How to Apply for a Job in Academia

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When applying for jobs in academia, it is important to realize that universities often receive 150-300 applications for the same position. This means that members of search committees must read large volumes of material. Therefore, it is critical to be as concise as possible. Reviewers will skim applications that are too lengthy. In addition, make sure that your application is well organized, visually attractive, and devoid of spelling mistakes or other careless errors. Everyone (native and non-native English speakers alike) should ask one or more people to read their application for errors and scientific clarity. While a nicely prepared application will not guarantee you an interview, a poorly prepared application makes a bad impression no matter how many papers you have published. Don't be discouraged by a missed deadline, a late application will often be accepted.

The Cover Letter
The cover letter is the place where the search committee can get a quick impression of your background and interests, and a lot of care should go into its preparation. The letter should contain the following important pieces of information. First, introduce yourself and state the position for which you are applying. Next, describe your past research. Here, it is important to give a brief but punchy account of past accomplishments, emphasizing what is novel and interesting about the work. Use a few buzz-words. To let the committee know what you have published, you can place references in the text of your cover letter (Jones et al., *Molecular Cell*, 2018). Emphasizing the journal with bold font will rub some the wrong way. Finally, explain what you would like to work on in the future. Again, be brief but emphasize what is most novel or creative about your future plans. If the position has an emphasis on teaching, briefly explain your qualifications and interests (details should go in the CV). If possible, do not exceed one page! If your situation involves special circumstances (e.g. your post-doctoral supervisor passed away and therefore there's no letter of reference from them), the cover letter is the place to discuss this. Don't emphasize the complementarity of your work to that of the department or mention potential collaborations, as this will appear presumptuous. The search committee will be able to judge complementarity without you pointing it out.

The Curriculum Vitae
The CV should contain in the following order:
-Your name and address
-All higher education (college and graduate school)
-All professional positions held, including technician, post-doc, instructor/research scientist, and other relevant positions, even if they are from a former life. All years since college should be accounted for! Include very brief descriptions of work performed.

-Awards and honors, including pre- and post-doctoral fellowships. If you have a major source of independent funding (such as a K99 Award), a separate category entitled "Current Funding" may be useful.

-Publications. List the most recent first. List your name in bold type. You can list manuscripts submitted, and it's best to post them on a pre-print server such as BioRxiv, so that reviewers can look at the work. In cases where you are an equal author, place an asterisk next to all equal authors and note " *equal authorship" immediately below the relevant reference. Do not rearrange the order of authors to show that you have equal first authorship. Do not list manuscripts in preparation unless you feel it is really necessary and limit the number of these to one, at most two. If a paper you published was accompanied by a "News and Views Article" or featured in a mini-review, this is worth pointing out.

-Invited talks and platform presentations at meetings. Do not include posters as this looks like "CV padding."

-Teaching experience and interests

-References. Name, relationship to you, title, address, contact info (phone, email) of references (usually 3-5).

The Research Proposal

Many job ads state a page limit for the research proposal. Follow it! This limit is usually 3 pages single-spaced, 11-12 pt type (references can go on a third page). Writing 5 pages will only hurt you because it won't get read. Start with a brief but general description of your area of biology. State the problem and perhaps the key unanswered questions. You must get the general reader interested and demonstrate that you have a broad perspective. Remember that search committees are composed of people from different fields, and you must appeal to all of them. Interesting the reader in your problem is as important as convincing them you have the solution.

After the introduction, describe your past/present work. If your graduate work is critical to your current interests (perhaps it demonstrates skill in a particular field or technique), then include a very brief description, but make it clear why it is relevant to your future. Otherwise, do not describe your graduate work; it should be obvious from your publications what you did. For your present work, give as brief a description as possible but emphasize what is novel and important. For each of your accomplishments that has been published or that is in press or submitted, list the appropriate reference.

Finally, state your future plans. This is usually 50-70% of the proposal. Come up with 2-3 Specific Aims. They should be distinct but form a cohesive whole and address fundamental questions. Your aims should be creative yet feasible. They should build on your past experience, and it should be clear that you have the necessary background to achieve what you propose. Include a few simple, attractive figures to break up large blocks of text. Often, the decision between outstanding candidates can come down to the research proposal, so you should spend a lot of time perfecting this.

Some institutions will ask for a statement of teaching experience, teaching philosophy, and/or teaching interests. Some also ask for a diversity statement. Make sure these are thoughtful, but realize that most departments know that most post-

doctoral fellows will not have done extensive teaching, so don't inflate your experience or list marginal activities (e.g. tutoring your little brother).

The Academic Job Interview

During the job interview, you will be asked to give a seminar (plan on a 45-50 minute talk) and possibly a "chalk talk," and you will have many short, 30-40 minute meetings with faculty in the department. You can easily meet with 10-15 people, sometimes over the period of a day and a half. During this process, you would like to accomplish several things.

First, and most importantly, you need to convince the department that your work is exciting and that you will be a future leader in your field. This is the function of the job talk (see below).

Second, convince the department that you will be a good colleague. An essential part of being a good colleague is showing interest and the ability to intelligently discuss the work of each member of the department. During the short meetings, faculty will usually give you a brief description of their work. Be alert and ask questions. It is useful to skim a few abstracts and even read a paper from all faculty you are likely to meet. People in your field are more likely to expect familiarity with their work. If you don't understand what they are telling you, ask them to explain it more simply. This shows you really care and are not afraid to admit you don't know something. Do NOT drone on about your work for the entire meeting in an effort to impress. Even if they keep asking you questions about it, at some point you should ask them about their work.

Third, would you like to come to this department if offered a job? This means you should ask questions about the department and institution. What is the student faculty ratio? How many years of funding does the training grant supply for each student before you must pay for them with your grant? It is especially important to talk to the most recent recruits. Do they look happy? Have they been sponsored for Young Investigator Awards such as the Pew Scholar Award? Have they been able to attract students and post-docs? What kind of track record does the department have for granting tenure to junior faculty? Don't be *too* pushy with questions during the first interview. For example, if the Chairperson does not discuss the start-up package, don't ask. It means they will wait until the second interview. Asking questions shows that you have thought deeply about the complexities of running a lab.

The Job Talk

Your job talk should be extremely well prepared. Plan carefully to make sure you do not speak longer than 45-50 minutes. It may be useful to write out the entire talk, word for word, and memorize it. Practice the talk until you feel very comfortable giving it, so you can deliver it in a relaxed way (that does not appear memorized!). Practice in front of your lab and try to include other PIs who are not already familiar with your work. It is important to finish on time, people will stop listening and be irritated if you go more than a minute over (unless you are a Nobel laureate), especially in places where the interview takes the form of a symposium with several applicants. Make simple, readable slides with font that is not too small to read from the back of the room. Do not overload slides with data. If you don't have time to let someone fully comprehend a complicated slide, you are better off not showing it. One idea per slide. Give each slide

a title which briefly states the conclusion. Make good use of the space on the slide; do not leave gaping white areas. Powerpoint encourages bulleted lists, resist. Avoid complete sentences and leave only 1-4 words per bullet point, let your talk fill in the details. If you must use bulleted lists, try to sprinkle in some figures or color in each slide to keep the audience conscious. As with your cover letter and research proposal, make sure you get the audience interested. Don't start the talk with "The title of my talk is…" but rather a single sentence that encapsulates the new and exciting message you will convey so people know they should stay awake. Spend enough time on the introduction to state the general area, what's known, and what are the outstanding questions. You must be able to get a general audience excited. Divide the talk into clear sections and tell the audience ahead of time what's coming, and why it's important. At the end, restate your major conclusions even if you think they must have gotten the message by now. After the summary, include a slide that outlines your future plans. This should be done even if you will give a chalk talk on future plans to the search committee later during the interview; you want to get the entire department excited about your future directions. Be confident. Don't use 'we' to describe work where 'I' is more appropriate, but at the end of your talk, be appropriately generous in your acknowledgements.

Nervousness can make the questions after the talk challenging. Listen to each question carefully and ask for a repetition if you didn't get it. Then, repeat the question for the audience. Take a second to formulate a clear and concise response and then deliver it. Do not ramble on forever until you get a sign that the questioner is satisfied. That sign often will not come, and you will look insecure.

Some fraction of the audience is always asleep during any talk, no matter how exciting the subject. Do not let this bother you! Even if the chair of the search committee nods off, it just means they had a big lunch. Find a few people who are listening attentively and give your talk to them.

The Chalk Talk
Not all interviews involve a chalk talk. However, if you have to give one, make sure it is well prepared. The word chalk-talk is to be taken literally. Search committees will be irritated if they have to sit through another highly polished powerpoint presentation, whereas they will be impressed if you can stand at the board and explain your future plans with no visual aids. If you have some preliminary data that is crucial to demonstrate the feasibility of your future plans, then make an overhead of the relevant data or distribute a hand-out. Each university has a slightly different format. Find out what it is before your visit. The chalk talk should present in considerable detail the future directions of your research. It is like a verbal version of your research proposal. State several interesting problems (Specific Aims) and explain how you plan to solve them. Familiarize yourself with the experimental details of the techniques you propose to use if they are new to you. Present alternative strategies to achieve your aims, especially aims that are highly ambitious or involve unproven technologies. Calibrate the ambitiousness to where you are interviewing. For most places, your aims should be feasible within a few years within a small group and appropriate for an NIH proposal, but especially for fancy places, formulate some grand plans for the long term. Beware that you may get constant interruptions (not a bad thing), and that you may not be able to

get through all the points you would like to cover. Therefore, it is a good idea to give a 3-5 minute overview before going into details.

If your approaches are challenged, listen carefully to the criticism and give a judicious response. Don't be defensive! If someone raises a valid criticism you hadn't thought of, acknowledge this. This will convey that you can handle suggestions/ criticisms. Rarely, you might get unreasonable criticisms from people with a bee in their bonnet (this can also happen during the questions after the job talk). Politely stand your ground, perhaps suggesting a follow-up discussion later. Other members of the department will recognize an unfair attack as just that.

Follow up
After the visit, it's a good idea to thank the main people who were involved in hosting you, including administrative staff. If a major scientific question arises that you feel you did not adequately address, feel free to email the relevant person with your thoughts.