriptions vary, both in large and small details. While it is important to pay close attention to the wording in the individual fellowship announcements, it is also important to write a fellowship proposal that presents the most persuasive and logical argument in support of your project, following the principles outlined above. How can you write a proposal that does both?

We would suggest that you first construct a "generic" proposal that presents your project in the strongest light. You can then adapt it, if necessary, to create individual versions that match individual fellowship announcements as closely as possible. This process involves, above all, careful choice of wording in order to incorporate key terminology from individual fellowship announcements. In some cases, it may also involve adding paragraphs that address specific questions asked by individual granting agencies.

Most projects can be described with a subtly different choice of wording, without distorting the true nature of

the project, and without disrupting the basic logic of the contribution argument. The main point is to get your arguments in place. Once that is done, then any tinkering with surface details will not weaken the basic structure of your arguments, which is ultimately what counts.

Writing an Abstract or Summary of the Proposal

In addition to the proposal itself, many fellowship competitions also require a brief abstract or summary of the proposal. It varies in length — ranging between 150 and 500 words. Most federal agencies require 200 or 250 words.

Although the abstract appears at the beginning of the proposal, it should be written last, after you have constructed your basic arguments. The abstract should consist of the most salient points in your proposal, linked with transitional sentences as necessary. You do not have to worry at all if your abstract contains repetitions from your main proposal. The abstract is intended to give a brief picture of what is in your proposal; it is not supposed to give an alternative picture. It is important to prepare the abstract carefully, since it is usually the first part that is read — and may be the only part read by some reviewers. (That is another reason why you would want to use in your abstract some of the most polished and carefully worded passages from your main proposal.) In addition, the abstract, along with the title, may be used in the various national computerized information systems, so major reference terms should appear in the abstract.

The following items should be included in the abstract, and can also serve as a checklist, to see that the essentials have been covered in the proposal:

- A concise statement of the purpose of the project (much can be drawn from your introduction)
- Reference to the major literature in relation to the basic paradigm of how the project will contribute to the field
- Significance of the project in broader terms
- Objectives and research design — no more than a brief outline
- Personal background of relevance

Writing a Budget

In some fellowships competitions, you will be required to include a budget. This can be thought of as a representation of the project expressed in dollar amounts of estimated expenses. Some government funding agencies have their own budget forms; most foundations do not. In addition to the budget itself, you may want to attach budget-explanation notes. The following are major budget categories for most research projects:

- Personnel costs — technical assistants, translators, etc.
- Travel
- Subsistence or *per diem* — housing and food
- Supplies and equipment — paper, tapes, notebooks, film, etc.
- Printing, postage

The Final Draft

When you have a draft completed, it is important to seek the advice of faculty advisors and colleagues in the field. Advice is also available from the GSAS director of fellowships (Holyoke Center, third floor, (617) 495-1816). When the time comes for seeking letters of recommendation — most competitions require two or three letters — you should be prepared to show the recommenders a fairly polished draft of the proposal.

Acquiring Letters of Recommendation in Support of the Fellowship Application

A good letter of recommendation not only makes a statement of support about a candidate, but also presents a well-documented and informative evaluation. It also addresses the specific purpose for which it is written. When you seek letters of recommendation for a fellowship application, be sure to provide the letter writers with a close to final draft of the proposal and any other items that might prove helpful — for example, a curriculum vitae or a copy of the fellowship announcement.

Preparing to Conduct Research Abroad

Fortunately, most of the steps or qualifications needed for the effective implementation of research abroad are the same as those for becoming a strong applicant for a traveling fellowship in the first place: thorough knowledge of the country and its culture, the necessary language skills for conducting research, familiarity with the archival holdings or other forms of data that will be required for your project, as well as having feasible research goals. The following are further considerations or steps that will enhance the research experience abroad:

- **Attitudes and sensitivities that can make a difference:** One attitude that can greatly enhance your research experience abroad is to have a flexible mind set, a readiness to expect the unexpected and to take everything in stride. One speaker at a recent panel went further and suggested taking a creative and even playful approach to the many surprises that are likely to come your way.
- Still another helpful attitude is to recognize that when you go abroad you represent the country and/or institution that sponsors you. The Fulbright and other similar programs make US citizenship a requirement, and consider the program participants as playing an ambassadorial role. However, at a recent panel a speaker gently reminded the students that many who go abroad to do research are, like him, non-US citizens. Research universities are increasingly international communities. The issue of representation and identity is thus a complicated one: The best attitude, regardless of citizenship, is to be sensitive to cultural differences and to try to imagine how others may view you and how they may view the research that you seek to do. There are, in addition, some crucial steps that will further facilitate doing research abroad.
- **Procuring a research affiliation or making scholarly research contacts:** For some fellowships a research affiliation is a requirement, and in some cases, the granting agency actually arranges this. But even if an affiliation is not required, it has proven to be so helpful both in making a stronger application and in implementing a research project abroad, that all candidates are urged to start as early as possible in the application process to procure affiliation or at least scholarly research contacts in country. Once you do so, it is important to obtain in writing an invitation or an agreement for scholarly affiliation or participation and to include this invitation as part of your fellowship application even if it is not a requirement. Students often ask how they can go about making these contacts, which leads to the next step.

- **Utilizing the rich resources at Harvard, including the various area research centers and Harvard faculty members who specialize in areas of the world, as well as the many visiting scholars who come from abroad and then return to their own universities:** All of these people are in an ideal position to help arrange an affiliation or to put you in touch with someone who can do so. Students who are specializing in an area, almost by definition, are already working with Harvard scholars who can help with such arrangements, but all students planning research abroad should treat this as an essential step while they are still on campus and still in the application stage, doing so as early as possible. Be sure to make it clear in your communication with scholars abroad that you are not asking for funding, but simply an affiliation or opportunity to participate in scholarly discussions.
- **Procuring research permits and visas, as required:** Here again, students often ask how. Once again, the best course is to consult with those who have recently gone through the permission process for the country that is your destination – either students or faculty. Some fellowships make the necessary arrangements for their fellowship recipients; others do not. Be aware that these steps take time and that you should begin them as early as possible. In most cases, however, and especially in countries that have particularly intrusive bureaucracies, it is impossible to begin the permission process until you have been granted funding and can seek permission under the auspices of a particular granting agency — the Fulbright Program, for example, or other sponsors of fieldwork abroad. So all you can do is wait until the award is official and then proceed immediately in making the necessary arrangements. A striking example of practical advice given by someone who had recently gone through the permission process for a particularly difficult country was that it was easier to go to New York for the necessary advance paper work, since the Boston office was impossible in its dealings with people! Another crucial step when you get to country —often a requirement – is to touch base with the American embassy or consulate.
- **Getting a thorough up-to-the minute briefing on political conditions in country:** Conditions change so quickly that last year's information, or even last month's or last week's, might be out-dated. So be sure to use the rich array of research scholars on the Harvard campus and to get a thorough briefing on the current situation. If the political climate in a country is particularly volatile, extra precautions are needed. One area specialist on China, for example, recommends that you write out a summary of your research issues in the country language, being completely forthcoming about the topics of your inquiry, and present them to your potential informant before you ask for a commitment. This will allow the person to evaluate potential risk. Maintaining the anonymity of the informant is essential in writing up research once the interview is conducted.
- **Some smaller details that can make your life in country more comfortable and productive:** One of the best suggestions for productivity came from a student who not only kept in close touch with her dissertation advisor while in the field, but actually used each progress report to the advisor as an embryonic version of a dissertation chapter. In this manner, she had already started writing her dissertation before she had returned home. Another valuable suggestion for those doing fieldwork is to be sure to take thorough field notes that are legible, especially in contexts where it is not possible to use a tape recorder or a laptop. A number of miscellaneous suggestions as to what to bring along when doing research abroad include the following possibilities: copies of journal articles that would be of interest to particular scholars whom you plan to contact; Harvard Dean's letter attesting to your status; letters of introduction from professors that would help you gain access to libraries or collections or other scholarly resources; Harvard fellowship applications for the following year. These are only some possibilities. As you can see from these ideas, people are more than willing to share what they have learned from their research experience abroad. So be sure to take advantage and learn as much as you can about the current situation.

Project Review for Research on Human Subjects

Research projects that deal with human subjects, where there might be even a slight element of risk to the subjects, must be reviewed by Harvard's Committee on the Use of Human Subjects, the Faculty's Institutional Review Board (IRB). The review procedure is kept fairly simple and swift in borderline cases, which would probably apply to most student projects. Information about the committee, its fairly broad definition of "risk," its meeting schedules, and the committee application form can be found on the Web at <http://www.fas.harvard.edu/~research> by following the link on the use of human subjects.

Some Basics on Taxes and Fellowships

The information here is only of a general nature; students should seek professional advice from a qualified accountant or attorney if complicated tax situations are involved. (Harvard representatives are not permitted to give individual tax advice.) Generally, most students must file a U.S. return (i.e., their gross income generally meets the specified minimum). Note: The income tax obligations of foreign students differ from those of U.S. citizens and residents; foreign students should contact the Harvard International Office for further information.

The U.S. tax laws divide fellowships to degree candidates into two parts: a) a nontaxable part, which are those amounts used under the terms of the grant to pay for tuition and fees required for enrollment, or for fees, books, supplies, and equipment *required for your courses*; b) a part that is considered taxable income, which is any additional amount of the fellowship, such as a stipend for room and board or for travel expenses. Note: An IRS publication on Scholarships and Fellowships explains how these items should be reported on your tax form. You should retain any receipts necessary to support your reporting position. Also note: If any portion of your grant represents a payment for teaching, research or other services, that portion will be taxable even if all degree candidates are required to perform such services. This is the case for Teaching Fellows and Research Assistants, who will receive Forms W-2 reflecting the amounts paid as compensation, and will generally have amounts withheld for state and federal income tax purposes.

Federal tax forms can be obtained at the IRS offices in the JFK Federal Building at the Government Center in Boston or by calling 1-800-TAX-FORM. State tax forms can be obtained at the Massachusetts Department of Revenue. The post office also carries the forms during the tax season. A final note: Tax laws can change; be sure to bring yourself up-to-date when filing your income tax returns.

On Fellowship Outcomes: An Important Message

It is important to realize that the line between winner and non-winner in a fellowship competition is often very thin. So the primary message for those who did not receive a fellowship is that there is absolutely no reason to doubt your abilities, no reason for a sense of failure. As an applicant, you have been part of a distinguished group of graduate students, and you have reason to be proud of the efforts that you have made.

Above all, you should not give up — keep working on your project and your proposal, and try again in the next round of fellowship competitions. For most fellowships, it in no way counts against you to be applying for a second time. With further progress on your project, your proposal should improve, and your chances of winning next time should be considerably improved as well — just be sure that you do submit a new proposal. (You may also want to see if the fellowship sponsors will provide you with feedback from their readers; some make this a practice, but others do not.) **MANY STUDENTS DO WIN ON A SECOND TRY.**

SAMPLES OF WINNING FELLOWSHIP PROPOSALS

PREDISSERTATION FELLOWSHIP PROPOSALS

The fellowships in the pre-dissertation category are intended for students at or near the beginning of their graduate study. Most have the stipulation that first-year graduate students are eligible to apply as long as they have not completed more than twenty semester hours, with some allowing thirty semester hours of study following the baccalaureate degree at the time of application. (NSF in fact allows second-year graduate students to apply.) The essays by Ralph Waverly are for the NSF Graduate Research Fellowship Program. They include a Proposed Plan of Research and an essay on Previous Research Experience. Note that the essay on personal experiences and potential contribution was formerly two separate essays. For an example of a Proposed Plan of Research in developmental biology see the essay by Simon Graff.

The next two examples of pre-dissertation research proposals were written by first-year graduate students applying for the Jacob K. Javits Fellowship Program. The instructions they were given were the following: "Describe your proposed plan of study and/or research for the period covered by this fellowship. Explain how your intellectual interests and proposed studies will enable you to achieve your professional objectives. Please limit your statement to this page (front and back if necessary). Please type your proposal."

Proposed Plan of Research – Ralph Waverly¹

In the last several years I have developed two main areas of focus: I am interested in the history of scientific diagrams (including maps) as a combination of the history of visualization and theories of representation, as well as in the more physical spaces of science, including natural history museums, hospitals, and laboratories. Since the last years of my undergraduate degree at Rice, I have been interested in the intersections of science and architecture. I completed my BA in two major fields – architecture and civil engineering – and thus have a firm background in both the humanities and the natural sciences. Outside of school, I gained experience in both architecture and experimental physics. At no time did I try to separate my practical training in either field from my more scholarly interests in their overlap, and I have continued this inter-disciplinary interest by constructing a dual PhD program at Harvard, enrolling in both the History of Science and History of Architecture & Urban Planning programs. (I will fulfill the course and general examination requirements of both departments, and write one dissertation. My committee will include professors from both fields.)

One topic that particularly interests me is the development of American laboratories in the late nineteenth and twentieth centuries. Laboratories have existed in several contexts – from the work of individual inventors and corporate R&D to academic departments and governmental agencies – and their design has shown several changing influences, including industrial factories, high modernism, traditional campus planning, and even New Urbanism. I am interested in who or what has been responsible for the changing idea of what a laboratory should be: To what extent has laboratory design been aligned with the changing needs of science? How have laboratories influenced what it means to do scientific work and the persona of the scientist? How has their design been determined by changes in institutional and financial support? Have architects' ideas had a demonstrable impact on how scientists view their own work? These questions have no straightforward answers, and one of the goals of my work would be to investigate the overlaps and dialogues that challenge the assumptions of any purely scientific or architectural history.

I have already looked at a specific case in some depth: the design of the new laboratories for the National Bureau of Standards in the mid-1960s. Here neither the Bureau's decision to move to a new laboratory complex nor the specific design of the new buildings can be seen as the product of any one set of decisions. Changing management practices, huge increases in funds and personnel, national policies of industrial dispersion, and the specifically architectural ideas of the laboratory designers all combined in the eventual campus in suburban Maryland. The history of the NBS labs does not lend itself to any kind of internalist history (either scientific or architectural), and I thus became interested in the idea of a larger postwar military-industrial-corporate-academic complex – where “complex” is understood as both an institutional association and a physical place. Not only were the physical sciences expanding and becoming more connected with military funding sources like the Atomic Energy Commission or the Office of Naval Research, but the same architectural firms were designing similar laboratories for corporations, universities, and governmental agencies – I am particularly interested in the work of large firms like Voorhees Walker Foley & Smith or Skidmore Owings & Merrill.

My larger project would continue these kinds of questions, but expand them to include other important moments. In the late nineteenth century, the relationship between the first corporate labs and the development of national systems of standards seems especially important, as does the marriage between the German idea of the research university and the specifically American tradition of campus planning. In the twentieth century, I want to investigate the appropriateness of an idea like the military-industrial-corporate-academic complex, and explore the connections between funding, scientific pedagogy, specific architectural firms, and the various sites of scientific work. I am also interested in how the fragmentation of science in the 1970s and

¹ Note how this candidate is prepared to give considerable detail on one principal project, where he has already done some research, but also keeps the door open to a larger project and additional research questions of interest to him.

1980s is related to an architectural disenchantment with large-scale modernist planning.

Other scholars have approached the question of the laboratory, and my own project would build on this existing work. There is a rich literature in the history of science on experimental practice and the rise of laboratory authority from the seventeenth to the twentieth century. There have also been several studies of the laboratory design of famous architects like Robert Venturi, Eero Saarinen, or Louis Kahn, by both historians of science and of architecture. Detailed histories of specific laboratories, such as the Lawrence Berkeley Lab or the German Physikalisch-Technische Reichsanstalt, will also be important as models of institutional history. Yet almost all of this work has been situated either within either the history of science or the history of architecture, and has thus been divided in both focus and method. Since my goal is to bridge between architectural and scientific histories, my dissertation would involve a great deal of new archival research.

I would mainly use two types of archives: those of individual laboratories or institutions (both governmental and academic), and those of architectural firms who have worked on laboratory design. I will look for planning documents, correspondence between scientists and architects, and architectural drawings showing the evolution of design ideas. Announcements and reviews in the journals of both the scientific and architectural community will also be important. In analyzing these sources, I would use both techniques of textual analysis and the formal analysis used by historians of architecture and urban planning; an important part of my training has been learning to read drawings and photographs for the ideas and arguments they contain. My view of the laboratory as a joint project of both scientists and architects will impact my methodology – both texts and drawings will be important. This dual focus will be vital to understanding the military-industrial-corporate-academic complex as something more than simply a first-order effect of increased military funding: engaging different kinds of archives and types of sources will enable me to understand laboratory history as a larger cultural development with roots in several traditions, and I will be able to trace the consequences of its design into wider social contexts.

**Personal, Professional, or Educational Experiences as Preparation for Advanced Scientific Study;
Broader Impacts on Society, Such as Encouraging Diversity, Reaching a Broader Audience, etc.**

(formerly 2 separate questions, now combined as single essay)

Ralph Waverly

The most important influence on my decision to pursue scholarly work has been my professors. Several professors at Rice helped me refine my interests and focus my life goals, and since coming to Harvard the faculty have provided me with renewed motivation and a model for innovative scholarship. Both as an undergraduate double-majoring in architecture and civil engineering, and now as a graduate student dually enrolled in History of Science and History of Architecture & Urban Planning programs, my education has allowed me to take cross- and inter-disciplinary interests seriously and to look for non-trivial intersections between different intellectual traditions. And just as my own interests have been shaped by influences from several fields, I have learned how to view these fields (namely physics, engineering, and architecture) as internally diverse and mutually interacting, both in their everyday practices and in their use of metaphor.

At Rice, two professors were especially influential. Sanford Kwinter – whose work deals with architects’ use of scientific concepts, especially complexity theory and theoretical biology – introduced me to a wide range of scientific thought and the philosophy of science, and taught me how to interrogate design as a form of intellectual production. Conversely, Nana Last – who does similar boundary-crossing work between architecture, art, and philosophy (such as Wittgenstein’s design of his own house) – was greatly influential in showing me how architectural thought could lead to a serious study of things like scientific representation. It was in her class on the idea of measurement within architecture that I first became interested both in scientific diagrams and in the National Bureau of Standards. Between governmental science, architects’ ideas, and construction practice lay institutional and cultural contexts: I began to see ideas as embedded in multiple locations and specific institutions. Professors Kwinter and Last acted as two intellectual poles: the one provoking my interest in metaphor and the history of ideas, the other challenging me to situate those interests in design practices, institutions, and social contexts.

These cross-disciplinary interests were also stimulated in my professional experiences. Whether working as an intern for an innovative design firm in Los Angeles (Eric Owen Moss Architects) or as an architect for the well-known firm of Venturi, Scott Brown, and Associates (whose principals have all published influential books), I have been able to pursue my interest in how design fits within larger intellectual and social contexts. For example, working on designs for a laboratory complex at the University of Michigan, I encountered the interplay between the internal tradition of design and the need to satisfy specific programmatic requirements. Likewise, in my work at Caltech and MIT for the Laser Interferometer Gravity-Wave Observatory, I worked on both the physical and numeric sides of experiment, and saw how cosmology, control-system design, error analysis, and mechanical engineering all fit together as part of physics. In both disciplines, I also became interested in day-to-day material conditions: the intellectual work of physics or design was always in dialogue with the need to fabricate parts with a milling machine or make intelligible drawings for use on a construction site.

Since coming to Harvard, I have been influenced by a different pair of professors: my advisors Peter Galison and Antoine Picon. Professor Galison’s interests in the social and cultural embeddedness of physics, including its architecture, have been complemented by Professor Picon’s work on the social milieu of architects and engineers. Even though one looks from the point of view of science, and the other from the point of view of architecture and engineering, both have influenced my interest in institutions and the relationship between a given cultural context and the changing personae of scientists, architects, and engineers. Both have emphasized the importance of rigorous archival work, and led me to ground my inter-disciplinary interests in a common historical methodology.

My work will benefit society by showing how science and architecture have influenced each other; it will engage broad cultural themes that are relevant to a wide audience. My two main areas of interest – the history of laboratories, and the history of scientific diagrams, maps, and visualization – are an important part of the day-to-day practices of both science and design, and by presenting these topics as relevant to both disciplines I will show how each has influenced a larger history. For instance, several of the questions that interest me in the history of laboratories will reach beyond the immediate topic of my work: How did science come to require its own specially designed space? How has the physical location of scientists been related to their place in society? What role has laboratory design played in the relationship between science and war? Although the fields of the history of science and the history of architecture & urban planning have tried to address these kinds of themes, they have often been blind to the particular strengths of the other's historiography. A full understanding of "laboratory life" and its broader connections can only come with a deep understanding of both of the disciplines that lay claim to its development.

Beyond the specific example of laboratories, science and architecture have also played important roles in a broader social history of the last two hundred years. In the case of science, the transformation of natural philosophy into professionalized physics in the nineteenth century went hand-in-hand with the development of industry, international standardization, and the technologization of daily life. In architecture, the late eighteenth-century coupling of design, industry, and social reform began a tradition of seeing the design of the built environment as an intervention in society itself, both in urban planning and in individual buildings. By the end of World War II, nearly every important scientific or cultural space had become part of a larger discussion on the goals and structure of society as a whole. Yet the individual stories of science or design have obscured the ways in which they have interacted. One of the benefits of my inter-disciplinary point of view is that it can engage topics that have been peripheral to either science or architecture, yet are important as larger cultural forms – such as the relationship between statistical mapping and governmental planning, or the social nature of scientific work and its relationship to the image of the scientist (or architect) as a lone genius.

This kind of work is thus by its very nature non-hermetic: it will introduce scientific and technical understanding into new contexts and to new readers. Within academia, it will be relevant not only to professional historians of science or architecture, but also to historians in other fields, such as geography or American history. It will also engage a wider audience of practicing scientists and architects who want to understand how the historical development of their own profession has been related to other traditions; in the case of laboratories, it may also help collaboration between scientists and architects in the design of new lab buildings. Finally, general readers have shown an abiding interest in both science and architecture, and my work will provide an accessible account of both fields' influence in society. My research will deepen the public understanding of science, thus helping to interest people of diverse cultural backgrounds in pursuing careers in scientific disciplines.

My larger project is also by nature a marriage of research and education: I hope to pursue a career in academia, and I will develop my research within a pedagogical context and have it become an important part of my own teaching. This work would be equally appropriate in a department of History, History of Science, or History of Architecture – my specific project could act as a complement to the core teaching competency I will receive in these fields. My work will also engage the relationship of research and education as a historical question: both laboratories and scientific diagrams were important within the nineteenth-century research university, and both remain indispensable to modern scientific pedagogy.

Previous Research Experience – Ralph Waverly

In my undergraduate education, I received a firm grounding in both the liberal arts and the natural sciences, and was exposed to a variety of research methods. As a double-major in architecture and civil engineering, I was trained in both humanistic and technical modes of argumentation: I wrote several papers in history, art history, music history, and anthropology using close textual readings (in topics from the history of early modern cartography to radical French architectural movements of the 1960s), but also did technical research – such as an environmental audit of Habitat for Humanity and a literature review on the material properties of anodized aluminum. In these projects I learned to engage a body of literature and situate my own argument within it; I learned how to use different kinds of sources and how different disciplines make claims to proof.

Outside of school, I worked in both architecture and experimental physics, and gained a broad exposure to the practical, workaday research problems of these fields. This work was always collaborative, and involved changing roles and multiple competencies: I helped design a biological laboratory complex for the University of Michigan (with Venturi, Scott Brown, and Associates), and worked on thermal and seismic noise problems for the gravity-wave observatory at Caltech and MIT. (References to this work are below.) In many respects these professional research experiences informed the types of problems I have pursued in my individual scholarly work – I learned the importance of the processes (physical, intellectual, and institutional) behind published papers, and became interested in the way that different discourses can intersect even within a supposedly pure disciplinary problem.

My largest research project as an undergraduate at Rice was an analysis of the relationship between sound-reproduction technology and art music. (Publication information below.) It was both a history of musical technologies – in the use of such devices as the theremin, dynamophone, and magnetic tape by musicians like Pierre Schaffer and Karlheinz Stockhausen – and an exploration of musicians’ attitudes toward this “electronic music” and its implications for the repeatability and perfectibility of aural experience. By looking at the theoretical underpinnings of musicians’ use of technology and their relationship to theories of language and scientific studies of aurality (specifically, the Swedish school of Biomusicology), I argued that the continued marginalization of electronic music within mainline art music should be seen as a conflict between a semiotic understanding of sound and a more essentialist-materialist one. These two ontologies – the repeatable, signifying *objets sonores* of early tape music and the unrepeatable, immanent biomusicological impression implied in most “live” music – have developed in parallel for the last eighty years with little reconciliation, despite art music’s increasing use of technology for non-artistic ends. For this project, I used a variety of sources, from patents and musicians’ essays to historical philosophy and close listenings of electronic music.

I have continued this kind of multimodal work at Harvard, while becoming more firmly grounded in archival and historical methodology. During the past year I have taken methodological seminars in both History of Science and History of Architecture, and Harvard’s extensive library system has allowed me to become skilled at in-depth primary-source research, both in scientific and design archives. As indicated in my proposed research essay, I have been developing two main areas of interest: the development of technoscientific representation (such as maps, diagrams, and engineering drawings), and the history of laboratory design.

For the first, I have written a paper on the development of noise maps – maps which represent a sound environment (for example, around airports) as a single, mappable metric. Here I argued that various methods of representing noise are deeply embedded within specific regulatory and institutional contexts. Thus the lack of mapping in the city noise survey of New York in the 1930s is not evidence of a lack of representational sophistication, but becomes a logical part of middle-class activists’ drive to enact local anti-noise ordinances – a noise map showing aggregate, time-averaged data would be irrelevant for controlling individual noise

offences. In contrast, the extensive use of mapping in the 1960s and 1970s by the FAA makes sense as part of that agency's mandate to regulate at the scale of the country's entire air transport system and with regard to the needs of industry. I have also traced the development of measurement techniques and metrics, and shown how the seemingly transparent choice of units is also deeply tied to modes of representation and regulation. Thus despite the scientific debate over sound metrology from the 1930s to the 1970s, units were not standardized until the involvement of large governmental agencies using bureaucratic (rather than scientific) decision-making. I have been interested in how self-evident end results – maps, or dB(A) units – are tied up in larger institutional processes, and how regulatory decisions can have wide-ranging effects in urban planning, acoustic engineering, and sound metrology. I have submitted a version of this paper to a conference on architecture and science.

The second project has developed as a close look at the laboratory design of the US National Bureau of Standards from the 1940s to the late 1960s. (I present the larger scope of this project in my Proposed Research essay). And here again I have looked at how parallel narratives can intersect, relating the changes in NBS management structure in the mid-1960s to the agency's move from a site of individual buildings in Washington DC to an integrated campus in suburban Maryland. This move, besides fitting in with a national initiative to disperse key industries and agencies away from potential nuclear targets, also represented a shift towards the architectural design ideas of corporate research labs. The architectural firm used by NBS was responsible for many university research facilities and key corporate labs (such as Bell Labs and GE), and this firm developed a single design approach for all these projects, emphasizing the flexibility and expansibility of modular planning. These design ideas went hand in hand with the Bureau's new multi-tiered "matrix management" structure: both emphasized rapidity of change and the breaking down of disciplinary boundaries. This project still seems quite fertile, and I am making arrangements to visit both the NBS and National archives in Maryland.

Beyond these two larger projects, I have done research on a wide range of topics. For example, I have written seminar papers on the role of popular science books within scientific communities, the history of American urban development and professional planning in the nineteenth century, and the relationship between green architecture, the Green Party, and their common roots in the Alternative Technology movement of the 1960s and 1970s. And while my interests have been largely focused on topics in the United States, my reading knowledge of both French and German has allowed me to engage a larger circle of secondary sources – for example, there is a rich historiography in French on the development of statistical mapping. This is typical of my research experience: I have become adept at engaging various literatures and different kinds of sources, and using them to make well-grounded historical arguments.

Published Original Work:

"The Reification of Sound: Recording Technology and the Changing Ontology of Music," in *Trans: A Journal for New Music*, issue #1 (fall 2002).

Acknowledged Contributions to Others' Work:

P. Willems, V. Sannibale, V. Mitrofanov, and J. Weel, "Investigations of the dynamics and mechanical dissipation of a fused silica suspension," in *Physics Letters A* Vol. 297, No. 1-2 (6 May 2002): 37-48.

David Brownlee, David De Long, and Kathryn Heisinger, *Out of the Ordinary: The Architecture & Design of Robert Venturi, Denise Scott Brown, & Associates* (Philadelphia: Philadelphia Museum of Art, 2001).

Progressive Architecture Citation for Eric Moss's "The Spa" in *Architecture* 89 (April 2000): 132-133.