APPLYING FOR A POSTDOCTORAL POSITION IN THE SCIENCES

The postdoctoral position in the sciences and the process of applying has some distinctive features that set them apart from the humanities and social sciences:

1. First and foremost, in the sciences a postdoctoral position is typically the first step on the academic ladder; it is not just an option, it is almost an essential step, perhaps like a rite de passage. In the humanities and social sciences, on the other hand, there are fewer postdoctoral opportunities (although growing in number in recent years), and candidates are likely to apply for them while also going on the academic job market; it is simply another option, a supplement that expands possibilities for gaining a first position.

2. Another important difference is that in the sciences many postdoctoral positions are obtained through networking and an informal market, rather than through a formal posting and application process, which is more typical for postdoctoral positions in the humanities and social sciences — although also true for some positions in the sciences. Candidates in the sciences thus need to learn how to deal with the informal postdoctoral market if they are to land a position, and this means following a number of steps, as outlined below (see as well the following summary of a panel discussion on this topic):

   - The first obvious step in the informal networking process is to discuss your interests and goals with your lab director and other dissertation advisors, and to get a sense of how much they are prepared to do in helping you to find a position.

   - In theory, this might be the first and last step: your lab director picks up the phone and arranges a position for you at the lab of your choice. Many students, however, find that even the most conscientious lab directors and advisors may disengage once they see the training process coming to an end; or, if they don’t disengage, they simply don’t have the connections or influence that you hoped they might have. They may make a few suggestions, but are not prepared to do much more.

   - Because of the uneven nature of the kind of help you can expect in the networking process, it is important for you to swing into the active mode as early as possible; it may encourage your advisors to become more active as well if they see that you are doing the following:

     a. Expand the list that your advisors may have given you by identifying the labs that are of particular interest to you (students tend in any case to be aware of the relevant research in their fields or in fields to which they plan to switch).

     b. Prepare a resume that highlights the relevant research you have done, the fellowships you have won, as well as any publications or other forms of professional activity (see below for choice of resume format and samples at the end of this chapter).

     c. Draft a cover letter that conveys your interests and your qualifications; the unsolicited letter of inquiry is similar to a cover letter for a posted opening in some respects, except that you are asking if there might be a given position for someone with your skills and qualifications; it is even more important to find out about the research lab, since you are essentially proposing how you can be of
use to them and how your qualifications would best suit their needs. (See the end of this chapter for sample letters of inquiry).

d. The remaining steps are similar for any academic job application, and have been discussed in detail in the preceding chapter. In addition, see the panel discussion summary below for further details on the postdoctoral process.

3. Another important difference is that while many postdoctoral positions in the sciences come with a stipend, and are like a “salaried” position, many positions are offered with completely variable guarantees of funding (depending on whether the Principal Investigator or PI has funding or where they are in the grant cycle). The most common scenario is that you get accepted into a lab with “some” guarantee of funding (perhaps 1 year), and then you are expected to apply for postdoctoral fellowships. It is thus highly probable that you will be applying for postdoctoral positions as one process, and applying for funding as a separate process, with close timing between the two. The following are important factors to keep in mind in applying for postdoctoral fellowships (I am grateful to Penny Beuning, Postdoctoral Fellow at MIT for these insights):

- Some of the big fellowship programs have one, two, or three deadlines throughout the year, so you can apply fairly promptly after getting into a lab.

- For most of the fellowships, you are expected to propose work you are going to do in a specific lab with a specific PI. The PI also writes a letter of support, so that has to be lined up at the time of application. Most postdoctoral fellowships are not very portable, although if a change is desirable and everyone involved agrees to the change, you can appeal to the granting agency. Most fellowships provide three years of funding.

- Many postdoctoral fellowships are aimed at recent PhDs, and only allow you to apply for a fellowship within a restricted time limit after receiving the PHD.

- For non-US citizens there are few funding opportunities. PIs know this, and still take international postdocs.

4. Postdoctoral positions, especially in the sciences, but in other fields as well, can occur in a variety of settings, both academic and nonacademic: universities, medical schools, teaching hospitals, government laboratories, private nonprofit research institutes, and private corporate settings as well; be sure to consult the online guide, *The Harvard Guide to Postdoctoral Fellowships*, available at www.gsas.harvard.edu/current_students/the_harvard_guide_to_postdoctoral_fellowships_2.php. In addition, the professional association in your field will list postdoctoral opportunities, especially newly created fellowships.

5. Finally, as noted above, in Chapter V on grantsmanship, the GSAS Fellowships Office provides a range of services to assist with fellowships, including individual counseling on your proposal.

**PANEL DISCUSSION: LANDING YOUR FIRST POSTDOC IN THE LIFE SCIENCES**

The speakers, Fred Winston, Professor of Genetics, and Shannon Turley, Assistant Professor of Pathology, both on the Harvard Medical School Faculty, were able to discuss the application process from having gone through the process themselves and now from the perspective as lab directors choosing among applicants. A number of salient points emerged from the combined talks:
The informal nature of the process of landing a postdoctoral position, involving the following steps and considerations:

- The candidate compiles a list of labs that would be of interest, relying heavily on the dissertation advisor for suggestions, but also doing thorough investigation via the internet of research activities and principal investigators at various labs. (For further discussion of the important role of the dissertation advisor and the mentoring process, see the relevant sections above, in Chapter Two.)

- The candidate then writes an informal letter of inquiry, which can be done via email, attaching a resume, as well as a list of recommenders and contact information. Some postdoctoral openings are posted in bulletins of the professional association, but the informal process is paramount.

- Some candidates are looking for a lab that will allow them to continue along their current lines of research, but many others are seeking to shift fields. The speakers strongly recommended the latter, since it enhances career opportunities to develop more than one field. Both speakers, however, emphasized that the most important thing is to choose something that you find deeply desirable, whether it entails a shift or continuing on a present course.

- At the receiving end, the lab director, before deciding to interview a particular candidate, typically contacts the candidate’s dissertation advisor by phone to make further inquiries of an informal nature: how well the candidate works with others in the current lab, the particular contributions the candidate has made to lab projects, level of productivity, and any other issues that the director feels a need to address in this informal way.

- The interview often involves a presentation where the candidate discusses current research. Since many postdoctoral candidates are shifting fields, the presentation functions primarily to give an indication of how well the candidate has performed in past research and how well the candidate would fit within the new lab. Your talk needs to address these points indirectly, describing work that was done effectively as part of a team, while also identifying your own individual contribution to a project.

- In regard to the value of shifting fields, one speaker noted that once you enter a new lab it makes most sense to take full advantage of the particular strengths of the lab, which also may change over time. Thus, research interests commonly shift, and this is well recognized by the people who are doing the interviews.

- In addition to preparing a strong presentation, an important part of preparation for the interview is to be fully informed on the research activities of the principal investigators of the lab, reading up on their important findings and being prepared to ask some well informed questions about their research. You should also be prepared to answer some standard interview questions: why you want this particular lab, what direction your future research will take, some important accomplishments to date, etc.

- The issue of a good fit operates on both sides. The candidate who goes on an interview should pay close attention to the morale within a lab, how contented the lab members seem to be, how they interact with one another, etc. Choosing a lab where you think you will be happy was cited as the most important criterion from the candidate’s perspective. You will also want to get more precise knowledge about the size of the lab, the opportunities to pursue your own research, access to the lab director, information about the duration of the position, the duration of funding, etc.
Closely related to the informal nature of the application process is the informal nature of funding, especially in an era where government cut-backs have been experienced by many labs.

- Some postdocs are very much like salaried positions, others are not. The informal market, in particular, may yield positions, but without funding or with only partial funding, in contrast to positions that are publicized and that usually stipulate the financial terms (see above for more details on fellowships).

- In this era of uncertain federal funding, the question of timing has further complications: One speaker noted that if a lab is interested in you, but cannot guarantee funding, the lab is likely to make you an offer if they think you have the potential to acquire funding. By the same token, the granting agency typically will ask in which lab you intend to conduct your proposed research project. As noted above, granting agencies often have multiple deadlines, so it is possible to apply for funding fairly soon after landing a postdoctoral position.

- In applying for individual fellowships, be aware that many are intended for recent PhDs and, as noted above, often restrict eligibility to those who have received the PhD within just a year of the time of fellowship application.

During the question period many students were concerned about publication expectations and also time to degree.

- The speakers offered the helpful advice that if either of these appeared to be weak spots, the candidates needed to emphasize the potential benefits of proceeding at their particular pace: a change in direction with more exciting potential results, papers that are close to being ready for publication, etc. If you have experienced a slow-down for more personal nature (illness of your own or a family member, reduced schedule after having a baby, etc.), you need to emphasize how you have mastered time-management skills in response to the particular situation, and that you are now progressing at a steady pace.

- One student wanted to know whether it was advisable to apply both for postdoctoral positions and also for teaching positions, presumably at small colleges rather than large research universities (since the latter almost always requires a postdoc as a first step). The speakers once again emphasized that students should pursue anything they felt was a deep desire. This is the best assurance that something is the right step.

APPLYING FOR POSTDOCTORAL FELLOWSHIPS IN THE HUMANITIES AND SOCIAL SCIENCES

- As you generate a list of appropriate fellowships, keep in mind that your selection process is closely related to how you formulate your intended research project. It is often possible to increase the number of relevant fellowships by formulating the project in different ways. Be sure to consult the online guide, The Harvard Guide to Postdoctoral Fellowships, available at www.gsas.harvard.edu/current_students/the_harvard_guide_to_postdoctoral_fellowships_2.php. In addition, the professional association in your field will list postdoctoral opportunities, especially newly created fellowships.
• In addition to using the online fellowship guide, it is important to seek further advice from faculty advisors and colleagues in your field. Those who have gone through the process are a valuable source of information.

• A number of postdoctoral fellowships are specifically intended for recent PhDs; they allow applicants to apply during the final year of the doctoral program, but with the stipulation that the degree will be completed by the time the fellowship period begins. Others require applicants to be at least three years beyond receipt of the doctoral degree. Still others are exclusively for more senior scholars.

• As noted above, postdoctoral research positions can occur in a variety of settings, both academic and nonacademic: government laboratories, private nonprofit research institutes, and private corporate settings as well; in the humanities, most postdoctoral opportunities are in universities, while in the social sciences — especially in fields like business economics, organizational behavior, urban planning, and some other areas of economics and political science — they can occur in more varied settings, which is also the case in the natural sciences.

• In any of these settings, a postdoctoral position can provide opportunities for preparing works for publication, gaining further experience in one’s area of specialization, developing new areas of specialization, and gaining new mentor relationships.

• Before applying, try to learn something about the selection criteria for the fellowships you have chosen; this can be done by contacting the administrators of the relevant fellowship programs; these people are the “experts” and often are willing to give you further insights on preparing a strong application. In some cases, they will even read a draft before you submit a final version.

• Most of the listed fellowships The Harvard Guide to Postdoctoral Fellowships cited above call for direct application. In some cases, however, a nomination is required. This means that a specified representative must act on your behalf. You may initiate the process by actively seeking sponsorship — something that is normally appropriate to do.

Writing a Postdoctoral Proposal in the Humanities and Social Sciences

• For many new PhDs, especially in the humanities and social sciences, the main goal in applying for a postdoctoral fellowship is to transform the dissertation into a book manuscript for publication. A number of postdoctoral fellowships in fact are aimed at recent PhD recipients and explicitly state that the project may be based on the dissertation — although in some cases, and especially those aimed at more advanced scholars, the fellowships require a brand new project. Even if you are applying for postdoctoral fellowships for further work on your dissertation and have identified fellowships that will allow this continuation, it is important nevertheless to try to formulate your proposal in terms that emphasize any new and original research that will be entailed, rather than simply describing it as a polishing or editing job. For most applicants this does not pose a problem: research never really reaches closure; there is almost always some issue that will benefit from further development. In some cases, applicants expand the dissertation topic by extending the time span that is covered; in others, applicants add additional countries for comparative purposes; still others go more deeply into the cultural background for a given historical or literary movement. If anything, the main challenge is to limit the number of possibilities for expansion, since project feasibility is always an important concern.

• As an integral part of explaining the expansion of the dissertation it will be necessary to explain the
original topic as well. Almost all of the suggestions for writing dissertation fellowship proposals that have been made above in Chapter Five continue to apply at this stage. Once again, the proposal should be a persuasive and polished argument that your project will contribute to the field. In the case of the postdoctoral proposal, this argument needs to be made not only on behalf of the original dissertation topic, but also to bolster your proposed expansion. Since you will be writing the postdoctoral proposal when you are fairly well along in your dissertation — and may even have completed it — you can discuss the project with greater authority, citing some important findings that have contributed to the field, while also pointing to potential new contributions as a result of the proposed expansion.

- When you have a draft completed, seek the advice of friends or colleagues in your field, as well as faculty advisors. Once again, be sure to consult the GSAS Director of Fellowships in Holyoke Center, (617) 495-1816.

- As noted above, direct contact with the granting agency can result in a preliminary evaluation of your proposal, or at least yield some answers to questions.

- If you are applying for a number of different kinds of fellowships, the drafts must also be adapted so that the proposal matches the individual fellowship guidelines as closely as possible.

Similar Advice for Writing a Postdoctoral Proposal in the Natural Sciences, With Some Differences

Many of the above points apply to the natural sciences as well, with the important difference that in the natural sciences you must choose among the multiple papers that comprise your dissertation, and single out the one that will form the basis of your next research project. It is also common in the sciences to develop a new area of expertise after the PhD. If your postdoctoral project entails a shift to a new research area, it is important to explain that shift, citing any experiences or exposure that have led you to this new interest. And of course, you need to emphasize how nicely your new interest meshes with the particular research lab or team with which you hope to affiliate. Your statement should also try to show how your new interests relate to your past research, emphasizing how your past research experiences and accomplishments are indicative of the skills that you will bring to your new research.

OTHER TYPES OF RESEARCH POSITIONS IN THE FIELD OF THE PhD

Gathering Information:

- The process of identifying other types of research positions is more varied than for postdoctoral fellowships. In some cases, they are listed just as academic jobs are — in the employment bulletin put out by the professional associations in the various fields. For example, the Smithsonian Institution announces openings for historians in the employment bulletin of the American Historical Association. Others advertise openings in the Education section of the Sunday New York Times, or list positions in the Chronicle of Higher Education. Still others send recruiters to university graduate departments and the Office of Career Services. The PhD counselors in the Office of Career Services can offer useful guidance in the process and can help you to identify opportunities.

- Going beyond listings and recruiters, candidates may seek further opportunities through unsolicited inquiries or an indirect search, a process that closely resembles obtaining a postdoctoral fellowship position in the sciences. In this case, there is the important step of identifying appropriate research organizations. You already may know of some of the most important ones in your field, but there are also a number of annual directories, available in the Office of Career Services Library, which will
allow you to do a more thorough and systematic outreach, with such titles as: Research Centers Directory, Industrial Research Laboratories of the U.S., Peterson’s Guide to Engineering, Science and Computer Jobs.

CHOICE OF RESUME FORMAT FOR NONACADEMIC RESEARCH POSITIONS

- A resume for nonacademic positions differs from an academic curriculum vitae in placing a greater emphasis on actual skills — on what you are able to do as a result of your PhD training and other experiences. In general, there is a greater proportion of action verbs. It is more important to think in these terms when applying outside of academe.

- There are three basic types of resumes (each one illustrated at the end of this chapter):
  
  A functional or skills resume
  A chronological resume
  A modified chronological resume.

The choice will depend on the nature of your research experience — on whether it has been almost completely acquired within academe, or has involved some nonacademic experience as well. Whichever type you choose, it is important to assemble your research and other relevant experience with succinct headings and in a format that can be scanned quickly for relevant information. Once again — as in the c.v. — topics should be ordered in hierarchic fashion, with the most relevant ones presented first, and the rest following in corresponding order. Within each category, items should be listed in reverse chronological order, the most recent appearing first.

- **A Functional or Skills Resume** focuses on skills rather than on positions held. It can be effective for those whose work has been almost entirely academic. In addition to specialized research skills, other relevant skills that might be included are writing, editing, teaching and administration. As skills are named, documentation should follow of how and where these skills were acquired.

- **A Chronological Resume** orders items by date — in reverse order — rather than by category. It is particularly effective for showing a steady or progressive record of achievement. Together with each experience or position, one should include the accomplishments, functions and skills that are involved.

- **A Modified Chronological Resume** arranges different types of professional experience in separate categories — for example, research would be separated from teaching or administrative experience. Within each category, experiences are presented in reverse chronological order, and accomplishments and skills for each position are described. This format has some of the advantages of the functional resume. It is especially effective for those with diverse skills and experience.