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## The postdoctoral blueprint part two: the faculty application

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### Abstract

To prepare for an academic career requires a postdoctoral position that provides an advanced research experience, which leads to increasing independence. However, it is critical to develop other parts of your academic portfolio to create a robust application. Here, we discuss the critical steps in preparing a competitive faculty application.

### Creating a road map to a successful application

The process of acquiring an academic job is hard work and requires months of ceaseless effort. The faculty application usually consists of five components: your curriculum vitae, a cover letter, a research statement, a teaching statement, and a statement of diversity, equity, and inclusion (DEI). In addition, faculty applicants must provide letters of recommendation (Figures 1 and 2).

Do not wait until the last moment to start preparing your application. Allocate from 6 months to 1 year to give yourself time. The following steps will facilitate your faculty search:

- Peruse faculty job openings and read what the qualifications and requirements entail.
- Consider your research direction and how you can brand yourself.
- Start working on any missing pieces in your profile months or years in advance.
- Ponder the implications, impact, and future direction of your research.

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- Get involved in various teaching and outreach opportunities.
- Highlight the information that is essential for the specific position.
- Build your network by attending conferences and workshops.

All of these documents are important but the research statement is the most complex aspect of the application.

## Research statement

Your research statement is intended to serve three purposes: (i) to provide a narrative summary of your research contributions, especially how they all tie together; (ii) to identify the important issues and research areas you intend to work on in the future; and (iii) to give an indication of your future funding probability. This document is usually about three to four pages<sup>i</sup> and should be a clear and succinct description of your specific research niche, the need for that research area, your track record, and your future research vision. It is not a personal essay<sup>i</sup>. Eliminate phrases like ‘when I was a child, computers always fascinated me’. Although it is important to articulate a clear direction for your future research, it is not expected that you will work on everything you describe. However, you should articulate a clear vision of the research and problems you plan to study in your laboratory as a new faculty member<sup>i</sup>.

Hiring committees do not make job offers based solely on your track record, they make their decisions based on your potential to be an excellent researcher, your potential fit in the department, and the possibility of becoming a life-long colleague. They want to see your independent, compelling, and fundable vision for at least the first 5 years during your faculty tenure and, if possible, 10 years. If you only envision studies leading to the next few papers to extend your postdoctoral research, you will be at a disadvantage. The structure of a research statement can vary widely by field, so be sure to investigate the expected style and then tailor your statement to fit the standard format for the position. Write a research statement that will be understandable and exciting to the faculty search committee, many of whom are outside of your specific area. Avoid jargon and acronyms.

## Critical hacks unlocked for your research statement

- Your research statement should focus on your current research, the implications of your findings, and your future directions. You should mention what you potentially bring to the department and how your research is critical for advancing the field. Mention any novel methods or techniques and expertise.
- The research statement should typically be one to three pages.
- Discuss funding organizations that will potentially support your research and possible alternative projects that may develop from your work.
- Ask others to share a copy of their research statements and have a trusted individual review your statement.

## Teaching statement

A teaching statement is a one to two page description of your teaching philosophy relayed in a first person format. Writing this document will help you articulate, prioritize, and integrate your ideas about teaching and learning for interview presentations.

Based on your research background, it may not be apparent what you could teach, therefore, make it explicit. Be specific, realistic, and build on your knowledge and experience. Provide information from teaching evaluations if you have them, or quote student feedback on your teaching style. Your statement should be customized to the position and institution [1,2].

## Critical hacks unlocked for your teaching statement

- Describe your research expertise that might add to the teaching of an existing course.
- Describe how you might use the institution's teaching resources to assess and improve your teaching practices.

## Cover letter

Your cover letter, also called a letter of intent or interest, should emphasize your past and present academic career while promoting your future potential. In our experience, the cover letter is a 'school-specific' statement of why you are applying to this institution<sup>ii</sup>. It should mention potential collaborators at the school that you would be interested in working with and should be no more than one page.

## Critical hacks unlocked for your cover letter

- We suggest that you ask your peers and colleagues for sample job application cover letters and tailor each cover letter specifically to the target institution.
- Your cover letter should elaborate upon some of the key facts you include within your other application materials. Highlight whatever makes you stand out as a great fit for the job and briefly describe how your experiences make you a great candidate.
- The cover letter is typically one to two pages in length and not more than three pages when applying for a tenure-track faculty position.
- Identify the two to three most essential skills that the institution is looking for and then illustrate that you have these skills and have used them effectively.

## Letters of recommendation

The letters of recommendation are the only component of your application that you do not write yourself. The best way to prepare for solid letters of recommendation is to build healthy relationships with respected researchers. You will usually need three to four letters of recommendation. It is best if all your recommendation letters are from well-established

professionals. One letter should be from your graduate thesis advisor and another from your postdoctoral advisor.

### **Critical hacks unlocked for letters of recommendation**

- Consider creating a template containing key information for your letter writer. This will give them more time to edit and provide additional information.
- Your letter of recommendation should be personal, quantitative, highly enthusiastic, and memorable by adding anecdotes of strong characteristics. When you ask a mentor to write a letter of recommendation and they are hesitant, do not use them! It should be focused on someone who not only knows you but can positively capture who you are academically, professionally, and can provide a personal touch as well.
- Prepare a template letter of recommendation that is tailored to your audience.
- Be aware that sexual and gender minority status, minority, and gender biases exist in letters of recommendation. For example, women are significantly less likely to receive excellent recommendation letters [3] than their male counterparts at critical career junctures [4] and their letters are less authentic and contain more leisure words, with fewer feel words and biological processes words [5].

### **Diversity statement**

A diversity statement is not always required but sometimes necessary. Similar to a teaching statement, a diversity statement should state your position on DEI, what you have done to promote it, and strategies you will incorporate in the future to make DEI initiatives a reality.

### **Critical hacks unlocked on diversity statement**

- Focus on issues that enhance inclusivity. Do not discuss politics or social issues that are overly polarizing.
- Describe how your experience has helped improve your research and/or teaching and how you have helped others realize that their stories can inform their critical thinking.
- Make sure you do not create false statements.

### **Preparing for interviews**

Interviewing is a two-way street [6–9]! The interview is not only a chance for the interviewers to decide if you are a good fit for the job, it is also an opportunity for you to decide if the position is a good fit for you [9]. Peruse faculty research profiles, laboratory websites, and skim a few of their recent papers. Consider asking each of your interviewers a couple of questions and note any possible collaborative opportunities. Also note any inconsistencies in how people describe the institution or its culture.

Campus interviews are exciting as well as stressful and they are often scheduled under tight deadlines. In addition to the interview itself, the process requires tremendous energy and endurance. In the weeks before your interview, make sure you get enough sleep and exercise [6]. At the conclusion of your interview, write a thank you note to everyone you met. Make them individually focused and highlight any significant aspect of their meeting.

### **Critical hacks unlocked on preparing for interviews**

- Read the faculty profiles to learn what they are working on.
- Have at least four to five questions about their research and one to two about what made this job the right fit for them.
- Glean information from other university employees to get a better idea of the environment.

### **Delivering your research talk**

The most important part of the interview is the research talk, which should excite the audience. It is important to know your audience. Additionally, it is important to manage your time effectively during the talk and avoid spending too much time on the background and theoretical framework. Get to your data within the first 10–15 minutes of the talk. Also, avoid trying to fit too much information into your presentation [10].

### **Critical hack unlocked for your research talk**

- Practice, practice, practice!

### **Preparing for your chalk talk**

Many search committees use a chalk talk to assess suitable candidates for faculty or independent research positions. The informal nature of this format (no slides, just your wits, and a board) allows them to learn about you as a potential colleague. As such, the chalk talk is frequently the most crucial determinant in landing a position. If you have never experienced a chalk talk, attend one at your institution<sup>iii,iv</sup> [11].

Your chalk talk should not recapitulate your scientific presentation, but should build on it by describing where your science is heading and how it is different from your previous mentor. Your chalk talk should focus on a maximum of three key concepts and how they will be executed. It is also essential to discuss the difficulty of the project, which staff will do the work or who you would need to hire, and demonstrate your enthusiasm for being considered by the institution<sup>iii,iv</sup> [11].

### **Critical hacks unlocked on your chalk talk**

- Schedule your most important interviews last, do the ones you are less interested in first, but always be prepared because the institution that you think is least interesting may turn out to be fantastic. Hinton stated, ‘my worst chalk talk was

at my top choice institution, but as I learned and was less nervous, they got so much better’.

- Virtual chalk talks can be done but require a white board function. Some places will allow you to have three to four slides for diagrams. However, usually chalk talks are done in person and without slides.
- Do not present more than three to four ideas and talk about how they work together, so that your science is seen as logical.
- Use this talk to present your vision more than preliminary data but do mention your preliminary data.
- If it is in person, ask for a zoom option so that your mentors can attend your research talk and your chalk talk. They can provide feedback after both.
- Discuss how your research will be funded and what techniques are essential to your program.
- Be prepared for questions: do not get frustrated, ask for the questions to be repeated and think before responding.
- For each project you present, be prepared to discuss who you will need to hire and what they will need to do to conduct the project.

In summary, remember that the job application only gets you an interview; it does not guarantee you a job. Obtaining an interview is difficult, but developing a blueprint will help you get an interview. Start 2 years early to prepare for your exit from a postdoctoral position. Remember that every interaction is important, no matter how big or small it may seem at the time.

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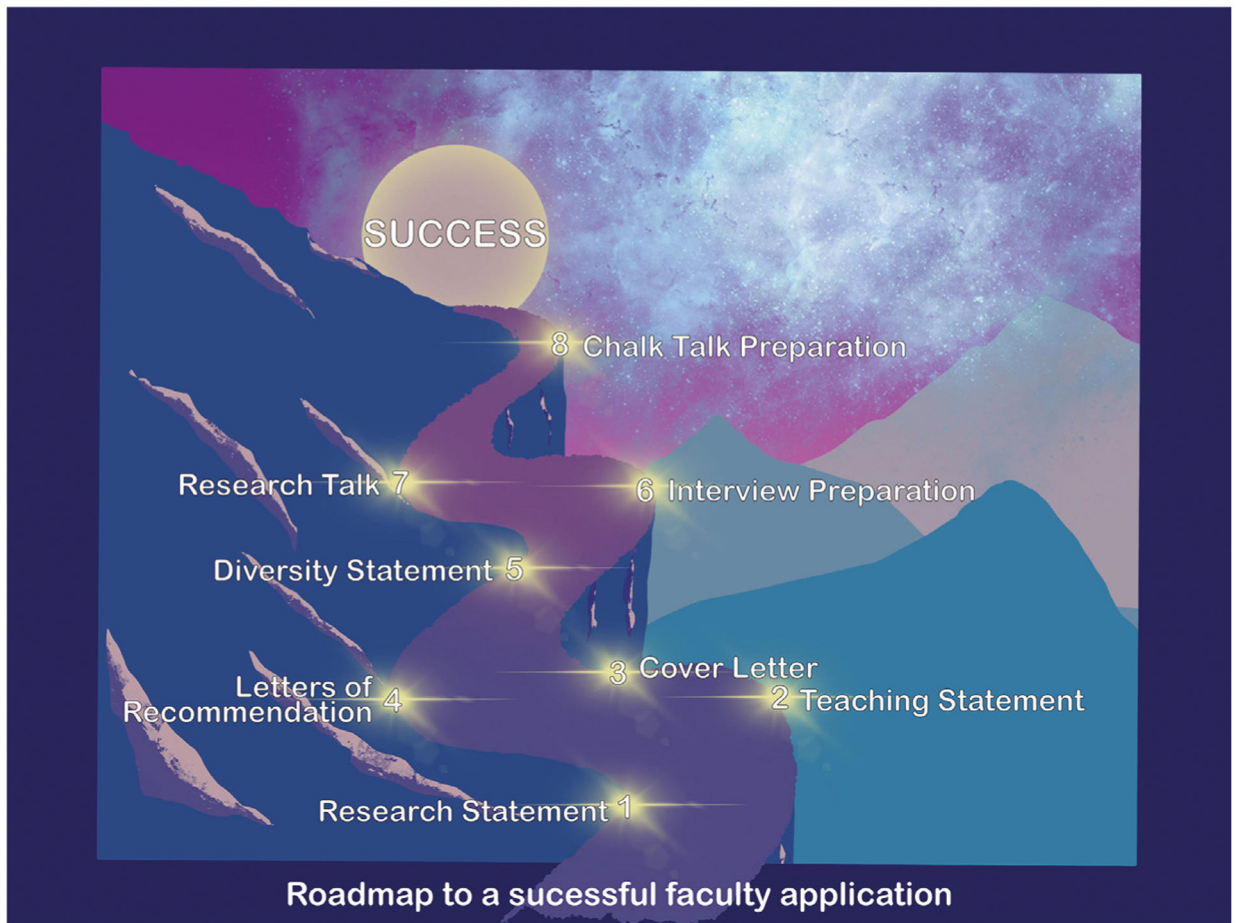
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## Resources

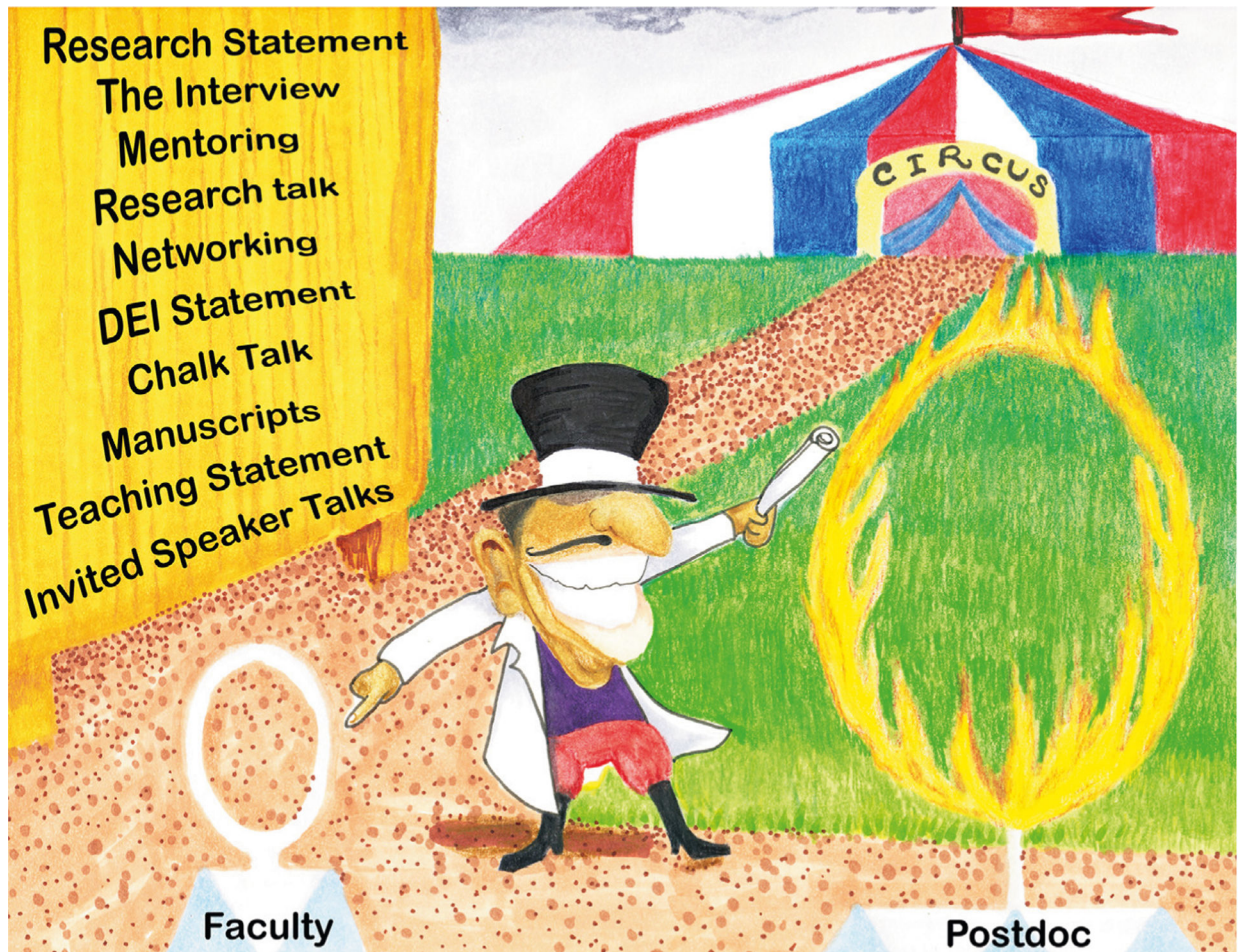
- i. [www.science.org/content/article/writing-research-plan](http://www.science.org/content/article/writing-research-plan)
- ii. [www.science.org/content/article/writing-winning-cover-letter](http://www.science.org/content/article/writing-winning-cover-letter)
- iii. <https://edgeforscholars.org/qa-how-to-give-a-chalk-talk/>
- iv. <https://elifesciences.org/inside-elif/d1e9a900/focus-on-the-big-picture-essential-advice-on-the-chalk-talk-from-the-5th-annual-postdoc-retreat>





**Figure 1.** This figure depicts the roadmap a postdoc must follow and complete all the stops, which represent the different components of a successful faculty application.





**Figure 2. The circus: a myriad of moving parts that never look the same during the pursuit of faculty positions.**

Most academic settings are like a circus with players improvising their acts as the show evolves. This cartoon is depicting what postdocs have to do to obtain a faculty position at a research-intensive institution. Abbreviation: DEI, diversity, equity, and inclusion.