Tips on Getting an Academic Position

Edited by

ZJ Pei
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Foreword
Preface

This book contains tips on getting an academic position. They are from both new assistant professors who have recently got their academic positions and senior faculty members (including dean and search committee chair) who are responsible of recruiting new professors.

Many graduate students have approached me, asking for some tips on getting a faculty position. I thought that it would be nice to have a book containing useful tips to those who are interested in becoming an assistant professor. I hope the readers will find this book beneficial.

I would like to thank all the contributors for their willingness to share their tips and their dedicated work in writing these articles.

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February 11, 2009
Helpful Advice for Getting an Academic Position

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So…you want to be a professor? It’s a tough job to get and will demand a lot of your time and energy, but the rewards can be tremendous. I, for one, could choose no other career. You can imagine my dismay when I learned how difficult it is to actually be hired as a tenure-track assistant professor. With a lot of determination and perseverance, it all worked out. Hopefully, I can now share some advice on how to get an academic position.

I applied to 20 schools, had interviews at 5, and was offered 2 positions. In my view that is pretty good. Here are the steps that I think helped me make my job search successful.

1. Prep Work
Long before you actually start searching for a position, you should have set up the background that will make you appealing to potential universities. Perhaps you can’t change a lot of these things now, but you can make the most of what you have.

Choose a good graduate school – people recognize reputations and will want a student coming from a school that is known to produce a lot a talent. How many students at the school have gone on to successful academic careers? Is the school known for its research in your area? Are there other positive aspects of the school that are beneficial?

Find a good advisor – your advisor can make your dissertation hell, or make it wonderful. You want to work with someone who actually takes an interest in teaching you and who will help you find a future career. Furthermore, you want to find someone who is doing interesting research and is well known in the field. This is not as important as having an advisor who will pay attention to you, but there are advisors out there that can satisfy both criteria.

Have a good dissertation topic – You may have no choice on what you research, but if possible it should be an area that you enjoy. You will spend a significant amount of time getting to know every aspect of your research. You want something that you enjoy working on. Also, the research should be interesting to a wide audience and it should lead to future research. When you write out your statement of research interests and go on interviews you will likely talk a lot about your current work. It is always helpful (but not necessary) if your work is something that is “hot” and will lead to future research.

Write journal papers and present at conferences – As a professor you will be expected to write several journal papers a year and attend conferences. Any work that you have already done in this area will help bolster your application. Journal papers, in particular, are rewarded in the job search. I was unable to publish anything before I started interviewing and received some questions as to why I was not already published. Conferences are a great way to network and get to know your potential colleagues in an informal atmosphere.

Think about a Post-doc – If some of these background items are not as good as you would like, or if you have failed in a job search before, a post-doc position may be a good idea. For my
particular field post-docs are not the norm, but they are not uncommon. They allow you to work on research and generate publications that will help qualify you as a good candidate for a faculty position.

2. Applications
You have done all the prep work and are now ready to start sending in applications for faculty positions. Don’t rest on your laurels here. This is an area that if done well, can send your application to the top of the pile, even if you don’t have stellar credentials.

Find the job ads – To apply for a position you have to know what is available. The sources for job listings may be different from one discipline to the next. I found the listing at ASCE (American Society of Civil Engineers) to be the most complete and easy to use. Others that I used was Academic Keys and HigherEdJobs, though being a larger sites I had to do a lot of filtering to get down to the ads I needed. Once you find a good source, keep checking up on it. You never know when a new position may be posted.

Apply to the right schools – Don’t waste time applying for a position where you know they are looking for someone with a different background. Usually the job ad will say exactly what skills the department is looking for. Although some job ads may be a little vague, some are very specific in what they want. That means the department is looking to fill a particular need and wants someone who can do it. If you don’t meet that need, your application will not be as well received. That being said, some departments may be flexible on what they are looking for, so it may not hurt to try. Make sure that you address how you will benefit the department in your application.

Clearly state how you fit into their program – You must state on your cover letter how well you fit in with the department and all the way in which you can contribute to the program. Re-emphasize this in the research and teaching statements if need be. Do the homework before you send in an application and find out about the university and the department. Let them know you really want the job, how great you will be at it, and how great you will make the department with you there.

Have a well-written statements of research and teaching interests – Search committees are looking through many applications to find the candidates that will best benefit their department. Your statement of teaching and research interests is where you can sell yourself and state how great you are. Be sure that the research interests not only state all the great research that you have been doing, but also where this research is going and what future projects you might be able to find funding for. Also, say where you are going to find funding for these ideas. The statement of teaching interests is also important. Be sure to state your teaching philosophy and how you will motivate students. State how much you enjoy teaching and perhaps what classes you would feel comfortable to teach. Also, make sure the statements are well-written. There can be no grammatical or spelling errors at all.

3. Job Interviews
If you have done a good job with the applications, and the search committee thinks you will benefit their program, you will be called for an interview. This is the most critical time. More than likely the search committee has identified several good candidates. The interview is where you can stand out from the others.
Know your school – Do the prep work. Know all about the department, the professors, and any research activity or centers at the university. Identify the areas that you will fit in with the program and point out those areas throughout the interview.

Prepare a great seminar – More than likely you will be asked to give a seminar about your dissertation topic. Make sure it is a great presentation. Have someone look at it before you go off on the interview. The presentation should appeal to a general audience, but have specifics enough to show you really know what you are doing. Point out areas for future research to give the committee ideas about where you are headed.

Be friendly – This actually goes beyond just being friendly. But you will likely have a whole day of interviewing with lots of talking to people. You need to convey the fact that you will be a good future co-worker and someone they can get along with.

Say you want the job – This sounds simple, but it is very important. Toward the end of the interview make sure they know how much you really want the job. After the interview send a thank-you letter and state again how much you want the job.

Interview the school – This may not be at the top of your list, but hopefully you will be offered more than one position. The interview is the time for you to get the information you need to decide which position you want to take. Look for how well the faculty get along, you want a place with a good collegial atmosphere that will make it easier for you to teach and do research. Check out the city, is this somewhere you can live?

4. Negotiation
   Once you have an offer in hand, you can try negotiating to make it a little more suitable to you. Most offers are fairly similar, but you can negotiate for a little more start-up if, for example, there is a particular piece of equipment that you want to buy. Or perhaps negotiate on the moving expenses or class load. A lot of departments won’t have a lot of wiggle room, but this is your one chance to make the changes needed in your contract.
When I read the invitation email from Dr. Z.J. Pei, the editor of this book, for an article to share my experience of landing a faculty job, the picture of chatting with him in the hallway of the Rathbone Building clearly appeared in my mind. That was in the summer of 2004, after my first job interview with K-State’s Electrical Engineering Technology program, when I was feeling frustrated and helpless because I did not understand the process of getting a tenure-track position. I ran into Dr. Pei, who was taking a walk with his young daughter in the hallway. After quietly listening to my story and learning about my situation, Dr. Pei asked me three questions. It was these three questions that clarified how I should pursue an academic job in a university.

I am going to share Dr. Pei’s three questions to help you in your job search, particularly if you are not from a Nobel Laureate’s research group. My own experience of finding a job in a newly developed engineering program may be of use to you if your Ph.D. comes from an average engineering program and you were not flooded with job offers before graduation. You may also find my job search instructive if, like me, you were born and raised outside the United States. The three questions Dr. Pei asked me during that conversation were: (1) How many papers have you published? (2) Did you write and submit any proposals? (3) How is your teaching experience? Obviously, to have marketable answers to these questions, you need to have been building your professional skills during your Ph.D. program, long before you’ve sent out your first application letter. Satisfactory answers to Dr. Pei’s questions require serious hard work: you have to spend the amount of time it takes to complete your research projects; you have to spend tens or hundreds of hours preparing a manuscript, one round of revision after the other; you have to gain teaching skills by taking your time to teach lectures and labs, grade papers, and answer students’ questions (if you haven’t had opportunities to teach yet, go ask for one. As my experience next suggested, it would be of great help). There is simply no shortcut.

After meditating on Dr. Pei’s three questions, I knew how I should strengthen my employment prospects. During the next year, I worked harder to sum up my project and converted the work into a few publications. I asked my advisor, Dr. Steve Warren, to talk to the department chair for a lab instructor opportunity to add some experience of teaching in the US to my vita which would otherwise be blank. I also put together a few proposals and asked Dr. Warren to revise them so that he could consider submitting these joint proposals to possible funding agencies. All of this hard work paid off: the publications and teaching experience made my CVs look much more attractive. Working as a recitation instructor for one year taught me basic, yet invaluable skills for interacting with American college students (and also made me aware of the fact that there was so much that I could improve). From writing proposals, I first learned about various aspects of research proposals that my other Ph.D. training had not prepared me for: the report structure and format, budgeting, and developing a research plan. While I was not able submit any of my proposals with Dr. Warren, my proposal-writing experience helped me very much...
when I put together my application package because elements of the proposal could be directly converted into my research statement. The benefits of proposal preparation did not stop there: the first fall semester after I joined ECU’s faculty, I was able to modify one of my proposals to respond to ECU’s call for applications for its annual Research/Creative Activity Award. This submission received very positive reviews and was recommended for funding. Although this proposal was not funded by the university, I was able to obtain some start-up support with the project idea.

Carefully-planned academic preparation is certainly the essential element that helps you land a desirable faculty job. However, following a few marketing techniques before you enthusiastically submit resumes will take you many steps further.

- **Talk to others and learn from them.** As mentioned earlier, my chat with Dr. Pei highlighted the key credentials that a search committee would look for and encouraged me to give the highest priority to developing these credentials. Among the other traits that enable one’s success, being able to actively learn from other people is, in my opinion, the most the most important. Seeking useful advice from others is the most effective way to grow, especially in the competitive academic job market.

- **Attend professional conferences.** Being an engineer for more than ten years, I am sometimes hesitant to agree with the saying, “it’s not what you know, but whom you know.” Like it or not, this proverb is true. At conferences, you can show off your research progresses, learn about what others are doing, and enlarge your professional network, all of which will contribute to making you a stronger job candidate. For example, you can find from these conferences a few acquaintances who can write letters of recommendation for you and refer to the work you presented at the conference. Independent recommendations from people in the field usually mean a great deal to your potential employer.

- **Prepare a good application package.** There are many books and online resources explaining what a high-quality package is and how to develop one. Read a few good books before you start writing your teaching statement and your research statement. The job-search resources can give you sense of what these documents should look like, and you can borrow a few ideas that will help you to present your credentials in the strongest possible way. An online search for samples of application letter, teaching statement, and research statement sometimes provides good tips too. Here’s a tip that I picked up from an Internet search: to distinguish yourself from other competitive candidates, make your cover letter relate your background and strengths to the position that you are interested in. Tell the search committee what and how you will contribute to the department and university. For example, say what classes you can teach, how your research supplements that of the other faculty members in the department, what service you can provide to the program and to the community at large. To be able to make this connection between your background and the duties of the desired position, obviously you must do significant homework.
• **Find the right fit.** Post-secondary schools are categorized into many tiers: from top-tier research universities, to national and regional universities, to community colleges. While everyone knows that an applicant’s strong academic background makes her or him more competitive, finding a perfect match between one’s credentials and the position’s duties is actually more important to securing an offer than just impressing potential employers with your research achievements. While top-notch universities are primarily interested in your research potential, often demonstrated by an extraordinary publication record, many other programs want faculty members with a balanced set of skills in research and teaching. Still many others may appreciate a number of years of industrial experience. When you try to connect yourself with the position, you will easily find out whether the job you are looking at matches your background and your personal passion.

• **Be proactive.** We all understand that, like the economy, the job market has highs and lows. It can be extremely frustrating to look for an academic job when many universities freeze their hiring because of an economic downturn like this year’s recession. However, there always are possibilities no matter how difficult the market appears to be. A tough environment means that you need to look for opportunities more aggressively and be better prepared so that, once the opportunity comes, you will not miss it.

While the suggestions above apply to most job candidates in academia, for international PhD students, the preparation for an academic job demands additional efforts. First of all, an international candidate who received most of his/her education from institutions outside of the United States must be aware of the differences between the US education system and that of her/his home country. Different education systems produce different types of students and have different expectations for professors. For example, some education systems may emphasize conveying knowledge more than encouraging independent thinking and problem-solving, which are critical elements of engineering program objectives that the ABET (Accreditation Board of Engineering and Technology) examines. These differences should be reflected in one’s teaching statement. Understanding the culture’s expectations of a professor can be extended to understanding the workplace, the industry, and the finance system in this country; this understanding will give you the context that how a student’s college training makes difference in their career path.

To be competitive, international candidates have to overcome some general barriers. There is always room to improve one’s language skills, but to understand and adapt to the American culture, a melting pot of cultures literally from all over the world, is a much more challenging and enjoyable (though occasionally painful) task. Imagine how much you will stand out from other international candidates if, when you go out for lunch with the interviewers, you can discuss with them their university’s recent football games. If you are a sports lover and you can remember every detail about that college’s sports, congratulations! You are on the right track. Don’t be disappointed, though, if you cannot appreciate the beauty of baseball. Instead, go ahead and try to open yourself to the people around you at your current institution: talk to them, understand them, and learn the way they handle their professional and personal lives; go out to eat with them so that, when you are invited for a job interview, having dinner with your future colleagues won’t be a source of anxiety. The bottom line is that you need to have a sense of the core values of higher education and the American college culture.
Landing a faculty job takes a great deal of preparation academically and a great amount of endeavor for the process of job hunting. This article is by no means a comprehensive guide nor does it offer a revolutionary strategy for a successful academic job search, but it does present steps that helped the author. Hoping it provides a different perspective from less personal articles, I will be thrilled if one finds a few of my hints helpful. At the very least, you now know that somebody has experienced the same struggles and frustrations that you are (or will be) undergoing.

Lastly, I want to let you know that this article is a product of teamwork and reflects the kind of collaborative effort that may help you land a job. Dr. Laureen Tedesco, Associate Professor of English at East Carolina University, provided tremendous editorial feedback and polished my language — don’t be afraid, when strengthening your CV, to ask for help.
1. Introduction

It was a sunny morning on September 8, 2005. A Ford mini-van parked at Jardine Apartment Complex of Kansas State University (K-State), Manhattan, Kansas. I made the final check of the luggage before sitting by the wheel. “Are we going far, far away, Daddy?” my younger daughter asked. “Yeah,” I answered. “What does it look like to be a professor?” my elder daughter asked. “We will find out soon,” I said. “Let me make sure your appointment letter is safely kept.” My wife said while she was looking through all the documents again in her backpack. A couple of minutes later, I started the van and drove the whole family to MCI Airport in Kansas City. From there, we relocated all the way to Klamath Falls, Oregon.

On September 19, I started my new job as an assistant professor at Department of Manufacturing and Mechanical Engineering and Technology, Oregon Institute of Technology (OIT). I got my PhD and became a professor of OIT after thirty months of study at Department of Industrial & Manufacturing Systems Engineering, K-State. Thirty months is a short time for a doctoral student. How could I make it happen? The answer is simple: I took challenges, worked hard in research, communicated well with my advisor, took all the opportunities to prepare myself and, most importantly, I was strongly backed up by my family.

2. Challenges: start of the journey

I had a fulltime job before starting my doctoral study. I had no problem in handling the job responsibilities. Even though life was peaceful and slow, I felt a little upset about the daily routine. I needed more challenges. There is an old saying in industry: “Business as usual will finally put you out of business.” It was odd for a young fellow like me to have an easy life so early. I talked with Dr. ZJ Pei and expressed my concerns. He asked me if I was interested in doing research. Frankly at that time, I had no idea about what his research was. As long as it kept me busy, I would like to try it. So, I joined his group in February 2003.

Everything became so hectic after I became a doctoral student. I worked eight hours in my fulltime job during the day. In the evenings, I spent some time with my family. I did my academic work (course work and research) from around 7:00 pm till 2:00 am. Days, weeks, and months passed. It was surprising that exhaustion did not come along! I just enjoyed everything I did.
3. The goal: the endurance

As a doctoral student, the biggest challenge is to deal with the frustration from research. Doing doctoral research is similar to making an exploration that has never been done before. A big chunk of it is unsuccessful work. Anxiety and anger may easily sprout out of it. How to get calm in front of the failures and get ready to start over quickly? My answer is: keep the goal firm in mind.

Every student can be outstanding even though he or she is not smart. All we need is to find an advisor who effectively inspires us to be outstanding. I was lucky to find such a wonderful advisor. I still remember the first meeting with Dr. Pei in January 2003. He asked me what I wanted to do after I did get my PhD. I said that I did not care. However, he suggested that I should think hard about this because my personal goal would decide everything I would do in my career build-up.

I went back home and discussed it with my family. A couple of days later, I met Dr. Pei again and said that I wanted to find a job in academia. I was a bit scared to say explicitly that I wanted to become a professor. To be a professor sounded impossible to me – something 20,000 feet up in the air. However, Dr. Pei was serious. He took out a piece of paper and asked: “When do you want to be a professor? How about in three years?” “Sure …” I said with lack of confidence. He drew a straight line on the paper: “This is 2006 on the right end of the line. We are here, year 2003, on the left end of the line. In these three years, you need to finish your course work, pass doctoral qualification test, do research, publish several journal papers, get some teaching experience, and apply for a professor position. Besides this, you have a fulltime job and have to work 8 hours a day. Though there is so much to do, I am sure you can make it. Schedule your time toward the goal.”

The GOAL! That is it. Nothing gave me more power than the goal of “becoming a professor”. This was something I had dreamed about. I was working hard to make it come true.

4. Communication: the inspiration

I got interests in research quickly. I owed thanks to the frequent communication with my advisor. I talked a lot with him on research issues. Both of us never hesitated to throw our ideas all out. In one meeting, I expressed my struggle in setting up a theoretical model for the research. We kept pouring out our opinions on how to address the issue. Suddenly, one spark came out and I said that the model looked like “to skim an ice cream cone with a pizza cutter on the top”. We paused and my eyes were open wide. I found the clue!

Three months after the meeting, my first research paper was submitted to an international journal. Four months later, the second journal paper was finished. The third journal paper was done at the end of 2004. And the fourth journal paper was completed in mid 2005. During this period, I also published a transaction paper and two teaching papers.
Communication is essential for anyone, in anywhere, and at anytime. Effective communication with the advisor will create a bunch of surprises that help address research issues. Personally, I never isolated myself in the office.

5. Professional preparation: from the first day on

A professor is the role model in class. A professor profoundly influences the students by knowledge and personality. A professor should be a patient listener, a persuasive speaker, and an enthusiastic learner. One has to go through a stringent training process, called professional development, to become a professor. The professional development should start the day the goal is set.

There is no problem for a doctoral student to be a good listener since all of us have been excellent students at school. To be a persuasive speaker requires proficient language skills. Extra efforts are needed, especially for international students. English language might be the biggest stumbling block for an alien worker in America, no matter in industry or academia. To be fluent in English is one of the top priorities.

I have some work experience in various fields in industry and management. I think that it is very beneficial to be an interdisciplinary person. As can be found in my bio-information, I have kept my academic fields diverse as well. This diversity helped me to get the offer from OIT because it was looking for a candidate like me. A doctoral student should be capable of learning everything well. So, please be the academic “Jack of all trades”.

While I was pursuing my doctoral degree, I sought every opportunity to improve myself professionally. I taught a few sessions in an undergraduate course, attended two conferences and participated in the training workshops on teaching skills organized by K-State. All of these activities enriched my resume.

5. Family support: the corner stone

Several months before I graduated, I started looking for a professor position. In July 2005, I got the offer from OIT. Dr. Pei was pleased to hear the news. He and the whole research group helped me to prepare for the oral defense. The defense was held on August 30, 2005. It went very well. In the end, the committee chair smiled and nodded to me: “You should become a professor.” Dr. Pei responded: “He has already got an offer from OIT!” What a prestige! I was so proud.

I left the defense room to meet my wife. She had been anxiously waiting outside the room for so long. I was too excited and almost passed out in front her. She caught me tightly to prevent me from collapsing. For the past thirty months, nothing would have been possible without her support, encouragement and devotion …
6. Professorship: a journey, not a destination

The path of becoming a professor is challenging. For those who are not determined, who are not proud of being a doctoral student, who are reluctant to sacrifice, and who are regarding themselves as “research labor”, this path might not be a feasible option.

So far, I have been working at OIT for over three years. Teaching, research and services keep me busy. Each day, new challenges come out but new progress is also made. I am full of fulfillment. Professorship offered me an opportunity to set up my new goal: to be an expert educator in higher education in five years.

About the author:

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From A Fresh Ph.D. Graduate to An Assistant Professor? - My Perspective and Experience

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So you are going to graduate with your Ph.D. degree. You look around and find that an academic position may be the best for you, since you like teaching students, enjoy challenging yourself with cutting-edge research topics, and would like to make great contributions to the development of the society and community. That’s great! Go for that!

However, where to start? Is it difficult to get into the academic area, especially as a fresh Ph.D. graduate? What if I do not have any teaching experience? Is it good enough to spend all my time in the lab doing experiment? What exactly professors do? And what shall I prepare? In the following paragraphs, I would like to share my personal perspectives and experience.

Key point one: Be confident.
-- When I was a student, I have always been thinking about what I shall do after graduation. On one hand, I know from my heart that I want to be a professor. On the other hand, I “believe” that it is very difficult to do that. Am I qualified?

Many people may have the similar concerns. “I am an international student, is my English good enough?” “Professors are scientists and pioneers in XXX field. I highly respect them, but I am far away from that level and can never achieve that.”

Although being a professor is always my dream, I never seriously believe that it can come true… Until one day. I attended a series of seminars and workshops organized by NSF ADVANCE program. The program was intended to “increase the advancement of women in academic science and engineering careers by changing institutional culture and practices”. The seminars provided very systematic lectures about the university categories, administration chart, tenure system, faculty responsibilities, and the faculty recruitment process. A few speakers, from full professor to assistant professor, from high level administrator to the candidates coming for interview, were invited to share their personal perspective and experience. The workshop was very hands-on and practical, including resume preparation and interview mocking. Before I attended the seminar, I was just “sitting” and “dreaming” that I could be a professor. After I finished the workshop, I had the confidence and would like to “roll up my sleeves” to start the preparation.

You may ask, “my university does not provide such seminars or workshop, what can I do?”
There is enormous related information in the internet. Take the advantage of it. Your “ignorance” about “how to become a professor from a fresh Ph.D. graduate” covers a mysterious mask onto your dream and makes it appears unreachable. Do some research and collect detailed information about the tenure system and responsibility of a professor. The more you know about the criteria, the better you can prepare, and more confident you can be. Where there is a will, there is a way.

-- “Okay, now I have the ‘will’, where is the ‘way’? How can I prepare?”

**Key point two:** Get yourself experiences in teaching, proposal writing, and attending conferences.

After the NSF ADVANCE workshop, I made up my mind to apply for an academic position. I took a few graduate courses about the education systems and the responsibilities of professors. I got the certificate of future professoriate.

That’s not enough. What does a professor do? Teaching, research, and service. In order to reach these criteria, you need to try your best to get such related experiences before your application. A lot of Ph.D. students are research assistants but do not have any teaching experience. You can ask your advisor or other professors if you can give a talk in his/her class. The more effective way is to attend academic conferences and practice your presentation skills. Another important reason to actively attend conferences is to get involved in the academic network, keep an eye on the latest technology, and receive most updated information. For research, publication is important, while proposal writing is also important and a little bit different. You can volunteer to help your advisor to work on part of the proposal. Even the chance to proof-read a proposal is beneficial because you can become familiar with the format and good writing of a proposal. These are only a few examples of efforts that you can try. The point here is to try your best to get all kind of chances to better prepare yourself, especially in teaching, publication, proposal writing, and conference participation!

**Key point three:** Communicate well with your advisor.

In order to obtain related information and get more experiences in teaching and research, one very important way is to talk to your advisor! Your advisor has been supervising you for years. He or she may be the best person who can judge your work, tell your potential to be a professor, know your strengths and weakness, and provide suggestions on how to close the gap between a fresh Ph.D. graduate and a qualified Assistant Professor. In addition, they had experienced the similar path before they became a professor, and can provide a lot of important advice to you.

Almost immediately after my attendance to the NSF ADVANCE workshop and making up my mind to try on the academic path, I talked to my advisor and my committee members. They were very supportive. Actually, in my following application process, they provided me
with a lot of valuable suggestions and advice in different application stages. They also provided me with a lot of opportunities to “try on professors’ duties”, including participating in proposal writing, presenting my work to the outside reviewers, attending a few academic conferences, advising undergraduate students, and giving invited talk to undergraduate students in class. When I looked back now, these experiences are so important that they really make me different from other candidates.

Key point four: Write a “matching” CV.

You may realize that I use the word “matching” instead of “good” here, because in my opinion, “matching” is more important. A lot of websites have listed their technical hints and good samples for CV writing. Read them and you can write a “good” CV. Here I would like to emphasize “matching”. You need to read the advertisement carefully and understand what kind of people they are looking for. The advertisement may list a broad range of areas that they are looking for and a few of them are related to your field. That’s great! If your background is only relevant to the last area on the list, that’s fine too. The point is that your CV should highlight your related experience and publications to those on the advertisement. Therefore, your CV sent to different universities should be different if they are asking for different expertise. You should be as specific as possible, and reflect your understanding of the uniqueness and strengths of that university. Try to put yourself into the recruiter's shoes and think for that person. What kind of CV do you want to read?

Key point five: Prepare well for your interview.

Now, you have your interview chance. Congratulations! Whether you can get your offer largely depends on your interview performance. The interview opportunity itself means that your CV has won the attention of the search committee. What you need to do is to show them that you are as good as what it is said in your CV. You should demonstrate that you will be an effective teacher during your presentation. More importantly, you should demonstrate that you have the potential to do excellent job in getting external funding to support your exciting cutting-edge research. You may need to do some homework, get an idea about what is the strength of that department, college and university. Find out the research areas of all faculty members in your department and some related departments. One reminder is that currently a lot of research topics are interdisciplinary. Your expertise may bring collaboration with faculty in other departments and this will be a big plus. Try to suggest a time slot to talk with that faculty during your interview. Finally, interview is a two-way selection process. Don't be shy. You can also make your decision if you like the campus and academy environment, and would like to spend years working there.

Good luck!

Acknowledgements: I am grateful to many who have given me valuable suggestions and support to getting me the position. First of all, I would like to thank my advisor, Dr. Anbo Wang, for showing such
confidence in my abilities and encouraging me to perform to the best of my capabilities. He is not only a mentor, but also a role model and a friend. I would also like to extend my gratitude to my other committee members, Dr. Ira Jacobs, Dr. Ting Chung Poon, Dr. Gary R. Pickrell, and Dr. Kristie L. Cooper. I also owe a lot of thanks to the staff and students of the Center for Photonics Technology (CPT) for making CPT a great place for study and research. Very special thanks go to my family.
A Circuitous Route to the Right Balance of Teaching and Research

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If someone says something can’t be done you should ask yourself “How do they really know? Have they tried?” What people really mean when they say something cannot be done is that such a route [to a desired career or situation] is either difficult or has low odds of success. But this does not mean the difficult route should not be attempted if it is right for you. I took a rather circuitous route to my current job but it was not because I was trying to prove anyone wrong. Rather, I did what was best for me at each junction in my career but over time my priorities changed and with each move I became more aware of which career was best for me. I started out earning my PhD at a top research school (Columbia University) and from there I eventually landed my first tenure track job at a teaching centered undergraduate institution (Salisbury University). In time I learned that the best faculty position for me was in between these two extremes. Now, I have come full circle since I am once again at a research school (Drexel University), but I feel that my teaching efforts are still valued in the classroom and the research lab.

Part I: Soul Searching

I began thinking about my career choices in earnest as I was finishing up graduate school. About a year and a half before I defended my PhD, my father died suddenly. I mention this because it is relevant to my emotional state as I was choosing my career. Prior to this I was very driven academically, but after this event I began thinking about careers that would allow me to devote more time to friends and family. My family also had new financial worries – so I entertained the idea of a more lucrative career that would allow me to help my family. Despite these concerns I knew that I have always loved teaching and I had always pictured myself in the role of professor. These desires at times seemed mutually exclusive and so I began some serious soul searching.

I was particularly conflicted in late graduate school, but it is important for everyone, even those who think they clearly know what they want, to do some self exploration before undertaking a job search. Even if the exercise leads you to the same career you initially favored, at least you will have a good answer to the question “Why do you want this job?” More importantly, you may find that the job you initially favored due to proximity, prestige, money, or other factors is ultimately not what you are best suited for given your personality. Beware of the undue influence of others, especially if they do not know first hand what a given career entails. If you pick the job that you are well suited for, you are more likely to achieve success on the interview and in the long term.

In my own self exploration I used the books “Put Your Science to Work” by Peter Fiske and “What Color is Your Parachute?” by Richard N. Bolles. I also spoke to individuals in every career I was seriously considering and I read books like “Alternative Careers in Science” and “Leaving the Ivory Tower.” [Ironically this led me to the traditional field of academia – sometimes considering all alternatives leads you to what is right for you.] The single most important item of advice I got from these books is to start a “job change journal.” In this journal,
I recorded my priorities and wrote about my most enjoyable life experiences that left me with a sense of accomplishment. I also took advantage of “strong interest inventory” exams and personality tests offered at career services. These claim to match you with a profession that fits your personality, and while I cannot imagine that they would work for everyone, for me the tests suggested “professor” (along with other analytical jobs for which I did not have training) and today I am thoroughly happy as a professor.

The result of all this soul searching was that I had no doubt that I loved teaching and I believe that came through in my cover letter and on my job interviews. After discovering that teaching was my true passion, the secondary concerns of money and time seemed less important, and I had the full support of my family. The one concern that still weighed on me was attempting to find a job within commuting distance (~120 miles) of my fiancé’s job. Luckily, there were a number of colleges and universities near Washington DC and a generous telecommuting policy at my future husband’s job made our situation slightly more flexible, but nonetheless I was often told that academics cannot normally choose their location.

At this point I knew I loved teaching but my feelings about research were less clear. Upon finishing my thesis, I had been doing research non stop for nearly seven years in a variety of different situations. In retrospect, I simply needed a vacation from research, but at the time I confused being “burnt out” with having a lack of interest in research. I decided to search for academic jobs at primarily undergraduate institutions. Although postdoctoral research experience can often be helpful in securing such positions, a purely research position did not appeal to me at that time. I also figured that teaching experience would be enjoyable and would round out my résumé in order to secure a job at a teaching focused college.

**Part II: Getting a Job at an Undergraduate College**

I began by learning all I could about what small colleges are looking for. I sought out the advice of professors at small colleges. We chatted about what their jobs entail and how they learned to be effective teachers. We talked about the goals and methods of undergraduate research: many professors told me that small colleges are more interested in student learning and student engagement than just results. I was also told that postdoctoral research experience would be helpful in securing the most sought after positions at the top undergraduate liberal arts colleges, but also I learned that at some colleges (those with heavier teaching loads and lesser research expectations) teaching experience would count as much or more than research experience.

Perhaps most important, I had professors at undergraduate colleges read and critique my cover letter, curriculum vitae (CV), teaching philosophy, and research plans. One of the best pieces of advice was that I should write the teaching philosophy as if I was already a teacher rather than from the perspective of a student. So instead of describing my favorite teachers and then saying that I would adopt their techniques, I would instead say “in my experience I have found that teaching in this manner is effective at engaging students.” After all, I had extensive experience as a TA and a volunteer math and science teacher for high school dropouts preparing to take their equivalency exam, so I should sound like a teacher. It is all about getting the search committee to read your application materials and envision someone who is already a comfortable in front of a classroom.

My research plans included a clear plan for how I would make the research accessible to undergraduates. I discussed which projects would be appropriate for inexperienced students. I spoke about what the students would learn from the research experience and how I would keep...
the students motivated by discussing the applications and importance of my group’s future research. Most importantly, if your research plans are understandable to someone in your field but outside of your subfield, then the committee can envision a student without a strong background eventually learning from you and having a productive research experience.

The CV, teaching philosophy and research plans can be the same for every school you apply to, but the cover letter should be customized to each institution. If possible, find out something about the institution you want to work for through the internet and through contacts if you know anyone at that school. Some colleges are used to having difficult searches where job offers are rejected more often than they are accepted, and for this reason some members of the search committee want to be convinced by your cover letter that you really want the job. [I know this seems counter intuitive – you would not have applied if you did not want the job.] In my cover letter, I mentioned that I was looking for jobs exclusively at undergraduate colleges and exclusively in the vicinity of Washington DC as well as the features of each college that I found appealing. My goal was to make the search committee think that if I got an offer, I was likely to accept.

As I was finishing up my experiments and preparing to write my thesis, I applied to tenure track jobs at 17 undergraduate colleges. I got two tenure track interviews, but two questions loomed large on the interviews. The first was why had I decided not to do a postdoc, and the second question was how sure was I that my thesis would be done in time for the start of classes in September. I tried to assure the search committees that I felt I did not need the postdoc because I had no trouble coming up with research ideas and I was used to working independently in graduate school. I also tried to emphasize that my love of teaching led to me to want to start a tenure track job without the delay of a postdoc. I also tried to assure them that the thesis would be done since I had published twice already and was nearly done with my experiments, as well as the fact that at Columbia most students graduated in five years. Since these job interviews did not result in offers I can only assume that either the other candidates were a better fit or these worries were too much for the search committee. (Landing a tenure track job prior to defending one’s thesis is exceedingly rare in chemistry, and nowadays even at undergraduate colleges most newly hired professors have postdoctoral research experience).

I turned to plan B which was to secure a visiting assistant professorship which would allow me to gain some teaching experience. Many people had told me that these positions are better paying and far more marketable for my next tenure track job search than adjunct positions (the downside is these jobs are harder to get and so I may not be able to find one near my fiancé’s job). I quickly got an interview for one such position, and on the phone the department chair told me that I was their top candidate! I should have reminded myself that I was their top candidate on paper, and I still needed to close the deal. I had to prepare a research talk for the job interview, and I did my best to make my complex research project accessible to undergraduates. It was particularly helpful to have people listen to me rehearse my talks and offer suggestions. Despite all this preparation the job interview offered unique challenges.

I am a person who likes to plan and I feel uncomfortable when plans go awry. So when the professor arrived at my hotel quite late (by ~30 minutes) to pick me up, I felt stressed out. I was late for every appointment all day, and I felt like it was my fault even though it was not. I felt embarrassed to ask for time to use the restroom or to prepare for my talk since we were running so late already. Additionally, it was early in my career and I was not as confident a lecturer as I am now. After years of teaching I can go into a classroom without much preparatory time, but back then loosing the preparatory time made me a nervous lecturer. So the
best advice I can give is if this happens to you, try to relax and do the best you can with insufficient preparatory time. If something goes wrong, try making a joke to break the tension. The more interviews you go on, and the more years of lecture experience you have, the more comfortable you will feel lecturing “on the fly.” After the research talk I got a number of questions from the students, some of which I did not answer well. This interview did not result in a job offer.

Of course since I had been told previously that I was this school’s top candidate, I wanted some feedback when I learned that I did not get the job. The department chair was nice enough to give me some comments, and this was extremely helpful. He said that I did not field the questions from the students well, and this would make the students lose respect for me if I was their instructor. Since then I have tried to anticipate student questions as best as I can, and come up with clear and coherent answers. Teaching experience seems to help develop this skill.

The fourth interview I went on that year went much better. To a certain extent, any job candidate will be nervous on their first few interviews, so getting some interview practice is good. My teaching demonstration was well organized and had been rehearsed in a real classroom several times prior to the interview. Teaching demonstrations are strange things to do, usually everyone in the audience knows the subject already so you are not really teaching. The professors try to act like students and ask typical student questions. Some of the professors cannot help but ask really hard questions that students would never ask. Throughout the interview, I felt like I got along well with both the students and faculty, and I have found that making a good impression on both groups is generally a prerequisite to getting a job offer. I received my first job offer shortly thereafter, and I began teaching as a visiting assistant professor (VAP) at Franklin and Marshall (F & M) College around the same time as I was defending my thesis.

During my year as a VAP and a newlywed, I began the exhilarating yet exhausting job of preparing to teach lectures and labs for the first time. I learned that many hours need to be spent in preparation for every one hour I spend in the classroom. I also learned that teaching methods that were well intentioned did not always work. Most students had a weaker knowledge of the previous course than I anticipated, and students made connections and processed new knowledge more slowly than I expected. I should mention that F & M has very bright students, but when one leaves an environment of exclusively graduate students, postdocs and professors in a highly specialized field an adjustment is necessary to teach bright undergraduates who mostly will not choose to specialize in your field. By the time I began applying for tenure track jobs a few months later, I felt that I had learned an awful lot about how to teach effectively, but I still needed to improve to become an excellent teacher. My teaching philosophy changed significantly to reflect what techniques worked the best in my experience and I said that I had learned more about how to teach in three months as a VAP than I had in five years as a graduate student. Despite the challenges I still loved teaching, and I felt certain that undergraduate college teaching was the right job for me and I said so in my cover letter.

As a VAP, I applied for eight tenure track jobs within a two hour drive of DC and I got two interviews, one of which was at Salisbury University. I gave a teaching demonstration and a brief overview of my research plans. I met with the students and the faculty and I got a sense that we shared the same priorities. At that time I was happy to focus on teaching and do a little research as means of motivating undergraduates to get excited about science. I mentioned that this job was a good location for me given the (relative) proximity to my husband’s job. Amazingly, a few weeks later I was told that the committee made an offer to someone else and
she accepted, but I still got a job offer eventually! The committee convinced the administration to hire two professors that year even though only one job was advertised, since the school was growing and lots of courses needed to be taught. Academia is a competitive job market and search committees are forced to make very difficult decisions, so sometimes it is possible for someone to impress the search committee and still not be their number one choice.

Part III: Deciding to Make the Switch

I began to regain my enthusiasm for research after accepting the job at Salisbury University but prior to leaving F & M. Late in my one year as a VAP I served on an honors thesis committee. I was impressed with the student’s thesis, his presentation, and his enthusiasm for science. I also saw all the seniors give research presentations, and most of them seemed poised and knowledgeable. I felt that the research experience brought something out in the students that the classroom experience did not. I began to see research as a superior teaching tool.

When I got to Salisbury, I was refreshed from my short break from research and I was enthusiastic about setting up a research lab and recruiting research students. I also discovered that the challenge of teaching a new course diminishes with experience and I found that teaching the same course several times eventually grew repetitive. It should be mentioned that some professors never seem to tire of teaching the same courses as much as I did, but my personality longs for new and challenging problems on most days of my job. I also really enjoyed working one on one with research students in my lab. I found I got to know my research students better than the students in my classes and over the long term I felt I had a strong impact on their skills and attitudes towards chemistry. Students that at one time had little interest in a career in chemistry were now considering graduate school and other challenging career paths in science. At Salisbury, I developed a new appreciation for the challenges and rewards of running a research group. I also found that I enjoyed writing papers, applying for grants, and [on rare occasions] having the time to hear, read about and ponder recent research results.

In time, I decided that I wanted a job at a school where a greater percentage of the faculty and the administration conducted and supported research. It should be mentioned that there are some truly excellent researchers at Salisbury U., as well as some people who are supportive of research. However, there was still a cohort that was not supportive or interested in research. Additionally, I wanted to make progress in my research and devote much of my time to training students even though such a vigorous research effort was not required and proved difficult to maintain while teaching four courses per semester. I began applying for jobs at undergraduate colleges where vigorous research programs were both expected and supported as well as a handful of research schools where research was primary but good teaching was needed and valued.

Part IV: Getting a Job at a Research School

In order to have a chance at a more research oriented faculty job, I knew I had to improve my independent research accomplishments. I wrote up three papers on my research results with undergraduate coauthors. I took to the business of writing several grants and eventually I received two small grants while I was still at Salisbury University. I attended conferences and networked with other professors that could help me in my research efforts. While I was improving my CV by developing a positive reputation for myself as a principal investigator, I
was also simply doing what I enjoyed. I was sharing my results with other scientists, educating my students in the process of paper and grant writing, and learning from and collaborating with other scientists. Additionally, I could see that writing up papers was helping my students get into graduate school or find jobs and getting grants provided funding to pay students for learning experiences in chemistry.

I sent out applications to undergraduate and graduate programs with faculty positions in my third and fourth years at Salisbury. My cover letter emphasized my love for both teaching and research and my reasons for wanting to move to a more research active institution. My research plans had become more clear and succinct as a natural consequence of lots of practice at grant writing. I now had significant results and publications to back up my research plans. My teaching philosophy had to be revised to include the methods of teaching that I now found to be most effective (including undergraduate research as a teaching tool) and I removed some naïve ideas and ineffective methods. I had also tried to explain to my references (in person whenever possible) my reasons for wanting to make a change. Many of my references could see first hand that I was actively engaged in research and all of them were given copies of my CV that emphasized my research accomplishments.

In my third year at Salisbury University, my efforts began to pay off. I got two interviews that year. One of the schools at which I interviewed turned out to be less supportive of research than Salisbury University, so I was greatly relieved to not receive an offer (such an offer would have been tempting due to proximity to my husband’s job, but I do not think I would have been happy there long term). The other interview was at a small liberal arts college with an excellent reputation for both research and teaching. I was very impressed with their facilities and the reasonable teaching load would have certainly made it a more supportive environment in which to conduct research. However, I did not receive an offer and I was greatly disappointed. When I asked the department chair for feedback I learned some important lessons about how I was perceived on the interview. I was told that I seemed aloof and some of the students and faculty did not find me friendly.

Upon talking to some of my closest friends and mentors, I came to realize that despite being friendly when in a comfortable situation I can also be quiet and reserved when I am worried about saying the wrong thing. On job interviews that year, I did not discuss the positive attributes of the schools I was visiting enough and I often worried about mentioning the fact that my husband’s job was a reason for wanting to move. (The jobs I interviewed at were 1-1.5 hours from my husband’s job but that was an improvement since Salisbury was 2 hours from my husband’s job. I worried that the schools would consider the distance too far for me to be productive so I stayed close mouthed about my husband and hence much of my personal life when I was out to dinner with the faculty. In that social situation I came off as unfriendly since I had made so many topics off limits and there was much that I did not want to mention about myself and my reasons for moving.) I also came to realize that I was better off just being myself on the next interview: if I tried otherwise I would come off as shy and unfriendly. On future interviews, I vowed to discuss my true reasons for moving with an emphasis on what I found attractive about a given school. I also vowed that if the conversation turned to personal matters, I would be myself and mention my husband without worrying about what they thought of my situation. I figured that if the school did not like who I was, I probably did not want that job anyhow, but I was going to be myself no matter what.

In my fourth year at Salisbury I got my first and only interview at a research school: Drexel University. By this time, my research credentials in terms of papers and grants were
more solid than they had been in my third year. I also mentioned in my cover letter that I felt enthusiastic about starting a vigorous research program. I said that since I was already used to running a research group while teaching four courses per semester, a reduced teaching load should allow me to increase my research efforts to meet the increased expectations. On the interview, I was myself and I discussed my reasons for wanting to move candidly. I emphasized what I found appealing about the research atmosphere at Drexel, but I also mentioned in passing my husband’s job and how appealing it was that Drexel was on the train line to Washington DC. Over the years, I had also become a more confident lecturer and I learned how to improvise and have a sense of humor when confronted with audiovisual equipment that did not quite work as expected. Since I had given myself permission to be myself, my enthusiasm and energy for the research came through, and I got a job offer.

Part V. Post Switch Perspective

As a graduate student, many people had told me that being a professor at a research school is much more demanding and stressful than the job of teaching at an undergraduate college. I no longer think this is necessarily true, or at least it was not true for me personally. First, not all research schools are the same, at top ten institution where very few assistant professors achieve tenure and post tenure expectations are extremely high, the job necessarily can be quite stressful to those who do not thrive in that environment. There are many research schools where the demands are more reasonable, and some people have personalities that are well suited for life as a faculty member at a research school. Second, not all undergraduate colleges are the same; some have very demanding teaching loads. To thrive in this environment one may need to sacrifice one’s research program and multitask quite well. Some undergraduate colleges have unrealistic research expectations due to either a lack of time or resources (in terms of either money or person power). Again, one needs a certain type of personality and creativity in order to enjoy working around these obstacles. After spending time at both undergraduate colleges and research schools, I am now convinced that one is not easier than the other. They are simply different and both are demanding in their own ways. Some people have personalities that are better suited for one than the other. Two years after moving to Drexel, I now think that my personality is better suited for a research intensive environment, and I find this sort of job easier and more fulfilling for myself personally.

However, since I love both teaching and research, I could also be happy in a variety of situations where both teaching and research are truly valued. I think I could have been happy at a liberal arts college with an excellent reputation for supporting research or a research school with even greater research expectations as long as teaching was still valued. I would say though that as you go about your soul searching, you need to figure out how you feel about the three aspects of academic life: teaching, research and service. Those who strongly prefer teaching are perhaps suited to undergraduate colleges, those who strongly prefer research are best suited to research institutions, and those who love both and are somewhat flexible could perhaps be happy at many different types of institutions, but it is easy to get confused along the way. The path I took to my current job was not a well marked or well worn path, and I am certain that there may have been a faster route, but at each turn I did what was best for me. I eventually found my way to a position that suites my personality through a combination of hard work and a little bit of luck, and I believe I am a better teacher and researcher due to the journey.
1 I have not talked much about service in this essay. I feel that service to one’s university is important and I strive to do a good job when I am called upon to serve, but service to the university is my least favorite aspect of academic life.

2 It is hard to separate luck from hard work in evaluating my own experience. My startup funds at Salisbury had just begun to run out as I got my first grant at the end of my first year of teaching. I also was lucky to get some rather expensive pieces of equipment from Salisbury University that proved crucial to my research effort. I got excellent students in my research group, two of whom published multiple papers as undergraduates and helped train the younger students in my group. Many of my colleagues at Salisbury and nearby research schools like University of Delaware were willing to advise me in my research efforts. I believe that luck played at least a minor role in many of these advantages; without these advantages it would have been quite difficult for me to publish three papers and move to a more research active institution. If I had been unable to acquire sufficient research credentials at Salisbury University, I would have been needed to get research experience some other way: either through a research sabbatical or I could have left Salisbury to pursue a postdoctoral research position. Just before I got the interview at Drexel I was considering these options. Some professors who have made the switch from an undergraduate college to a research university needed to use these options to build up their research reputation. I am lucky that Drexel University was willing to consider me despite my non-traditional background.
Tips On How To Find An Academic Position

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I got my Ph.D degree in 2007 from Purdue University and joined Illinois Institute of Technology the same year as a tenure-track Assistant Professor of Mechanical Engineering. The following are some experiences I want to share on how to find a faculty position in a university in US, and certainly some of them may or may not be right.

1. It seems to me that the most important thing is that your background really matches the position. If your background does not really match the position, even though you package your application materials, the reviewers can still find that out based on your previous experience and publication record.

2. Your application materials determine if or not you can get an interview opportunity. In your CV, the following may play the most important role during the first-round screening process: your research and teaching interest, your publication record, and the university where you got your PhD degree (and the school where you did your post-doctoral research if you have this kind of experience), etc. In your research interest description, you may describe multiple projects you are interested in, but do not list too many things to avoid giving the search committee an impression that you are just giving them a “shopping list” to pick the one they like. You should have some “novel” ideas in the research interest description, but make sure they are feasible.

Try your best to minimize the grammar and spelling mistakes in all the documents you submit. The paper quality of your documents at least should not be too bad.

3. If your application package is impressive to the search committee, you may get a phone interview opportunity. They certainly want to test your English, particularly if you are not a native speaker. Some other typical questions may be (but certainly are not limited to): what is your research interest and teaching philosophy, how you will set up a good research program if you join our school, how you plan to attract external funding, and do you have proposal writing experience (if not, how you can convince that you can write a good proposal?), etc. For me, the phone interview took place in January. I think the timetable may be different for different universities.

4. Typically, if you pass the phone interview, you will soon hear from the school, inviting you for a campus visit. Again, the exact timetable should depend on schools. During the campus visit, you will meet lots of people. What questions they may ask totally depend, but generally the questions will focus on research and teaching. Be confident during the talk (but also be gentle and polite). Sometimes, you also need to be a good listener. You need to show that you have a real and sincere interest in research and teaching.
Probably the most important thing during the campus visit is your seminar talk. When you prepare it, make sure that people outside your specific research areas can understand what you are doing and why you are doing this. But on the other hand, you also need to include complicated equations and theories involved in your research, which can show that you have a strong academic background and your research is at a very high level. Make sure that your powerpoint file can be appropriately opened, and the animation file you want to play really works. Also, practice the presentation over and over again to make sure that it follows the specified seminar time length. Do not be too long or too short. You need to speak sufficiently loudly, and have good eye contact with your audience. A good sense of humor may help a lot, but be careful that your joke is not offensive to someone. When someone asks a question, repeat the question before you answer it so that other people know what you are explaining.

At the end of the presentation, you can also introduce about your future plans to set up a good research program and obtain external funding. For example, what is the NSF or NIH program you plan to target at? You can also briefly summarize your previous research accomplishments. For example, how many papers you have published and what are the awards you have won. But be careful not to spend too much time on this. You need to use the technical content of your research itself to convince people that you have strong research capabilities.

5. You still need to have some follow-up communications with the university after the on-campus visit to show them you are still available and interested in the position. However, do not push too much. It is really a painful experience to wait for the result to come, but your patience will eventually pay off. Continue showing your interest in the position even after they have made the offer to someone else, because the offered person may or may not accept that.

6. After you get the oral offer, you need to negotiate on the startup package. For the salary part, I don’t think the negotiation can change it too much (certainly this may not be true in some cases), and I think it may not be a bad idea to just accept the standard amount they offer. For the student support and equipment money, you certainly should not ask more than they can afford. But on the other hand, do not assume asking less is better. I think most universities prefer giving you more startup money if that is necessary for your success.
Persistence, Consistence and Patience
(My experiences on how to find an academic position)

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I am working as a female assistant professor in Mechanical, Materials & Aerospace Engineering department at University of Central Florida (UCF). Graduated from Purdue University, my Ph.D. research topic focused on the development of intelligent control and optimization schemes for complex multivariable systems using soft computing techniques. The integrated setup of software, hardware and sensors for a MAZAK grinding machine represents a concept of a “smart” machine with self-learning and self-adapting ability that will improve its control accuracy, efficiency, and reduce the overall operating cost. This research requires multi-disciplinary knowledge, including intelligent systems, system dynamics and controls, manufacturing, mechatronics and automation, which provides me a challenging but precious opportunity for my future career preparation.

The first of my experiences that I want to share with you is that the most challenging work gives me the most rewarding return. I remember the time when I struggled in 2003 because of the research difficulties I was facing. I designed a number of control schemes for the grinding machine. But due to the complexities and uncertainties of the grinding process, none of my control schemes performed as I desired. I felt hopeless and almost thought about quitting my Ph.D. study. In retrospect, I thank my advisor, Dr. Yung Shin. It is he who shared with me of his wisdom that research needs continuous, long-time dedication. Almost for everyone, there may be some point at which he/she will feel hopeless. He encouraged me to keep working on my research and gave me precious advice in research direction. I followed his advice and finally successfully developed and tested the intelligent control algorithms on the MAZAK grinding machine. Based on the outcomes of my graduate study, I published seven top-tier journal papers and co-authored a book with my advisor with CRC Press which was published in 2008. Although my research topic seemed extremely unachievable to me in 2003, the determination and persistence on research led me successfully to find the solution and gave me the best return in my research career.

The second of my experiences is being patient when doing research. Research knowledge needs to be built up with time. Putting consistent efforts on research over the entire Ph.D. study years is necessary. Nobody can write good papers or have outstanding research results during a short period of time. From my experience, consistence and patience are as important as, or even more essential than, motivation and enthusiasm. Being patient is also advice that I want to share with those Ph.D. students who want to secure an academic position. I did not receive a phone interview opportunity when I applied to the faculty position for the first time in 2005, which was the last year of my Ph.D. study. I was disappointed and lost my confidence as a new Ph.D. graduate who was ready to enter the academic world. My advisor instructed me to be patient and suggested that I apply the next year. I followed his advice and stayed at Purdue as a post-
doctoral researcher in my advisor’s research group, and submitted my application for the second time. This time, I received multiple phone interviews, two on-site interviews, and finally was offered an assistant professor position from University of Central Florida. One lesson I learned is not to lose the hope in the first year’s trial. The academic job market can vary in different years. Being a post-doctoral researcher can provide a good opportunity for you to learn new techniques or improve existing techniques, such as writing proposals, doing research, improving teaching skills, and building up network connections with others. A post-doctoral researcher position can bridge the gap from a new Ph.D. graduate to a successful future professor.

My last experience is to always be prepared. Opportunity will always be there for the person who has good preparation. The Ph.D. student who has the goal to enter academia should be highly self-motivated and be prepared for the future challenges of a research and teaching career. During my Ph.D. study, I worked diligently on my research and started to build up my published records from the first year. I had been a teaching assistant for several semesters which formed a solid foundation for my teaching skills. Learning how to network in academia is another important skill, if not the most. During my Ph.D. study, I knew some researchers from other universities during the workshops held in my department or in some societies’ annual conferences. The networking connection later brought me multiple potential collaboration opportunities after I came here at UCF as an assistant professor. Interviewing skills also play a critical role in securing the academic position. The person who is invited to the on-site interview must demonstrate his/her good personality and communication capability, and therefore convincing the interviewers that he/she is the most suitable candidates for the position. All these factors need good preparation over the years.

At last, what I want to point out here is that obtaining an academic position is definitely not the happy ending period. It is the beginning of a new challenging career ahead of you. Only those people who are really self-motivated and dedicated in academia will feel happy and rewarding about the time spent on teaching and research. It is a precious life-long learning process. Yourself should be excited in this unique career path and also should be able to get your students motivated and involved in your classes or your research activities. Do not complain about the challenging research topic that you may be working on during your Ph.D. study. It will bring you an unexpected opportunity in future. Be persistent, consistent, patient, and be well-prepared to build up your academic records step-by-step. After years of Ph.D. study and/or years of post-doctoral research, the academic position will arrive and you will be a successful educator and researcher.
Finding an Academic Home

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It seems searching for and securing a faculty position often happens during an already busy time in one’s life – while completing a dissertation, wrapping up post-doc research or while working in a full-time position. My aim is to provide you with advice, both general and specific, to help make your search more manageable and enjoyable. My advice comes from a conglomeration of sources: advice I received from my mentors (Patricia Flatley Brennan, Stephen Robinson, David Zimmerman and John Lee in particular) during my own search for a faculty position, my experiences in my search, and experience serving on search committees.

As a caveat, I was trained in colleges of engineering at large public universities and was fairly certain I wanted to end up working in a similar environment. While much of my advice is likely relevant for those wishing to secure a position at a smaller and/or private institution, or in a business school, you may need to filter out some of my suggestions and seek guidance from people familiar with these other environments and their hiring policies. A few pieces of general advice to start with:

*Be systematic and thoughtful in your search.* Most application packages will include some combination of the following materials – a cover letter, your CV, a research statement, your teaching philosophy, an abstract for your interview job talk and a list of references. I suggest you create a general, polished version of each of these documents, which you will then tailor for each application you submit.

*Find a mentor or mentors to guide you.* You can start with the folks who have written chapters in this book to serve as initial mentors. They could provide you with a breadth of advice related to the academic job search process. I also recommend finding a variety of other mentors who may be able to answer your questions. Possible mentors may include young faculty members who recently went through this process, and/or more senior faculty members who have sat on search committees and advised other soon-to-be faculty members as they conducted their searches. It is your job to ask questions, listen and synthesize their advice. Do not be surprised if you hear conflicting perspectives from your mentors!

*Know where your ‘true north’ is.* Above all, finding and accepting a faculty position is a very personal experience. In the best case scenario, the position you accept will provide you with a place where you will thrive both personally and professionally for years to come. I suggest reflecting on and discovering your personal values so that you will be more keenly aware of which opportunities support and which ones conflict with those values.

I’ve structured the remainder of my advice around the job search process, from searching for opportunities to evaluating an offer. This process gives you time and reason for self-reflection, to
look back at where you came from and forward to where you would like to go. Enjoy the process!

**Searching for and Evaluating Opportunities.** You can find most job openings posted in the ‘tail section’ of your professional organization’s regular publication or on their website. In industrial engineering, these publications include *Industrial Engineer* magazine, *OR/MS Today* and the *HFES newsletter*. While your professional organization is a good place to start your search, this is certainly not the only place to locate opportunities.

Do not keep your job search a secret. Your advisor, other faculty members and your department chair or head often receive job postings via e-mail list serves. If they know you are looking for opportunities, they can help forward these postings to you. These e-mails are especially helpful when a university is conducting a search over a short time period. In these cases, the professional organization publications may not provide them with quick enough turn-around. Faculty members you have met at conferences may also be able to alert you to opportunities at their campuses.

You’ll likely come across more opportunities than you will apply for. As you look at job postings, ask yourself both professional and personal questions such as:

1. Do my experiences and interests align somewhat closely with those listed in the posting?
2. Are there people in the Department, College and/or University with whom I would want to work?
3. Is the University located somewhere I would enjoy living?

I suggest you create a spreadsheet to track your opportunities, your evaluation of these opportunities and relevant deadlines.

**Creating and Submitting Application Materials.** I previously mentioned that most application packages will include some combination of a cover letter, your CV, a research statement, your teaching philosophy, an abstract for your interview job talk and a list of references. You can create a general, polished version of each of these documents as early as you like. If possible, collect a few application packages from young faculty members to use as guiding examples. This is a good time to ask your mentors to provide feedback on these documents.

Spend time writing a thoughtful cover letter, as it is one of the most important documents in your application. Your cover letter is your chance to have a conversation (albeit one-sided) with the search committee. The search committee will be looking through many, possibly hundreds of application packets and your cover letter allows you to frame how the committee members look through your application materials. Ideally, your cover letter will concisely convey to the committee who you are, what research and teaching experiences you have, what your research aims are, who in their department you envision yourself collaborating with and in what fashion, and why you are a good fit for the position. As you write your letter, look at what keywords the committee used when they wrote the posting and try, if possible, to incorporate those keywords into your cover letter.
Your statement of research and teaching philosophy allow you to demonstrate that you can coherently describe your research and teaching visions. Try to include both short- and long-term aims in your research statement, provide context for the importance of your research and include funding agencies that would be interested in the types of research you conduct.

Use your teaching philosophy to state what your goals are for your students and how you, as their teacher, will help them achieve these goals. Also include courses specific to the institution that you would be interested in teaching and courses you would like to develop.

A word about your references. First, you must ask your references if they are willing to serve as references. Knowing they may be contacted, your references will likely start making mental notes about you. Your references do not want to be surprised to receive a call or request for a letter and you do not want them to be surprised either. Your reference’s image of you will inevitably decline if you put them in an unanticipated situation. Second, ask people who know you well to be references. Search committees are not looking for generic letters of recommendation. Finally, do not want to assume your references will automatically provide a positive review on your behalf. You may want to ask them something to the effect of, “Would you be willing and able to provide a positive review of me as I apply for faculty positions?”

**Your Interview Visit.** If you have been asked to come to campus for an interview visit, possibly after having a telephone interview, be excited. Out of a multitude of application packages, yours stood out to the committee and they want to see and hear more! While preparing for and going through this on-campus interview may be time-consuming and somewhat nerve-wracking, keep a few things in mind. First, if you have been asked to come for an interview visit, the search committee wants to like you. They likely did not invite many people to campus and the position is, in effect, yours to lose. Second, remember to have fun. Even if you go on the interview and are not extended an offer, or you do not accept an offer, you will likely meet people during your interview who you will want to stay in touch with throughout your career. Finally, as you prepare for and go through your interview visit, keep in mind that the committee is looking for evidence of two things:

1. You will be successful as an independent researcher and teacher
2. You will be a good colleague

You have specific times when you can provide evidence to the search committee of the above two traits: your job talk, individual meetings and dinner. Your job talk, during which you present your past research and your future vision for your research, is a key element of your interview visit. There will likely be students and faculty present who are not in your immediate discipline. Make sure these individuals can follow your talk. At the same time, you need to demonstrate your technical competence to those in your direct field. The only way I know of to make sure you have achieved this balance of understandability and technical competence is by practicing your talk with a variety of audiences who will give you honest feedback. Your job talk is also the only time the committee and your future colleagues can judge how you would conduct yourself as a teacher. They will want to see that you can make complex concepts both understandable and relevant.
As you practice your job talk, practice how you answer questions and respond to interruptions. You may be asked questions where: 1) you don’t understand what the individual is asking, 2) you disagree with a comment someone has made, or 3) you do not know the answer to the question. You need to find polite, confident responses to these questions and comments. Acting in any way aggressive, dismissive and/or defensive can significantly detract from what would otherwise be a strong presentation.

The meetings and dinner you have throughout your interview are your best time to get to know your future colleagues. I see these meetings as largely relational. Even though the meetings are short and there is a lot of information you would like to convey to each person, you should not be the only one talking during these meetings. You should know who you are meeting with before you go on the interview. Look at the web page of each person you will be meeting with and jot down a few questions you would like to ask each person. Your questions might relate to possible research collaborations, teaching experience, their experiences working with the university administration, or how they enjoy living in the area. These questions can help you understand whether the position will be a good fit with your values. I would also suggest meeting with graduate students to ask about their experiences in the program. They will likely be more candid than faculty members. If possible, ask to meet with the departmental administrative staff. These staff members will be your allies as a new person trying to figure out how the department and university function. Meeting them will help you gauge the collegiality among the department faculty and staff.

In general, be yourself but stay positive and congenial throughout your interview. The day(s) will be long and tiring, but avoid complaining. Don not speak negatively about your current work environment or colleagues. Finally, by the end of your interview, be able to state concisely what specific attributes about the position are attractive to you, what additional questions you would like to have answered, and why you are a good fit for the position.

**The Offer.** Again, if you have received an offer, be excited. The people giving you the offer believe in your future success and want to be a part of it by being your colleagues! As I stated initially, accepting or turning down an offer is a very personal experience. As I stated earlier, you should reflect on your core values because you need to be confident that the position you have been offered aligns with your values. The following questions may or may not be a part of your deliberation:

1. Are faculty members supportive and collegial?
2. Is this an environment where I can be successful?
3. Is there diversity in the faculty members? In the student body?
4. Will I be able to interact successfully with the undergraduate and graduate students?
5. Are junior faculty members involved in departmental decision-making?
6. Can I picture myself having a life here?

If you’ve decided to pursue an offer, or multiple offers, you need to keep your end goal in mind – to be a successful, tenured faculty member. Your negotiations regarding your offer should always keep this end goal in mind. In other words, ask yourself, “What do I need to see in an offer to become a successful, tenured faculty member?” Elements of your needs include a
commensurate salary, office and lab space, and startup funds. You might also need a reduced teaching load and/or an opportunity to teach specific courses for which you feel well-prepared.

Regarding your startup funds, you should consider not only their amount, but also when and if they have an expiration date and what the funds can be used for. Ask whether the funds are a large single pot or are sections of a pot budgeted for certain items such as student funding or travel. The more flexibility you have in the timing and use of your funds, the better.

Finally, you should be able to negotiate a trip to visit before you accept the offer, so family or others moving with you can see the campus and town. You should also be able to negotiate a trip to locate housing.

I hope this advice has been helpful in preparing for and carrying out your academic job search. Best of luck!
The focus of this chapter is about how to shine (not just survive) on the day of the interview. I have been involved in interviewing faculty candidates all three years I have been at my institution, and, of course, I recently went through this process myself. There is plenty of advice out there about how to be offered an interview and how to write an application. I won't cover those topics much, but they are both important to the job search process. I recommend reading some of the references provided, especially Dantzig (2007) and Feibelman (1993), to get started with your academic job search.

Preparing for the interview

One of the best ways to prepare for an interview is to submit an excellent application. There are many pieces to a good application, and I focus on just a single aspect here. When faculty read applications, they want to see who would be a “good fit” in the department. A good fit is highly subjective, depending on who is reading the application. One strategy for appealing to a large number of faculty that read the applications is to tailor your application to the institution. This takes some extra work, but it pays off. For your research statement, highlight how the applications or methodologies fit in well with other research done in the department. Many departments have a particular application area that many faculty partake in (e.g., health care, homeland security, life sciences, transportation). By highlighting how your research interests fit into the existing framework, you improve your chances of being invited for an interview, since potential collaborations are obvious. For your teaching statement, list specific courses you are willing to teach (list the rubrics and course numbers), as well as courses you would like to develop. This, too, helps to show how you could fill teaching gaps in the department.

It is helpful to identify the search committee before your interview, and I would recommend that you ask which faculty members are on the search committee. Even though all faculty have input regarding who receives an offer, some votes count more than others. Search committee members generally get to know you the best during the interview process, and therefore, their input usually counts the most. Identifying search committee members early on can help your chances as long as you make sure that these faculty members understand your research and teaching philosophies as well as your career goals.

Be prepared and make a contingency plan before your interview. Print out your itinerary and travel plans. Don’t be shy about asking your host about the details. The most important thing to do when preparing for your trip is to get emergency phone numbers in case travel problems arise, particularly a phone number for the person who is picking you up at the airport (an office number is not enough). Give everyone your cell number. Travel problems (e.g., delays, being bumped from your flight) are frequent, and you will not do your best if you are frazzled after
missing your ride at the airport. Before one of my interviews, I was bumped from my original flight, which was in the evening the night before my interview. The only way to get to the interview by the morning was to take three other flights to arrive at my destination at about 3AM the day of the interview. In between flights, I played phone tag with my host to arrange a ride from the airport. Although I was extremely tired during the interview, I was relaxed enough to give a good seminar.

At the interview

Congratulations for being invited for an interview! At the interview, be yourself and stay relaxed. Each faculty member you will meet with has a different perspective and is invested in the job search differently. All want to get to know you. Make sure to come up with a long list of questions about the department, college, university, and city before your trip, because many faculty members will rely on you to direct your meetings with them. Having many questions ready also shows that you are interested in and serious about the position. During the interview, you will be shuffled from meeting to meeting with virtually no down time. It is hard to be “on” during all of your meetings. Always be "on" with the search committee, department chair, and dean (see additional comments below). In general, you can relax more with junior faculty and with faculty outside of the department. Junior faculty recently went through the interview process and tend to empathize with the anxiety that you may be feeling. Meetings with faculty outside of the department usually occur to set up potential collaborations, rather than to assess whether an offer should be made.

The importance of the seminar cannot be overemphasized. This is your time to talk about what research you have done, what you plan to research in the future, and how your research interests align with the faculty where you are interviewing. In addition, faculty watching your seminar will assess your ability to teach, the depth of knowledge about your research area, and your passion for research. A lot is riding on the seminar. It is hard to sound excited about your research when you are nervous about your seminar. However, you will have a chance to make a second impression during the interview as you meet with faculty members.

It is important to impress the dean. In my experience, the dean definitely has an opinion on each candidate and has ultimate veto power regarding who receives an offer. Your meeting with the dean is a good time to find out more about how your specialty within your field fits into their vision for the college. You should leave the meeting with the understanding of how much support the dean has for faculty with your background. This is particularly important if you are in a small field (e.g., nuclear engineering) or a field that exists in different colleges at different universities (e.g., operations research), since these specialties potentially could be phased out of the college by the time you would go up for tenure. You should also learn about how the dean views the tenure process. For example, are faculty members judged on their own merits or do multiple junior faculty members compete for a single tenured position?

In addition to dazzling the search committee with your research and teaching, make sure to find out enough about the position and the location to make an informed decision, should you be made an offer. I encourage you to list the criteria that are important for your career and personal life (consult your significant other). Rate each job offer according to your criteria. Immediately after the interview (i.e., on the flight home), write down your impression of the position, listing
the benefits and drawbacks. You’ll be busy and tired after interviewing that it will be hard to remember the details if you put this off. In addition, I recommend reading a book on decision making to help you make a decision that you can feel good about (see Hammond et al. 1999, for example).

**Tips for Women**

Several aspects of the academic job search are unique to women, and I offer some advice and explanation here. Some of this advice came from Ellen Spertus's (2000) excellent article about managing a massive academic job search for the "two body problem." Some explanation of my circumstances are necessary here. When I was undergoing the job search, I was already married with a one-year old child, and I was planning to have another child before going up for tenure. We did not have the classic two body problem, since my husband is not an academic, but his career was one of my top concerns when choosing a position. He planned to look for a new job after I accepted a position.

It is illegal for the host institution to ask you about your personal life, but it will happen occasionally. No one reminds me not to ask before interviews in my department, so I understand how innocent mistakes can occur. When I was asked if I was married or had children while interviewing, I never got the impression that this was asked in an effort to discriminate against me, but that is surely within the realm of possibility. In some cases, I was asked if I had a spouse because they were sincerely interested in helping my spouse find a job. In other cases, I was asked if I had or was planning to have children to open a dialogue about the local school system and support within the university. If someone asks you if you are married or if you have children, there are many ways that you could respond. I recommend planning a response ahead of time so that you are not caught off guard when it happens. Do whatever feels comfortable.

When I was interviewing, I decided to be as open as possible about my family and volunteered the fact that I was married and had a child. By doing this, I wanted to learn how a junior faculty member with children would be perceived by the department and institution. Since I was planning to have a second child pre-tenure, I wanted to be certain that there was a good maternity leave policy in place. Likewise, my husband planned to look for a job as soon as possible, and I wanted to give him a head start on the job search process by starting the dialogue during the interview rather than after an offer was accepted.

Don’t be shy about asking about family leave policies during the interview. I have noticed that faculty candidates (and even new faculty members who have already accepted a position) often refuse to ask about these policies in fear of retribution. That may be a real fear, but not having the support of your department and institution when starting a family is also of concern. During the interview, faculty explained family leave policies and stories about faculty that had children pre-tenure, since I volunteered the fact that I already had a child. This was an extremely useful way to gather information. Moreover, I decided to ask each department chair and dean about why women had or had not been tenured in the department to get a sense of how women fared in the local climate. All responded favorably, and seemed eager to showcase policies that were helpful for women faculty.

The last piece of advice I want to offer women is about etiquette during an interview. As a
faculty candidate, the host institution is "courting" you, and being polite to you is part of the process. Your hosts will be doubly polite to female faculty candidates since you are both a guest and a woman. As a guest, accept your host’s hospitality; let your hosts pick up your luggage, open doors for you, get you water when you are thirsty, etc. It may feel unusual to go through an entire day without opening a door for yourself, but this is not the time to make a political statement and insist on opening your own doors, for example. If this is an issue, please refer to Spertus (2000), who explains this point wonderfully.

Acknowledgement

I would like to thank Brian J. Albert for helpful comments on an earlier draft of this manuscript.

References


To be ready to pursue a faculty position at the assistant professor level, I would like to suggest you prepare yourself in the following three aspects during your Ph.D. study: teaching, research, and service.

Teaching experience (especially in teaching undergraduate student) is a very important factor for your job hunting in academia. Most of Ph.D. students had such an experience as a teaching assistant, but some of them actually only graded homework or exam sheets for their supervisor. This is not the teaching experience I am talking about. A teaching experience which can add credits to your resume is to teach undergraduate students in classroom face to face. You are supposed to prepare syllabus, make several lectures, assign quiz and homework, grade mid and final exam, organize projects, and so on.

As more and more universities are becoming research intensive, a very strong research background is also desired. The strong research background can be reflected from your publications, presentations at conferences, involvement in writing proposals. Generally speaking, most of schools prefer interviewing those candidates who have experience in industry or in academia as a postdoctoral fellow. If you do not have any industrial or post-doctoral experience, I would like to suggest you put more time and effort in writing proposals with your supervisor during your Ph.D. study.

I still remember some details when I was interviewed by our college dean. He asked me some questions from my resume. When he noticed that I ever served for an international students association, he asked me to explain more details about it. He looked very happy as I said this is a volunteer position and I was responsible to help those new international students settle down. Besides a strong background in teaching and research, you are expected to be a sophisticated man or woman who can get along well with most of your colleagues and willing to sever for your department, your college, and your school.

Finally, I would like to point out that the school is not looking for well-established experts. They are actually looking for those candidates who are willing to devote themselves in pursuing their academia career to become well-established experts.

Have a good luck!
I believe everyone who is interested in an academic job knows the importance of preparing a professional resume and behaving well in the interview process. Many articles have talked about those topics. Here I would like to talk about things that I think are more important: build your credentials before you start to look for an academic job.

1. Know what are expected to an assistant professor

It is very important for applicants to know their job role. Usually for a tenure-track assistant professor in a research/education university, you are expected to establish a research program, to apply for external funding to support your research program, to publish journal articles regularly, to teach graduate/undergraduate level courses, and to provide services to your department, college, institution and profession.

If you understand the expectations to an applicant above, then it is not difficult to understand how you and other applicants are reviewed in the screening process, which is just to see if an applicant has the potential to meet those expectations once hired. How do you convince the search committee that you DO have such potentials? The answer is: show your credentials as a productive researcher, a competent teacher, and an active participant. Most of this work has to start since the begging of your Ph.D. study.

2. Be a productive researcher

How do you describe a productive researcher? I believe you know some successful professors around you. Go talk to them, or look at their resumes and see how they describe themselves in terms of research. You will find out that you need to focus on the following aspects to be regarded as a productive researcher.

2.1 Journal articles

Journal article is probably the most important indicator of the success of a student in research. I cannot imagine how a full-time Ph.D. student who did not publish a paper during his/her study could succeed in academia. If you look at the resume of those new assistant professors, you should not be surprised that a lot of them published more than 2 papers a year on average, which means in a four year period of Ph.D. study many of them published over 8 peer-reviewed papers. You may compare your own achievement with them. If your publications are close to or greater than that number, you may be competitive in research as an applicant for an academic job.

Writing journal articles should start early. You do not want to wait until the last year when you have completed all experiments to write papers. It will be too late for your application because some journals take long time to publish a paper. I always encourage my students to write a paper when each segment of study is completed, which also easies
writing of dissertation. I did that myself too when I was a student. I wrote and published papers at each stage of my research. When I was in my fourth year, I just integrated all papers together into the dissertation. Students also get more confidence when they publish more papers, which is important in job hunting, especially in the interview process.

2.2 Conference papers/presentations

Some students may think conference papers are not so important as compared to journal articles. I know some students never go to a meeting to present a paper. However, it seems to me conferences papers are equally important as journal articles, if not more.

Reason #1: attending a conference is a good opportunity for students to broaden their horizons. You will probably present only one paper in a conference, but you will listen to dozens of presentations. For many times I found myself refreshed and motivated by those talks in the meetings. I learned more than I offered.

Reason #2: conference is a place where social network is built. I have a friend who is a successful professor. He told me that every time when he attends a conference, he forces himself to know at least one person. When he said “know a person”, he meant they should actually exchange research ideas in details and keep contact after the meeting. Year after year, he built a big social network and has established good collaborative relationships with many of those people he met in conferences.

Reason #3: conference is a stage where you can show-off and promote yourself. Your excellent presentation can impress many people, including those who will someday be in the search committee for you.

Reason #4: Presenting a paper in a conference is a good opportunity for students to practice and improve communication skills. To some extent, delivering research results are as important as finding them.

Because of the reasons above, I firmly believe attending conferences is very important for students. I encourage all my students to present a paper in our annual society meetings. Although nowadays meetings are expensive, I believe most professors are still willing to support students to go to meetings. So as a student, you have to have a good paper to present, and then can ask for the opportunity from your advisor.

2.3 Grant proposals

How important is it to write grant proposals when you are a student? If you realize that assistant professors have to write tens of proposals a year, then you will never underestimate the value of writing proposals when you are a student. Most students do not write grant proposals, but because of that, if you do, you will pop up among many applicants.

Professors are all aware that writing a grant proposal is much more difficult than writing a journal article. If you know your own research approach and results well, you may be able to write a good journal article. However, in order to write a good grant proposal, you have to know ALL research approaches, latest findings, and the best researchers in your
area, and you have to know how to do it even BETTER than those approaches, results, and researchers. Because of this, I encourage you to work with your advisor to practice writing grant proposals. You may only write the literature review part, or may write the research approach part, but finally you can get a good picture of what a successful grant proposal looks like. Your advisor will appreciate your assistance, and you will get credit for that. You may also write grant proposals independently. Every year, there are many opportunities for applying Graduate Fellowships from federal agencies, universities, or companies. You can try and learn. The return will be magnificent.

2.4 Patents/software/others

Patents and computer software products are an extra plus to a student’s credentials. If you have an opportunity to file a patent application or apply for a license/copyright for your software product, you should do it (do not forget to consult with your advisor). Patents or licensing are like a certificate: it proves your creativity. I know someone who filed several patents as a student. For myself, when I was studying at the University of Illinois, I wrote a computer software and filed a license protection with my advisor through the university system.

Not everyone has the opportunity to file a patent or copyright. However, opportunities always belong to those who are well prepared and actively searching. Here is another example. One of my friends helped his advisor write the solution chapter for a textbook. In his resume, a book chapter is highlighted! I never thought a student could have a book chapter published, but it is possible. So, closely work with your advisor and look for opportunities to enhance your credentials.

3. Be a competent teacher

Many good researchers are good teachers, but not all. The importance of teaching cannot be overemphasized. How can you show that you will be a good teacher?

3.1 Teaching experience

You need to get as much teaching experience as possible. Being a TA is probably the best way. You may help your advisor grade assignments or arrange and coordinate labs. You can ask for opportunities to give some lectures in the class. You may even independently teach a class. I actually did all above when I was a student, not only because I liked to do so, but also I knew they were important to my career as a professor. Being a TA takes time and efforts, and most of the time not paid in engineering departments, however, the reward is you learn how to be a good teacher, and you show your potential of being a good teacher to the search committee.

3.2 Teaching training

Almost every university has some programs to train young faculty. Graduate students are usually allowed to participate in. For example, here at Kansas State University, we have a LEARN program, and I know some graduate students are in the program to learn how to teach. At University of Illinois, there was a program named Academy of Teaching Excellence when I was a student. I participated in a full-semester training in that program
and received a certificate after completion. I learned tremendous amount of teaching skills from that course and more importantly, met many excellent instructors. If you are still a student, it is not late to start looking for such training opportunities now.

4. Be an active participant
You may be a productive researcher (student), and you may potentially be a competent teacher, but you still need to show that you are willing to be a team player, to serve you institution and profession, and to take leadership in your area.

4.1 Team player and leadership
Being an active participant can be at different levels. In your department, you may be a member or leader of a student design team; in your institution, you may be a member or officer of a student organization; in your profession, you may be a member or leader of a student honor society or branch. All these shows that you are a team player, you are willing to serve, and you have the capability of taking leadership.

4.2 Professional membership and service
If you go to professional society meetings, you are probably a member of it. Being a member of professional societies is just the starting point of professional service. You may join various committees in the meetings, and you may even become an officer of the committee. Sometimes, you can volunteer to be a moderator of a session. I even know a friend who served as a program chair of a meeting when he was a student.

4.3 Peer reviewer
Being a peer reviewer of some journals is also a good practice - assistant professors are doing that very often. When you evaluate other people’s work, it is also a good learning process because you will see both problems and highlights of the articles you review. Students seldom review papers, not because they are not capable of doing it, but because they do not know they can. You can go to the journals in your area and register your expertise as a reviewer. You may also tell your advisor your interest of reviewing papers so he/she can give you such opportunities.

4.4 Honors and awards
Every professional society has various types of honors, awards and scholarships. Being honored by a society or receiving a prestigious award can significantly improve your credentials and expose yourself. When I was a student, I participated in the Graduate Research Award competition of our society and won the first place. I was also nominated and won a Scholarly Achievement Award and Superior Paper Award. I believe these awards have had positive impacts on my career. How can you get those? Do your homework to qualify yourself, and apply for them. If nomination is needed, sometimes you need to tell your advisor or other professors your interest because he/she may not be aware of such an honor.
Conclusions

As you can see, my expectations to you, a student who is interested in an academic job, are actually the expectations to professors. I know it is hard for a student to meet all those expectations, however, the purpose of this article is to show what you can do to make yourself more competitive. The things listed in this article are not complete, but the general idea is simple: build your credentials strong before you start to look for an academic job! Good luck.
The Pursuit of an Academic Position

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Introduction

The professorial position is one of the best positions that exist today. The position provides tremendous autonomy and the opportunity to develop a career path filled with scholastic contributions in a person’s chosen field of study. As a professor, you have the opportunity to aid in the expansions of student minds and the body of information in your chosen area. As these are attributes of an attractive career path for individuals who are independent, creative, intellectual, and well-educated, many professionals often compete for a single open position at a given institution. In fact, it is not uncommon to see hundreds of applications for a given position.

In the following discussion, the author provides a perspective, based upon experience, of the process that is followed in part or whole at most institutions when an academic department attempts to fill an open faculty position. The discussion is divided into five sections: The Committee, The “Screens”, The Interview, The Analysis, and The Offer. In the sections, tips are provided to aid applicants in their efforts to be successful. The guidance provided does not assure success, but it can be used to improve one’s opportunity for success. When it is all said and done, it is up to the candidate to secure his/her desired academic position.

The Committee

On the onset of the creation of a search committee, the academic department head or chair secures the necessary authority and funding to open a search for a new faculty member. The department head or chair has in parallel worked with the faculty members of the given academic unit to identify the nature of the new hire. In particular, the department has identified the level of the new hire (e.g., assistant, associate or full professor, with or without tenure) and any added enticements (e.g., professorship, chair, etc.). Once the search is approved and the funding has been identified, the department head or chair will create a search committee that represents the cross section of the unit’s faculty and possible representation from the staff and student body. The committee’s charge will be to direct a search that represents the desires of the faculty in line with the institution. The authority of the committee may be varied. That is, the committee authority will range from having the authority to make a final offer to simply guiding the department through the search.

The committee will convene under the leadership of an appointed chair, and the first task is to complete the necessary affirmative action paperwork which will include the creation of the marketing plan which embeds the advertisement that will be disseminated across the unit’s national/international domain. The advertisement is the essence of the search and represents the desires of the faculty.
Tip 1: The candidate should pay very close attention to the advertisement and carefully and concisely develop his/her application package in accordance to the details of the document.

The “Screens”

As applications are received, the process of screening suitable applications for further consideration commences typically at a date as stated in the advertisement. In this step of the process, there are several screens that are often followed. First, the committee will assess the applicants in accordance to the advertised qualifications. Often there is a checklist of sorts that each candidate will be assessed.

Tip 2: The candidate must remember Tip 1

From the general pool of candidates, a first cut of a list of possible finalists is developed. At this point, references are often contacted in accordance to the list of references provided by the candidate. Depending upon the structure of the search, written reference letters may be collected by the unit, or the committee may make phone calls and step the reference through a list of predetermined questions regarding the candidate.

Tip 3: The references you list should be knowledgeable of your work and supportive of your candidacy as a professor.

The assessment of the references, along with the scholastic qualifications as demonstrated in the package, provides the committee the necessary information to establish a set of finalists to invite for an interview. In some units, the faculty body may get engaged in the assessment and determination of the finalists. The department head or chair will likely make the final decision on who will be interviewed.

Tip 4: The time required to do this comprehensive analysis takes time. If you hear from your references that they are being contacted, that is a good sign, but it does not assure success of being named a finalist. If you are contacted during this time, be patient and honor the due diligence of the committee and/or faculty.

The interview

Once the finalists are established, typically there are three-five people, and interview dates are established, the coordination of the interviews begins. The interview of the candidate will include and is not limited to: (1) meeting with faculty members, (2) meeting with the department head, (3) meeting with representation from the dean’s office, (4) meeting with the staff, (5) meeting with students, and (6) touring of the university and the surrounding area. As such, much coordination of the parties involved is required.

Tip 4: Recognize and appreciate the coordination required and the many hours of effort that are being expended on the candidate’s behalf.
During the interview, the candidate will be expected to interact individually with members of the faculty. This is a critical input as the faculty members are investigating the candidate’s likelihood of success engaging in research and the further development of programs within the unit.

**Tip 5:** The candidate must prepare for the interview in advance. That is, it is very wise to know the technical areas of each of the faculty members and their scholastic backgrounds. Furthermore, some thought on how the candidate might integrate their technical interests should be conceived and clearly demonstrated during the interview. The candidate should be knowledgeable of the stature of each member and recognize the significance of each faculty member’s input on the final selection.

As the interview progresses, many “agendas” of the faculty members and staff will be observed. For example, a particular member of the faculty, due to their opportunities for collaboration with a particular candidate, may be almost completely focused upon research skill assessment. For others, the candidate’s potential to be an effective teacher will be a primary consideration. Furthermore, some members of the faculty may want to exclusively examine the technical depth of a candidate. Others may be focused on the candidate’s ability to relate to students, while others may simply want to see how the candidate will function as a member of the faculty body. This dimension is the beauty of a faculty body, that is, each member is free to express their academic interests. It can often appear overwhelming to a newcomer, but it is the essence of the academy.

**Tip 6:** Respect the varying agendas of the representatives of the faculty. Expect that the interview will be a comprehensive and exhausting review of a candidate's scholastic abilities. The candidate should be clear in demonstrating how his or her teaching and research skills complement the faculty.

**Tip 7:** Look and behave as a professional. It is very wise to dress and act accordingly as this is a formal event. Furthermore, the candidate should maintain composure throughout the interview and remain engaged and interested in the unit.

During the interview process, many of the represented groups within the unit and across the institution will express interest in the candidate’s needs to begin their research mission should they join the faculty. The needs of the candidate will be assessed in the context of the available resources.

**Tip 8:** The candidate should have a clear image of their needs to start their research programs. In as much as possible, he or she should have those needs resting in the context of the unit being considered. These needs should be clearly expressed during the interview. Financial estimates of the requirements should be available if requested.

**The Analysis**

Once the candidates have completed their interviews, the final analysis is completed. The committee, as supported by the department head and institutional organizations, may administer
a survey instrument to collect the “voice” of various strata across the unit, college and possibly the institution. Suitability of the candidate’s background, experience and projected engagement is examined. The committee, depending upon their original charge, may take the list of finalists and refine it into a list of candidates that they deem qualified to offer the position. This unranked list of qualified candidates along with strengths and weaknesses is then submitted to the department head or chair to pursue an offer.

The Offer

In some cases, the committee chair in consultation with the department head or chair makes a final offer, but in many instances, the department head or chair takes the list and determines the candidate of choice for an offer as aligned with the desire of the faculty. At this juncture and depending upon institutional guidelines, the department head or chair must carefully follow policies and protocol in the offering of a position to the selected candidate. It is very common that there will be a prioritized list of candidates. That is, if the top candidate rejects the final offer to join the unit’s faculty body, the department head or chair may move to the next prioritized qualified candidate.

Tip 9: Be patient during this phase if the candidate has heard that he or she is the candidate of choice. There are many complicating processes that must be followed so offer is not jeopardized.

Tip 10: If an offer is made, the candidate should feel at ease to provide assessment to the department head or chair on the positive and as well as negative aspects of the offer. In particular, if the candidate is particularly excited about the collaborative potential of joining the faculty, that should be clearly communicated to the department head or chair. Furthermore, if there are clear inadequacies of the offer, e.g., competitive salary or start-up package, these should be clearly expressed.

It is very likely, that the original offer, either in writing or expressed interest, will be modified to provide a suitable and acceptable job offer.

Tip 11: All finalists should feel free to make reasonable contact with the department head or chair during this phase of the interview. Even though a candidate may not be the top choice, there is a very high probability that the top rated candidate is not interested and subsequent and outstanding candidates from the finalists may be pursued.

Summary

The overview and tips provided in this brief article are offered as a perspective on the interviewing process and pursuit of an academic position. From the perspective of the author, the position of professor is likely one of the very best professions that one can pursue. The position is a position of high and autonomous stature and carries with it a great deal of responsibility as the shaping of new professionals and the advancement of the candidate’s professional community are of the highest and most lofty priorities. States, parents, students, donors, and research sponsors have invested great resources in our institutions of higher
education. As a result, the processes of being appointed as a member of the faculty bodies can be perceived as onerous and time consuming, but they in fact, are the essence of the due diligence that stakeholders should expect. This complex process is the academy’s means of succession planning and is the standard that is followed.

The tips above represent a set of good practices that should be used to improve a candidate’s likelihood of success in securing a faculty position. As stated earlier, “the guidance provided does not assure success, but it can be used to improve one’s opportunity for success. When it is all said and done, it is up to the candidate to secure his/her desired academic position.”
Perspectives from the Faculty Search Committee

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Introduction

These thoughts are based on my own experiences at the University of Florida as a member of several Faculty Search Committees, including serving two years as the Committee Chair. I have tried to summarize what I think are important facts and advice for those interested in navigating the faculty search process. Recognize that there are many ideas of what it takes to succeed with the goal of landing a faculty position. In general, any group of faculty will have a diverse collection of opinions, including some that may appear at odds. Here I present my own personal opinions, which I have summarized for our own graduate students in a recent workshop, and hope that they may provide future faculty position applicants with a means to help present their own applications in the best possible light.

I. Some Typical Numbers (or Get in Line)

Faculty position applicants applying to advertized positions at any research-level university should recognize that the raw numbers are not necessarily in your favor. Our recent faculty searches have all attracted total applicant numbers in the 300-400 range. The search committee’s job is to generally categorize (if multiple positions are open) and then carefully screen each one. From these numbers, perhaps 10% can be expected to receive a telephone interview, and perhaps one-third of those may receive a campus visit, in other words a formal interview. Of those invited to the campus, despite having made it through all the hurdles, less than half will typically receive an offer. With these facts in mind, applicants must learn to get in line and be patient with the process. Be assured that the search committee will consider each applicant, although these things do take time.

II. The Application Package (or How to Standout for the Right Reasons)

Given the reality of the numbers detailed above, recognize that search committee members do not have time to waste on poorly prepared or incomplete application packages. Follow the instructions in the search advertisement TO THE VERY LETTER. This is a point that I want to clearly emphasize. If the announcement states that there are multiple positions of interest (e.g. controls, computational fluids, and advanced manufacturing), then clearly state in the first or second sentence of your cover letter which position you are interested in. While it may appear a simple matter to read through your package and figure out which area you fit, it is frustrating to committee members that are screening hundreds of applications. The first thought that crosses my mind is that this person is not going to be successful convincing research sponsors to fund their research if they are not successful in conveying to me concisely what position they are
applying for! The same holds for requested Teaching Philosophy, Research Plan (more on that later), and the requested number of reference names to be provided. Follow the instructions faithfully.

The Cover Letter is a very important part of your application package. Do not take it lightly, as it will provide the first impression of your application package. A poorly written cover letter can essentially end your chances before they really start. Never simply change the address of your cover letter, as most experienced search committee members can see through that. Again, you are trying to show effort and an eye to detail that speaks to your future success. Ask yourself what message does “copy and paste” send? Customize it! Explain in your letter how you specifically address the stated search needs, how you fit along with existing faculty members and can contribute to existing university centers. Provide specific names, including outside the actual Department if applicable. Show that you spent some time on the Department’s website, and thought carefully about how you will fit in and contribute. Do not be overly long, but rather keep the focus sharp and to the point. An excellent cover letter leaves the search committee members excited as they open your CV. A poorly prepared cover letter leaves them looking for a reason to drop your file and move on the next one in the stack.

The CV is usually the next stop in the screening process. This is place to let the facts speak for themselves in the best possible light. Make certain that your resume is easy to read. Have multiple friends review it carefully, not only for grammar and spelling (mistakes are unacceptable), but for clarity and style. You are presenting your education, experience, publications, awards and other relevant information. Provide your thesis/dissertation titles and advisor names under your degree information, provide dates of graduation for each degree, you need not list your GPA, although if it is very good (~4.0), do tactfully include it. Other items include a list of publications (see further comments below on this topic), a list of presentations is useful but do not overdo this one, teaching experience and quantitative teacher evaluation scores are relevant, awards and honors, and proposal writing experience. This latter point is often overlooked, and not everyone has this experience. However, if you have provided a substantive contribution to a successfully funded proposal, by all means list this information. Include your role (e.g. PI or co-PI) as accurately as possible. In particular, if you contributed a significant portion to one of your advisor’s grants but are not listed as an official co-investigator, this might still be listed as proposal experience (e.g. “a significant contributor”); however, discuss this clearly with the actual grant PI before including on your CV.

As noted above, the list of publications is a critical part of your application package. While most faculty members do not like the term “publish or perish,” it is absolutely true that a publication record is an essential component of a person’s record of “scholarship,” which is a term that most faculty members like very much. One of my own personal resume turn-offs is what I perceive to be an overly fluffed-up publications list. Certainly entry level faculty candidates are not expected to have an extensive publication list. We know and understand that! Resist the temptation to list papers as “in preparation” and do not pad this list with non-journal publications such as technical reports. If necessary, put a second category of “other publications” which includes lengthy conference papers and reports to sponsors, but do not try to pass these off as archival journal publications.
The Research Plan and Teaching Plan may or may not be part of the requested application package. As with your cover letter, these should contain a degree of customization. In particular, make a section of your teaching plan (or teaching philosophy) to specifically address their curriculum. In other words, do not simply list “heat transfer” as a course of interest, but rather, list THEIR course (e.g. EML 4140 Introduction to Heat Transfer) as a desired teaching course. Balance your ideal teaching portfolio to include core undergraduate and graduate courses, elective courses, and one or two desired new courses. Mention specific teaching experience (even if is only office hours) and clearly convey that you take teaching seriously. Nonetheless, know full and well that this section is probably not going to make or break your application, but understand that you can score some nice points for demonstrating that you took the time to understand and review their curriculum. The research plan is far more important. Never lose sight that research-level universities are hiring a teacher AND a researcher. This plan will be carefully reviewed if interest is aroused by your cover letter and CV. You are not expected to submit a full NSF-level proposal and you should not. Rather, you want to clearly state two or three areas for future research. These areas should be consistent with your experience and training, but they should not all be simple continuations of your dissertation. If possible, link items specifically to the applicant university (even if by a few sentences), and provide as much detail as possible about potential funding agencies. This last point is an important one. Simply stating “NSF” as a potential funding agency is not nearly as effective as listing the relevant program, program manager, and submission windows. The NSF Career proposal has essentially become a rite of passage for young tenure-track faculty. Put some serious thought into your Career proposal topic and identify the topic as such.

Your list of references is another important item. The academic world is not as large as you think. There is most assuredly a direct link between someone on the faculty of any two major universities. Therefore, do not put anyone on your list of references that you have not specifically asked. If you are listing a person from several years ago (e.g. your MS thesis advisor), send them your current CV after you get their permission to list you as a reference. Regardless, be prepared that a search committee member may know someone on your reference list, and may simply pick up the phone and call. It is important to list at least one reference from your most recent and other significant positions. If you have a MS from one institution, your PhD from another, and have a post-doctorate position at a third, you should list a reference from each. Provide accurate contact information (direct telephone and e-mail) for each.

Other items of importance for your CV include accurate contact information for yourself. Do not provide a laboratory telephone number that will not be answered or in which messages will not be promptly passed along to you. Now is the time to make certain that your telephone answering machine message and e-mail address are professional. It does not reflect well on your application if the search committee member is greeted with a voice mail prompt stating “I’m probably sleeping, leave a message” or an e-mail address of surfergirl21@gmail.com. Remember the numbers; in the stack of hundreds of applications that must be sorted through, search committee members are looking for that special candidate to standout and make them want to find out more information. In that process, they are also looking for reasons to quickly pass over an application so they can spend more time on the promising ones.

III. The Telephone Interview (or Getting Close but Don’t Blow It)
The telephone interview is a very important tool for the faculty search committee. At the end of
the day, talk is still relatively inexpensive. An investment in a formal campus interview can run
several thousand dollars; however, a telephone call is essentially free. Our faculty searches have
made great use of telephone interviews to find out more about a candidate. As mentioned above,
only about one-third of our telephone interviews result in follow-up campus interviews. In other
words, we are rather liberal with telephone interviews but much more conservative with campus
visits. What this means is by no means underestimate the importance of a telephone interview.
From the start, a few words of advice. Be enthusiastic about the process (we often initiate with a
quick telephone call or e-mail to set up the actual interview), but don’t be overly surprised (e.g.
“Wow, I can’t believe you called”), and by all means be flexible regarding setting a time for the
interview. Finally, ask ahead of time who you will be talking with and then do your homework,
as generally phone interviews are conference calls with from 2 to 4 faculty members. Do some
background research as part of your preparation and know the research areas, center
involvement, etc., for each participant.

During the telephone interview, be prepared to discuss your research plan and your teaching
plan. As described above, be ready to discuss specific courses in their curriculum rather than
generalities. In particular, in the current world of interdisciplinary research, recognize that you
may or may not be considered a “traditional” fit to a given department. I have heard over and
over faculty state that while they like the applicant’s research area, they are concerned about
what specific courses they will teach. A little preparation and homework does wonders in
answering such a concern. Be ready to discuss your research plans, and again, be ready to
explain how they fit into the department. As noted above, be specific. A statement of how your
research nicely complements what Professor X and Professor Y are doing goes a long way
during such a conversation. In addition to the impact of the actual research, it shows the search
committee that you took the time to figure out the relationship, to investigate, and think about
what activities are going on in the department. These show that you have the skills to analyze
research problems in a manner that speaks to your ability to attract future research funding.
Finally, prepare a list of your own questions and be ready if asked. Generally, the search
committee does not discuss salaries and start-up packages, and the telephone interview is
probably not the place for such discussions. Items for consideration on your list of questions
include typical teaching loads during the tenure-track period, what type of laboratory space is
generally available (e.g. shared space), special needs such as computing power, lab infrastructure
(e.g. significant power or ventilation requirements), interdisciplinary research barriers if
applicable to your plans, and near-term stability of department chair.

Be sure to thank the interviewer’s for their time and follow-up with an e-mail. In the e-mail
offer to provide any additional information that might be useful (e.g. your publications that might
be relevant to a research topic that came up). Regardless of the outcome, fully recognize that
most successful faculty members applied to a number of positions and were probably rejected by
many before finding their current position. Do not take rejection personally, as it is often the
case that faculty searches are looking to fill a specific department need or vision. Learn from the
experience as you go, and always try to put yourself in the best position for success.
Working in Industry and Looking for a Faculty Position

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Abstract
This article summarizes my personal experience and observations in finding a faculty position while working in industry. Statistics from the mechanical engineering department at University of Michigan is used as an example to show that most of faculty members do not have experience working in industry after receiving their PhDs. The process used by a faculty search committee to identify prospective candidates is explained, and the pros and cons in considering a candidate with industrial experience are discussed. The paper concludes that if you are working in industry and hope to pursue a career in academia, you may need to be proactive and employ long-term planning in order to be successful in your endeavor.

Introduction
After receiving my PhD, I worked in industry for seven years before coming back academia. Many graduating PhD students ask me: “If I decide to work for industry, can I still pursue an academic position later in my career?” The answer is yes, but it can be challenging. An unofficial survey was conducted among my colleagues in the Department of Mechanical Engineering at the University of Michigan. Among all of my 56 tenure and tenure-track faculty colleagues, 6 (10.7%) of them have an average of 3.3 years of industry experience between earning their PhD and their first faculty position. The survey shows that most of my colleagues did not work in industry before their first teaching assignment. This is a trend common in most engineering departments in US research institutions. Many faculty candidates are now working as post-doctoral research fellows to add to their list of publications, gain teaching experience, and wait for opportunities in a very competitive market. This has compressed the opportunity for candidates working in industry and seeking to come back to academia for various reasons, such as the stability, freedom, and the enjoyment of teaching.

If you work in industry and want to pursue an academic career path, it may be easy but will likely take the long-term planning and being proactive. Although there are many successful examples, but there are far more who tried and failed to come back to academia. This article first reviews common steps taken by an academic institution for searching a new faculty member, with the goal of helping the reader understand the motivations and thought process involved. This then helps explain the subsequent discussion of pros and cons for candidates with industrial experience. The conclusion outlines some personal observations from spending a few years in industry and then on a faculty search committee.

Searching a New Faculty
The procedure to create and fill a vacant faculty position is similar for almost any institution. There are, in general, six steps to recruit a new faculty member in an academic department:
1. **Identify a Faculty Position Slot**: It may be due to retirement, expansion, or attrition that a faculty position is required in the department. Within the academic administration office, an official procedure is generally followed to first request such an academic position. Most academic institutions’ financial calendar year starts on July 1. The budget is usually set in May and June. Before that, in April and May (or even earlier), the department needs to make a request for faculty hiring. This request must then be approved by the college. By July, the department chair knows how many new faculty members will be recruited in the coming year, and he/she will start to consult with other faculty members who are willing to serve as the chair and members of the departmental faculty search committee (FSC).

2. **FSC Planning Phase**: The first FSC meeting is typically held at the start of the fall semester to discuss the specific teaching and research needs in that round of hiring. These may be the same as those listed in the original request to the college, but changes may be added. An advertisement is then prepared and published. The FSC also works with the department financial office to identify how many candidates can be invited for interviews based on the allocated budget for recruitment. In general, three candidates are interviewed on campus for each opening position.

3. **Review and Identification of Candidates**: The candidates each submit a resume and cover letter, as well as teaching and research statements, to the FCS. The FSC meets, discusses the candidates, and narrows the number of candidates to a manageable number for more in-depth deliberation. To assist in the process, a table or web-site which outlines the research area, publication record, PhD year (and granting institution), and other pertinent information is generated for each candidate. A short list of candidates is then generated.

4. **Interview**: To go a step further, the FCS further deliberates and narrows the number of candidates by using phone interviews, which evaluate candidates’ communication skills and, as a side benefit, send a message to the candidates that there is interest from the school/department. Depending on the outcome of the phone interviews, some candidates are elevated to the next level for a formal campus visit and interview. During this “official” visit to the campus, candidates are invited to give a seminar and meet with the dean, department head/chair, and the faculty.

5. **Decision and Offer**: The job of a FSC officially ends after the candidate completes the formal interview. The decision is then in the hands of the department head/chair and the advisory committee to the department head/chair (if there is one, which is likely in large departments). Each faculty member in the department has the opportunity to offer their opinion about the candidate. At times, the opinions are very diverse and the deliberation process can be long and complicated. Typically, at the end of this period, a final decision is made by the department head/chair, the advisory committee (if present), and the dean. Some departments have the bylaws that require a faculty vote, and a minimum number of affirmative votes are required to confirm a new hire.

6. **Making and Accepting the Offer**: If the hiring decision has been confirmed for a specific candidate, the department head/chair then negotiates directly with the candidate on the
salary, start up package, lab space, teaching obligation, and other matters. The department head/chair produces a formal offer letter for the candidate. Once the offer letter is accepted by the candidate, it marks the official end of the faculty search.

**Industrial Experience in the Faculty Search**

It is the dream of many engineers to explore the “real” world outside of academic institutions. Many PhD graduates feel that life is not complete without the first-hand experience away from academia. It is important to remember that the academic world is also “real”. In my opinion, the academic world nowadays is more “real” because the faculty have to deal with industrial representatives, students, administrators, sponsors, and, sometimes, even parents. It is broad-based work with real experience and responsibilities.

Working in industry is indeed fun and competitive. It is a setting that offers opportunities for producing a big impact on society, and there are ample opportunities for success. Industrial experience is valuable, but it is also different from teaching, research, and service in the academic world. Industry is profit driven. Decisions and actions of a company have to be tailored towards current or future profits. Training employees for future faculty positions is not part of that mission. There is a lack of goal congruence if you eventually or potentially want to seek an academic career.

The pros and cons of working in industry in the view of a FCS and the faculty are summarized as follows:

1. **Research:** The topic of research and your publication record while working in industry are two main tickets to come back to academia. Both industry and academia can be conducting cutting-edge research. Because of potential commercial applications and profits, industrial research can be distinguished from traditional academic research in size and depth. Industry can provide a level of equipment and funding support in the level unmatchable in an academic setting to push the research through. However, the economic pressure of corporate profits has squeezed the ability for a company to invest in long-term research. Most of the tasks performed by the entry-level PhD graduates are in development. Industrial research is typically very specific. There is also a significant difference in the amount of freedom given to select research topics. Corporate research often has specific goals in mind, meaning little latitude is given unless new avenues of research could also lead to profitable results. Such restrictions often cannot fulfill the interests of a researcher to understand basic “how?” and “why?” questions of the phenomena under investigation. In the view of a FCS, such research may be considered too narrow and product-driven. In closing, it is important that you pick the “right” research topic, one which is attractive for academic institutions and can make a reputation for you as one of the best researchers in the world on that topic.

2. **Publication:** Continuing to publish while working in industry is important because it demonstrates that you are independent and active, two attributes important for a successful faculty member to possess. Publication is in the public domain, which means it is often not encouraged in industry. For truly innovative breakthroughs and inventions,
companies prefer to keep them as the trade secrets or, if that is not possible, patent them. The publication of journal and conference papers, and making them available for everyone to access, is usually not a top priority. You could work on a cutting-edge project and produce many great findings. However, without publications, you cannot grow your academic resume. If your academic resume is not growing, a FSC and the research community do not know and cannot judge your work. You are then falling behind others who are gradually building their research credentials. To overcome this dilemma, some proactive PhDs use their spare time and continue to work on research and publish their findings. Several of them become successful faculty in academia.

3. **Connection with the Academic Community:** Connection with the right people is another key factor to convert you from industry to academia. There is an old saying: “Every meeting is an interview.” It is important for the academic community to know you, recognize that you are doing good work, understand you are a dedicated researcher and potential faculty member, and accept you as a future colleague. It is beneficial to build a broad and deep connection with key members in the research community. These people can also be references in your career, regardless of where you end up. The industrial and academic research communities overlap some, but not totally. In industry, the research work is commonly completed by a multi-disciplinary, cross-functional team that includes people from sales, marketing, and customer service, along with researchers. The industrial community is usually broad, but is not as close or deep as the academic research community. To offset this potential disconnect, it is important that, every year, you attend one conference with key academic researchers attending and present your work. One conference is usually adequate. It is also important to keep a close connection with your PhD advisor, who can be important to connect you to potential openings and lend influential to support you in pursuing a successful academic career.

4. **Experience for Teaching:** There indeed exists some practical experience related to teaching that can only be gained by actually teaching a course independently, including such tasks as preparing a syllabus, lecture in the classroom, answering questions, transferring knowledge, giving exams and homework, and assigning grades. The lack of teaching experience is a major drawback cited by a FSC in a candidate from industry, especially when compared with other candidates who already teach in smaller schools who seek to move up. It is not easy to gain teaching experience while working full time, but it can be acquired before receiving your PhD by being the teaching assistant (or graduate instructor) for one or more classes. Alternatively, you may seek an adjunct teaching position in a local college or university. This requires you to proactively establish a personal connection with the graduate program director who assigns courses in your institution. The graduate director usually has a pool of potential adjunct faculty who can help in “emergency” situations (such as sudden influxes of students in one course or semester), which do occur. You need to make yourself available as part of such a pool. In summary, teaching experience is valuable and difficult for a person working full time to gain.

Based on my experience in a FSC, common criticisms or problems with candidates who work in industry and seek to come back to academia are: (i) not being on the cutting-edge of research, (ii)
lack of teaching experience, (iii) dearth of publications, and (iv) few or no strong references. It is important in your cover letter and resume in the application package to cover these weak points and emphasize your industrial experience.

Concluding Remarks
Every year during the recruiting season, many potential candidates vie for faculty positions at research universities, but only the most attractive among them receive interviews and offers. As one ponders entering this highly-competitive process, it is important to consider two questions: How can you be a strong candidate in the eye of the FSC and the existing faculty of a particular institution? And, what do you need to do now so that you will be a strong candidate at the time that you will be looking for a change from industry to academia? The few faculty positions on offer will go to someone those who prepare.
These days more and more fresh Ph.D.’s, postal-doctoral fellows, and people from industries are becoming interested in getting an academic position (tenured or tenure-track). It is not surprising to see that a few hundreds of applications come in for just one opening. In comparison with industry jobs, as a professor at university, you have more flexibility in allocating your time, deciding the research/work you want to do based on your interest, and have a peace of mind on your job (for most situations) after the tenure is granted. On the other hand, as a professor, the life could be quite stressful during the first several years before you get the tenure. There could be quite a few new things you need to learn about how to do and how do it excellent, such as teaching, recruiting, retaining, and supervising graduate students, writing papers, choosing research directions, and writing successful proposals. The tips provided below are based on my personal experience and some documents I have read about how to getting an academic position. Tips could vary from person to person. I will be very glad if you find some tips are helpful with your job application.

1. Get yourself prepared
Before you start looking and applying for an academic position, it is always a good idea to know what kind of candidates universities are looking for. Generally speaking, they are looking for someone that has strong research background, a sound record of publication, and someone that will work in a promising research area that could attract strong research funds. It is almost for sure that good teaching experience will be a plus in your resume. Now these days more and more fresh Ph.D’s spend several years doing post-doctoral research before applying for an academic position. I can tell that this post-doctoral experience will definitely help with the application, and could help you quickly start up your new academic job.

2. Where to find the job advertisement
As usual, a lot of universities announce their position openings in professional journals and magazines. For example, the Mechanical Engineering-the Magazine of ASME is a good place to find position openings in mechanical engineering areas. Another good source is the website www.academickeys.com. You can visit this website, select the area of your interest, and provide your email. They will email you the open positions periodically.

3. How to apply
Before you apply, it is always good to carefully study the announcement about the open position, and learn the required documents. Usually, a cover letter, a statement of research and teaching interest, and names and contacts of references are needed. In the cover letter, you need to specify which position you are applying for (e.g., “the assistant professor position in mechanical design area published in ME magazine xyz issue”). It is possible that one department has several openings, and this will help them put your application in the right category. The cover letter can be short, give the basic information about yourself, such as your graduation date, major and university for Ph.D. study, and your research areas. If you want, you can use one to three sentences to tell some highlight of your candidacy, like the number of publications and awards.
It is very important at this stage to write a sound statement of research and teaching interest. For the research statement, you could list several areas you plan to conduct research once you join the university, the objective of your planned research projects, and where you plan to apply for grants to support the project. For the teaching interest, it will be helpful to list the courses you will be able to teach, your teaching philosophy, and any new courses you plan to open.

4. About the procedure of application evaluation
After the application deadline, the department, usually a committee, will evaluate all the applicants, and prepare a short-list, which could have five to ten candidates for one position opening. Then they will call the references of these candidates for recommendation letters. Some universities prefer to call for reference letters after the interview. So if you receive an email or a phone call from the department asking for reference letters, it could mean you have made to the short list. Considering the hundreds of applicants they have received, making to the short list means you have the strong academic background for this position.

After receiving the recommendation letters, the search committee will do another round of evaluation, and determine the candidates to bring in for interview. For one position opening, they could call three to five candidates for interview. If you are applying for one academic position starting in the fall of next year, the interview usually will happen in February, March and April. If they couldn’t find the good candidates for the position or the top candidates are not available for the position, the department can still call candidates for interview in May or June. To my experience, this does not happen quite often.

5. Interview
Once you receive a phone call for interview, you will be very excited about that you have made to this stage. Usually the person calling you could be the department chair or the search committee chair. She/He will discuss with you to fix the interview date, and provide you an itinerary later for the whole interview.

Interview is one of the most important things during the application. During the interview, you will be arranged to have a bunch of meetings with the faculty in the department, visit their laboratories, and tour the university. In fact, they are interviewing you and you are also interviewing the university/department to determine whether this is the place you would like to work. As usual, you will be asked to give a seminar of about 45~50 minutes. This seminar could be the most important single event during your interview. So it should be prepared very carefully. In the seminar, you need to present the research you have done in the past, especially some highlights, and show your future research directions. Since people do not have enough time to read all your papers, they will learn about your research mostly from your seminar. It is a good idea to prepare the seminar to give a big picture, so the people outside your area can understand what you are doing. On the other hand, you also should be specific in some technical details, so the people in your area can appreciate the state-of-the-art of your research. Additionally, the seminar should be prepared logic. The audience will tell from the presentation whether you could be a potential good teacher.

During the interview you will have the chance to have meetings with the department chair and
college dean/associate dean. At these meetings, you will be given a brief view of the university, the college, and the department. One important thing is that you will be asked how much money you need to start-up your work if you join the department. Before you come for the interview, it will be very helpful to prepare a start-up package list. On this list you give details of the budget and justification. So when you are asked for the start-up package, you can give them this list and it will ease the discussion very much. Additionally, it could give them a very good impression that you are really prepared for the interview and have thought through about this job.

In the start-up package, you will need money to buy equipment (some important ones), to support one or two graduate students for two years, summer salary for two years, and some budget to cover travel and miscellaneous things of the laboratory. One important thing in the start-up package is the laboratory space you will need. These days a lot of departments are running short in lab space. So it is very important to tell them how much space you will need and how you will use them.

During the interview, if you would like to get some sense about the local life, such as the living expense, housing, recreational parks, traffic, and schools, you can ask some faculty during the individual meeting with them. They will be very glad to help with these questions. Indeed these are very important questions since they will affect your life very much.

At the end of the interview, don’t forget to ask the committee chair or the department chair how soon they will make the decision. This will help you a lot arrange other interviews. After you come back from the interview, always remember to write back to express your great appreciation of the hospitality they provide during the interview. If you are still interested in the position, you can tell them that you will be very glad to join the department if given the opportunity. If you are not interested in the position after the interview, telling them the truth will help them a lot with the arrangement of interviewing other candidates.

6. Wait for the good news and decide where to go
It could be a few weeks or a few months after the interview before you receive a pleasant phone call from the department chair that they would like to offer you the academic position. I bet you will be very excited when hearing this good news. Probably on the phone the department chair will discuss with you about the start-up package, family relocation, and your starting date. It will be good to ask them to spell out all these things in the offer letter. It could be very helpful to discuss with the department chair about family relocation since you need to travel there looking for house or apartment. Sometimes you have to stay in a local hotel before everything is moved in. So ask them how these things can be arranged and covered in the package. This will ease the relocation a lot, and help you quickly start up your job.

7. Start your new job
I am glad to see your career has made to a new stage. All I could say at this point is “Best luck with your new academic job!”