



COMMENT



A scientific approach to navigating the academic job market

Sofia Beas^{1,2,4} and Kirstie A. Cummings^{3,2,4}

This is a U.S. government work and not under copyright protection in the U.S.; foreign copyright protection may apply 2021

Neuropsychopharmacology (2022) 47:621–627; <https://doi.org/10.1038/s41386-021-01225-w>

After consulting with your mentors, you have decided to go on the job market this year [1–3]. Congratulations! This is a huge milestone. One that you have worked hard for since starting your scientific career. Now, you are probably asking the following: How do I go about it? This commentary aims to provide guidance for approaching the academic job search process and offer resources to help candidates start on the path towards obtaining their dream job. Importantly, we want to emphasize that the job search process is one of the most important scientific endeavors a candidate can undertake. As such, the process requires a significant commitment of time and effort [4].

NAVIGATING THE ACADEMIC JOB MARKET

The job search process can be divided broadly into four stages: 1. Preparing, searching, and applying for positions; 2. Pre-interviews; 3. Interviews; and 4. Post-interview processes. In Table 1, we provide candidates with a breakdown of each stage of the job search process. We include short descriptions, the estimated timeline, recommendations drawn from our experiences on the 2020–2021 job market, and resources we found to be helpful. In the era of COVID-19, a vast majority of institutions turned to virtual formats to conduct interviews. While virtual interviews offer some benefits (e.g., no travel), challenges can also arise [5]. Therefore, in Table 1, we also provide additional considerations for the “virtual” job search. Note that the advice and resources cited in Table 1 are not exhaustive but should serve as a solid foundation to get candidates started. In addition, we focus on searching for a position at an R1 institution. Approaches will vary for small liberal arts colleges, which place more weight on teaching and conducting research with undergraduates (For more information, see Table 1 “Different types of academic jobs” resource).

APPROACH THE JOB MARKET LIKE A SCIENTIFIC PROJECT

To prepare for the job search process, we recommend that candidates put their scientific mind and skills to work and ask: If this is my most important scientific endeavor to date, what would I do to ensure its success? Below, we suggest some recommendations.

1. **Make it a priority and plan ahead.** All the steps outlined here require ample time and effort. Thus, we recommend that applicants start preparing and planning for the process some months ahead of the application deadlines. Note that

many job applications open in the summer and have rolling or hard deadlines in the Fall (Current events like the COVID-19 pandemic could influence application deadlines). We recommend applying early and broadly. The early bird gets the worm!

2. **Do the research.** There are numerous resources available that outline the academic job search process (e.g., articles, books, webinars, social media platforms). Here, we provide a starting point (Table 1), but highly recommend that candidates use their scientific skills to identify additional resources. In addition, we also encourage applicants to seek advice from the experts, including those who have successfully navigated the job market recently as well as those who have served on hiring committees.
3. **Prepare, strategize, and organize.** Once candidates have done their research and identified job opportunities, we recommend they consider the following:
 - a. **Availability of jobs.** Consider location, job opportunities for significant others, and the prospects of whether the specific position will be academically and personally fulfilling [2, 6, 7]. With that said, we strongly recommend that candidates do not discount any opportunities since it is difficult to know the specifics of the job and whether it would be a good fit based on the advertisement.
 - b. **Remaining organized.** Use a spreadsheet to keep track of job advertisements, deadlines, and specific requirements for each job packet (i.e., statements, copies of publications, etc.). In addition, candidates should make plans for how each application will be tailored for each specific job posting with a particular focus on how the candidate ‘fits’ in the department and institution [2] (see 7 below).
 - c. **Keeping track of reference letters.** Candidates should keep their referees constantly updated by sharing their job spreadsheet (as suggested in 3b) and sending them information about job descriptions and deadlines soon after applying.
4. **Seek “peer-review” from colleagues.** Identify people who can provide honest feedback on application documents, interviewing skills, job talks, chalk talks, and any other part of the process.
5. **Think critically.** When it comes to subjective advice (e.g., this Commentary, peers, etc.), we recommend that candidates utilize several resources (colleagues, Google, Future PI

¹Unit on the Neurobiology of Affective Memory, National Institute of Mental Health, Bethesda, MD, USA. ²Department of Neurobiology, University of Alabama at Birmingham, Birmingham, AL, USA. ³Nash Family Department of Neuroscience, Friedman Brain Institute, Icahn School of Medicine at Mount Sinai, New York, NY, USA. ⁴These authors contributed equally: Sofia Beas, Kirstie A. Cummings. ✉email: sbeas@uab.edu; kac3@uab.edu

Table 1. Summary of the academic job search process, including descriptions, timeline, advice, and resources for each stage.

Job Search Stage	Overview	Timeline	Recommendations	Resources
Searching/ Applying	Documents Candidates identify the different types of academic jobs and the jobs available for the current job search cycle.	New jobs are posted all year, but most appear between July-January.	<ul style="list-style-type: none"> Start early (finding opportunities and putting an application together takes time). Cast a wide net. Do not discount any opportunities. In cases where there is an exceptionally good fit in a department that is not currently advertising for a position, reach out to your network and/or prospective Department Chairs to see whether it is possible to be considered for a position. Be sure to emphasize the potential fit and the reasons to be considered by that particular department. Some institutions may reach out candidates directly during the off-season to solicit applications for unposted positions. Candidates should carefully consider the strengths (strong institution interest in the candidate) and weaknesses (off-season can mean fewer competing offers). 	<ul style="list-style-type: none"> Different types of academic jobs: <ul style="list-style-type: none"> NIH Career Symposium Overview of the process <ul style="list-style-type: none"> Academic Job Search - The Hiring Process From The Other Side Reflections on my tenure-track assistant professor job search LANDING AN ACADEMIC JOB: The process and the pitfalls Tips on Getting an Academic Position Getting an academic job
Cover Letter	One page document containing the following: reference to the position and department, discussion of research interests, teaching highlights, "fit" at the institution, list of the enclosed materials.		<ul style="list-style-type: none"> Personalize the letter for each position. Committees are reading hundreds of these. Therefore, applicants should succinctly highlight the reasons why they are the top candidate for the position. 	<ul style="list-style-type: none"> How to Write a Successful Cover Letter Why Your Job Cover Letter Sucks (and what you can do to fix it)
CV	Document including the following: education/training, awards, invited talks, poster abstracts, leadership/outreach, contributions to DEI efforts, and professional activities.		<ul style="list-style-type: none"> Candidates should keep their CV organized and updated. For outreach/leadership efforts, it is helpful to include a 1-2 sentence description to help communicate the role performed by the candidate. 	<ul style="list-style-type: none"> How to write an academic CV Dr. Karen's Rules of the Academic CV
Research Statement	Two-to-four-page document briefly summarizing PhD and postdoc research (2-3 paragraphs), proposed future research, and potential areas of future inquiry.		<ul style="list-style-type: none"> Page requirements can vary across institutions. It is good to be prepared by having different versions that vary in length and detail (e.g., a two-page and a three - four-page research statement). Keep a big picture view of the research described. Keep the methods and technicalities to the minimum. Include a concluding paragraph stating how the proposed research is unique and how it fits within the broader research focuses in the department. 	<ul style="list-style-type: none"> Developing a research statement Writing your research plan Rubric to assess research statements For examples, search for your field + 'research statement'

Table 1 continued

Job Search Stage	Overview	Timeline	Recommendations	Resources
Teaching Statement	One-to-two-page document detailing teaching and mentoring experiences, philosophy, and future plans for teaching		<ul style="list-style-type: none"> If the candidate has been awarded a transition grant (e.g., K99/R00), briefly outline Aims in addition to discussing ideas for another major grant (e.g., R01). Outline past experiences, vision, and philosophy, and plans for teaching and mentoring. This is particularly important for small liberal arts colleges (SLAC) and primarily undergraduate institutions (PUI). Candidates may list classes specific to each university that they are qualified to teach and propose 1-2 new classes that could be designed based on their expertise. Where possible, provide specific anecdotes of teaching techniques used both in the classroom and in the lab. If the candidate does not have formal teaching experience, they should describe their informal teaching experiences (e.g., mentoring, guest lectures, professional activities that involved teaching, etc.). If applicable, describe workshops taken on pedagogy. If applicable, highlight virtual/hybrid teaching experiences. 	<ul style="list-style-type: none"> Writing a Teaching Statement The Dreaded Teaching Statement: Eight Pitfalls The Weepy Teaching Statement: Just Say No
Diversity Statement	One-to-two-page document describing past experiences and future plans to promote Diversity, Equity, and Inclusion (DEI) through mentoring, teaching, and professional activities.		<ul style="list-style-type: none"> Describe mentorship philosophy and how principles of Diversity, Equity, and Inclusion (DEI) are incorporated. Describe previous and future professional activities aimed to bring awareness to and promote DEI efforts. Be sure to provide specific examples of the efforts implemented to enhance DEI. Some institutions do not require a diversity statement, but it should ALWAYS be included. In this case, append it to the end of the research statement [10–12]. 	<ul style="list-style-type: none"> What's the difference between diversity, inclusion, and equity? The Effective Diversity Statement Rubric to assess diversity statements Guide to writing a diversity statement
Pre-Interviews	A short (15 min–1 h) virtual discussion with the Search Committee aimed at becoming more familiar with the candidates, their past research, future research, teaching, and career goals. The Search Committee will then select a	Invitations are typically sent out within 1 month of the application deadline.	<ul style="list-style-type: none"> Candidates should be familiar with the institution, department, and faculty members' research. Be prepared to talk about the application materials, fit in that department/institution, plans to apply for funding, and how the 	<ul style="list-style-type: none"> Questions that could be asked: Sample Interview Questions for Faculty Candidates Common Academic Interview Questions

Table 1 continued

Job Search Stage	Overview	Timeline	Recommendations	Resources
	'short-list' of who they will invite for a 'full' interview		<p>candidate's research is unique from that of their mentor and/or others pursuing similar lines of research.</p> <ul style="list-style-type: none"> Candidates should have a rough idea about lab space, personnel (who will be hired first), resources, and equipment needs (see Post-Interview resources). Prepare succinct answers to anticipated questions. Prepare 3-5 questions that will enable the candidate to learn more about the department and institution. 	<ul style="list-style-type: none"> Tips for success: Faculty Candidates: Tips for a Successful "Skype" Interview Rocking the Phone/Skype Interview
Interviews	<p>Whether in-person or virtual, interviews are usually one or two days long and broadly consist of one-on-one meetings with faculty, a job talk on day 1, and a chalk talk on day 2. Interview length and format varies across institutions (i.e., some institutions schedule job and chalk talks in two separate interviews, and others schedule the job and chalk talks on the same day back-to-back).</p>	<p>Invitations for interviews are sent out ~1-4 weeks after the conclusion of pre-interviews or 1-8 weeks after the application deadline for those not conducting pre-interviews.</p>	<ul style="list-style-type: none"> Itineraries are sent a few days in advance. Ask for clarification if needed. If virtual, clarify time zones for each interview. Prepare to speak with each faculty: read their work, discuss ideas for collaborations, etc. Prepare questions for each meeting and tailor them accordingly. Note that the candidate should also be 'interviewing' the institution. Take notes when possible. Interview days are very long. Have easy-to-eat snacks and plenty of water available and ask for breaks when needed. Send personalized thank you emails within 48 h after the interview. 	<ul style="list-style-type: none"> Preparing for an academic interview Interviewing: Virtual Interview Tips General tips for virtual interviews
Job Talks	<p>Job talks are usually allocated a 1-h session. Candidates deliver a 45-50 min talk outlining past research and "big picture" future research. The last 10-15 min are dedicated to answering questions from the audience.</p>		<ul style="list-style-type: none"> Do not exceed your allotted time. Deliver your talk with a broad audience in mind. Provide a 1-2 slide 'teaser' of your future research at the end of your seminar. Ask for clarification regarding how much time should be spent on this section 	<ul style="list-style-type: none"> Tips a successful job talk Ten simple rules for giving an effective academic job talk Interviews: The all-important job talk
Virtual Job Talks	<p>The contents of the virtual job talk should be identical to one delivered in-person, but with particular care given to audience engagement in a virtual setting.</p>		<ul style="list-style-type: none"> Be familiar with the specific technology each institution will use for the talk (e.g. Zoom, Webex) and use the latest software update. Use plenty of graphics and videos (if possible) to keep the audience engaged. Be sure people can see your slides and can hear you before starting. Keep words in your slides to a minimum. 	<ul style="list-style-type: none"> 7 Simple Tips to Help Crush Your Academic (Job) Talk on Zoom Presenting Over Zoom Tips for Presenting Your Research on Zoom Speaking about (any) Science: Virtual Talks

Table 1 continued

Job Search Stage	Overview	Timeline	Recommendations	Resources
Chalk Talks	<p>During this session (can range from 45 min-2 h), candidates outline the overarching goal of their research program and cover 1-2 major projects that will comprise the first ~5 years of research. Candidates are expected to draw out their research plans on a white board with frequent interruptions from the faculty.</p>		<ul style="list-style-type: none"> • Ask to observe chalk talks of faculty candidates at current institutions. • Start preparing the talk early and gear to faculty both in and out of the field. • Practice with mentors and colleagues. • Form a chalk talk 'club' with others on the market and solicit peer feedback. • Clarify who will be present at the talk and if there is a preferred format (e.g., whether slides are allowed and/or expected in addition to writing on a white board). • Outline the important take home points early in the talk in case time runs short at the end. 	<ul style="list-style-type: none"> ○ Preparing your academic chalk talk ○ Demystifying the chalk talk ○ How to design a chalk talk—the million dollar sales pitch
Virtual Chalk Talks	<p>Virtual chalk talks are similar to their in-person counterparts, except candidates typically use a touchscreen laptop, iPad, or drawing tablet in combination with the Whiteboard feature in Zoom or the annotation feature in PowerPoint.</p>		<ul style="list-style-type: none"> • Use introductory slides, if allowed. • Test/practice drawing on the touchscreen device/tablet well in advance. Note that not all touch screen devices allow for a good writing/drawing experience. Some recommended devices are Surface Pro laptop, newer versions of iPads, Illustration tablets; however, these can be cost-prohibitive. Therefore, we also recommend candidates to inquire about the flexibilities on the format and delivery of the chalk talk. • Include deliberate pauses between aims/ideas to be sure the audience has a chance to chime in. 	<ul style="list-style-type: none"> ○ How to Present a Remote Whiteboard Lecture with Zoom, an iPad, and a digital pencil tool ○ Chalk Talk with Zoom: The Basics
Second Visits	<p>Second visit invitations are usually reserved for the final selected candidate(s). Candidates may meet the Dean and other faculty as well as tour lab space, core facilities, campus, and surrounding area. The format of second visits can vary depending on the state of the current events (e.g., COVID-19 pandemic, travel restrictions, etc).</p>	<p>Invitations for second visits are usually extended once a verbal offer is given. This can vary widely, but typically occurs between 1 week-a few months after the conclusion of interviews.</p>	<ul style="list-style-type: none"> • Ask to tour lab spaces and facilities and evaluate whether they will meet your needs. • Critically evaluate the department, institution, and area. Is this where you (and your family) want to spend the next 5-10 years, and perhaps the rest of your career? • If an in-person second visit is not possible, candidates should request alternatives (e.g., virtual tours and meetings, videos of campus/the city, lab floor plans, etc.). 	<ul style="list-style-type: none"> ○ Preparing for a second visit
Post-interview				
Budgets	<p>A spreadsheet containing categorized funds needed to launch the candidate's future lab (costs for 3-4 years), including funds needed to purchase equipment and supplies, in addition to salary for you and your lab personnel.</p>		<ul style="list-style-type: none"> • Beyond asking for the equipment needed, remember to also include funds for travel, professional development, core equipment use, lab/office furniture, etc. • Note what is absolutely needed versus 'wish list' items, and what 	<ul style="list-style-type: none"> ○ A Guide to Setting Up and Managing a Lab at a Research-Intensive Institution

Table 1 continued

Job Search Stage	Overview	Timeline	Recommendations	Resources
Negotiations	<p>Consists of several back-and-forth discussions with the Department Chair that can last ~1–4 weeks. During this process, the proposed budget will likely be modified based on several factors, including availability of shared equipment.</p>		<p>equipment needs to be dedicated for sole access and what can be shared.</p> <ul style="list-style-type: none"> • What and whether items can be negotiated depend on the type of institution. Note that R1 institutions may have more flexibility to accommodate requests compared to other types of institutions. • Research the typical salaries and startup packages for each type of academic position, department, institution. This will help create a basis of what can be expected. • Items that can be negotiated include but are not limited to: salary, summer salary, startup, moving costs, housing incentives, start date, child care assistance, amount of lab space, teaching load, and lab space renovations. • Leverage competing offers to get what you need. • It may be possible for the candidate to negotiate a position for their partner. Once a verbal offer is extended it is important to bring this to the attention of the Department Chair immediately. • It is critical to get all negotiated items in writing within the offer letter prior to accepting the position. 	<ul style="list-style-type: none"> ○ After the Offer, Before the Deal: Negotiating A First Academic Job ○ Negotiating for Novices: A Guide to Negotiating Faculty Positions and Postdocs ○ Negotiating Details in the Academic Letter of Offer ○ The faculty series: Top 10 tips on negotiating start-up packages ○ Negotiating for a faculty position during COVID-19
Accepting/declining offers	<p>After a decision has been made about which position to accept, the candidate must let their chosen institution and all other institutions under consideration know as soon as possible.</p>	<p>Decision deadlines are anywhere between ~2–4 weeks after receiving the written offer.</p>	<ul style="list-style-type: none"> • Candidates should do their best to adhere to deadlines and to avoid unnecessary delays in decision making. • After accepting (signing) an offer, it is important to let the Department Chairs at the other institutions know as soon as possible so they can move down their list of candidates. • When declining an offer, the candidate should use the main mode of communication employed during the hiring process and use professional etiquette. 	<ul style="list-style-type: none"> ○ How to say no ○ Declining a job offer

Slack, articles, books), to gather multiple lines of evidence for the advice, to be mindful of the source of the advice, to think critically about all the advice given, and to draw their own conclusions [8]. For example, advice from peers who recently secured a position may be more useful than advice from those who are less abreast of current practices. However, a good rule of thumb is that if multiple sources offer similar advice, it is most likely worth taking.

6. **Be part of a scientific community.** Form a support group of peers who are also on the job market to share advice, approaches, support, and celebrations. Future PI Slack also provides an anonymous group of peers on the job market that can support those embarking on the journey alone. In addition, it is beneficial to form a virtual or in-person job/chalk talk “club” with other senior postdocs to practice with and receive feedback on delivering these talks.
7. **Network.** A significant contributor to the hiring decision is whether the candidate is a good ‘fit’ and if it is clear that they will be successful in the department [1, 2, 9]. However, this information is usually not widely available. It is therefore critical to build connections through networking with colleagues to gain insights in that regard. Networking can be done both virtually and in person at meetings/courses, on social media (e.g., science Twitter), and through professional societies (e.g., Women in Learning). Candidates may also leverage the networks of previous and current mentors.

Being on the academic job market is undoubtedly a time-consuming and stressful venture that requires much stamina and hard work [4]. However, it is also one of the most exciting and rewarding experiences for a junior scientist. As such, we strongly encourage candidates to enjoy the process, have fun with it, and view it as an excellent opportunity to meet, network, and discuss science with some of the brightest people in the world.

REFERENCES

1. Clement L, Dorman JB, McGee R. The Academic Career Readiness Assessment: clarifying hiring and training expectations for future biomedical life sciences faculty. *LSE*. 2020;19:ar22.
2. Pain E. “Maximize your chances of landing a faculty job.” *Science*, 2013. <https://www.science.org/content/article/maximize-your-chances-landing-faculty-job>. Accessed 18 Aug 2021.
3. Kelsky K. The professor is in: the essential guide to turning your Ph.D. into a job. Crown; 2015.
4. Fernandes JD, Sarabipour S, Smith CT, Niemi NM, Jadavji NM, Kozik AJ, et al. Research culture: a survey-based analysis of the academic job market. *Elife*. 2020;9:e54097.
5. Heller R. A cost-benefit analysis of face-to-face and virtual communication: overcoming the challenges. 2010. January 2010.
6. Kelsky K. Disappointed with the offer? The chronicle of higher education. 2015.
7. Dealing with disappointing offers. 2018. https://www.jobsforscientists.com/wp-content/uploads/2018/10/Disappointing_Offers.pdf. Accessed 18 Aug 2021.
8. Van Bavel JJ, Lewis NA, Cunningham WA. “In the tough academic job market, two principles can help you maximize your chances.” *Science*, 2019. <https://www.science.org/content/article/tough-academic-job-market-two-principles-can-help-you-maximize-your-chances>. Accessed 18 Aug 2021.
9. Wright CB, Vanderford NL. What faculty hiring committees want. *Nat Biotechnol*. 2017;35:885–7.
10. Gibbs KD, Basson J, Xierali IM, Broniatowski DA. Decoupling of the minority Ph.D. talent pool and assistant professor hiring in medical school basic science departments in the US. *Elife*. 2016;5:e21393.
11. Meyers LC, Brown AM, Moneta-Koehler L, Chalkley R. Survey of checkpoints along the pathway to diverse biomedical research faculty. *PLoS One*. 2018;13:e0190606.
12. Diversity Matters. <https://extramural-diversity.nih.gov/diversity-matters>. Accessed August 2021.

ACKNOWLEDGEMENTS

We thank Drs. Denise Cai, Roger Clem, Mario Penzo, and Nancy Padilla Coreano for comments on this piece. Work is supported by K99 MH126429-01 to SB, and K99 MH122228 to KAC. The authors declare no competing interests. Disclaimer: The views expressed in this commentary do not necessarily represent the views of the National Institutes of Health, the Department of Health and Human Services, or the United States Government.

AUTHOR CONTRIBUTIONS

SB and KAC conceptualized, gathered resources, and wrote the manuscript.

ADDITIONAL INFORMATION

Correspondence and requests for materials should be addressed to Sofia Beas or Kirstie A. Cummings.

Reprints and permission information is available at <http://www.nature.com/reprints>

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.