

How to Get a  Teaching Job at a Primarily Undergraduate Institution

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Introduction

Recently, I was hired as a tenure-track faculty member in the biology department of an undergraduate institution. Previously, while seeking a site for the second year of a Pew Teacher-Scholar Postdoctoral Fellowship, I had the rare opportunity to visit and interview at eight colleges in the Midwest. Since I was not being considered for a tenure-track position at the time, I was able to get a feel for the interview process without all the pressures of a real job interview. This experience gave me a feel for the interview process and insights into the special qualities sought by undergraduate institutions. To share what I learned during my time on these campuses, I published an article in the Council on Undergraduate Research (CUR) Newsletter (1). There have been several publications written for candidates interviewing at research institutions (2, 3, 4), but none for prospective faculty members at primarily undergraduate institutions (PUIs). Unfortunately, most PhD candidates and postdocs are chastised for any interest they have in teaching (sometimes referred to as the “T-word”), and we get little support from research mentors for our career choice. There has been increasing awareness, however, that not everyone who gets a PhD wants to establish a research lab at a university. In an attempt to assist those seeking “alternative” careers, I have expanded my original CUR Newsletter article to give some suggestions that may be helpful for those wishing to get a job at a PUI.

Career Tracks

If you know that teaching at a PUI is why you are getting a PhD in the first place, then you want to think about the implications of choosing a particular lab for your thesis work. If you choose a lab that does only one technique and your project requires you to work with live Ebola virus, then you are not setting yourself up for a teaching job. Most PUIs want a person who is versatile and can conduct student-based research. Proficiency with a single technique is too limited a repertoire, and Ebola is not conducive to inexpensive and short-term research projects. If you are still keen to choose this project, then accept the reality of a postdoctoral fellowship in order to add breadth to your training.

The big question in the minds of most who want to teach is, “Do I have to do a postdoc?”. The answer is yes and no. I have met several recent hires who had no postdoctoral training but in today’s tight market (at least 100 applicants for each advertised job), they are the exception. Postdoctoral training will be beneficial for several reasons: 1) since so many applicants have postdoc experience, those without it might be at a disadvantage; 2) this additional training allows you to learn more techniques and a different system which should provide sufficient experience to teach at least one more course; 3) as a postdoc you should gain more experience with writing grants and increase your publication record; and 4) you will develop a degree of maturity that comes from having to adapt to a new area of research. With a few Nobel Prize winning exceptions, the name recognition aspect of your postdoctoral mentor selection is negated by the fact that most faculty members only recognize the names within their field and will not recognize your mentor’s name. However, you might find that the name of the institution where you postdoc has a greater impact. This does not mean that your quality of training will be better at a name brand institution, but some people will find this attractive which may, in some small way, help you get an interview. A very important consideration is whether or not you will be able to take your research with you. Some PIs do not let go of their projects for any postdocs, or maybe your research is too difficult to conduct at a PUI with its limited resources. For example, if your research requires a P4 biohazard lab, you will never get a teaching job where you are expected to maintain a research program. The ideal project for a PUI is one that is cheap, easy to learn, and not subject to intense competition. If you are wanting to teach molecular biology and use this in your research, it is understood that this is an expensive discipline but you might want to work with an inexpensive system like *Chlamydomonas* or *Drosophila* instead of more expensive ones like mammals or tissue culture.

Another question that people often wonder is whether they should tell a mentor that teaching is their long-term interest. It is a good idea to be honest up front because in the end, you will want a letter of recommendation from the PI so he or she will find out eventually. If you are considering a lab where the PI is hostile to teaching as a successful career for PhDs, it is better to find this out before you commit yourself to this lab. Do not subject yourself to a lab where the PI resents his or her “wasting time” on someone who will “just wind up teaching anyway.” There are plenty of PIs who do view teaching as an acceptable career since there is a growing perception at the highest levels of science that “alternative careers” must be pursued, though “alternative” is still seen by most as a step down.

One aspect that is often overlooked is teaching experience. Most PhD candidates have to teach for at least two semesters. Often, the courses are huge and allow little room for personal input and control of the course. If you know that teaching at at PUI is your objective, try to teach more than the bare minimum. Offer to guest lecture for your mentor (very few mentors object to this). You might be able to teach a course for someone on sabbatical at a local college (either a 2-year or 4-year institution). As you gain more teaching experience, ask yourself again if you enjoyed the process. Is this what you want to do for the next 30 years?

Finally, where are teaching jobs advertised? This is easiest part of the entire process; all jobs are listed either in *Science* or in *The Chronicle of Higher Education*. In *Science*, most jobs appear between late August and early January but some gems can be found outside this peak time due to unexpected changes in faculty because of death, retirement, or relocation. Searching weekly issues of *The Chronicle* has gotten infinitely easier now that it is available on gopher. The paper edition is cumbersome to plod through while the electronic version will provide all the biology related jobs in a single list. To access *The Chronicle*'s job listing by gopher, select: North America; USA; General; ACADEME THIS WEEK (*The Chronicle*); JOBS; SEARCH using *The Chronicle*'s list; Faculty and Research; Science and Technology; Biological Sciences. There will be some overlap between this listing and those found in *Science*, but *The Chronicle*'s listing is a week or two ahead of *Science* which can make the deadlines more user friendly. An even better development has been Science On-Line, the world wide web (WWW) home page for *Science*. If you have not tried “the web” it is easy and now you have a good reason to try it out. The WWW address is: <http://science-mag.aaas.org/science/> which is easily accessed by Netscape or other browser. (See your local computer guru to find out how to get your computer system to access WWW.) Once you have gotten to this home page, you will have several options. Click on the arrow-head next to “Career Opportunities.” On this page, you can either choose to browse all of the advertisements as you would for the paper version, or you can conduct a keyword search. Try words like ‘cell’, ‘undergraduate’, ‘teaching’, or ‘college’. You could search for a particular state, or the word ‘tenure-track’. Unfortunately, you cannot search back issues through this medium.

Things to do Before Applying

There are a number of things any candidate should do before applying for a position. Contact local colleges or your alma mater and offer to present a seminar of your work—then make the time to do it. There is never a good time in your schedule to do this, but the practice is invaluable and most colleges would be happy to have a free seminar speaker. While there, show them your CV, teaching philosophy, and research interests (see below) and ask for constructive criticism and suggestions for your job search.

- Once you have seen an ad that is tempting, do a little homework and soul searching. Ask yourself how far you really want to stretch yourself. For example, if the ad is for a geneticist and you are a biochemist who happens to use *Drosophila* tissue.... could you really teach genetics?
- Consult Science Citation Index's year-end report, the geographical listing, which has a state-by-state listing of that year's publications from each department of every institution in the country. Compare the school in question to others with which you are familiar. This will give you an idea of the level of research at the school in question.
- Use the Council on Undergraduate Research's Directory of Biology Departments. It is a very impressive list of most of the top PUIs in the country and it gives a great deal of information about the available equipment and research interests of the faculty.

- Use Peterson's Guide to Four Year Colleges to learn about their students in areas such as geographic and ethnic diversity, average SAT scores, etc. This Guide also lists the school's endowment which will give you a feeling for how deep the school's pockets may be when it come time for negotiations of salary and set-up money.
- Call the chair of the department, or the chair of the search committee, to ask some general questions. The fact that you called will probably be recorded in your file. You can try to get a better understanding of the job: which courses you would teach; how many contact hours you would be expected to maintain; whether there is a research lab available or in the planning stage; whether there is any set-up money; how many majors the department has, etc.
- Surprisingly, most college and university libraries have a microfiche collection of catalogs from every school in the country. Catalogs allow you to find out who teaches which courses, what courses are offered, who teaches them, and how often. You can also get a feeling for the history of the college, any areas of special pride, and read the school's mission statement. Increasingly, PUIs are presenting information on WWW home pages which is an easy format to utilize. All of this information comes in handy when you are writing your cover letter.

The Application

You will need to submit four documents for any teaching position where there is an interest in research-active faculty: 1) a cover letter; 2) your CV; 3) a statement of your teaching philosophy; and 4) a description of your research interests. Even if the ad does not ask for them all, you should send them. If they really don't want one of the documents you send, they will not read it. However, some institutions will not list all four required documents to save space (i.e. money) or as a quick way to eliminate those "who don't know better." Some PUIs ask for transcripts which you might want to have in your files so you can send them copies directly, if this is acceptable. Of the four standard documents, I would rank the four documents in the following order of importance: 1) cover letter, 2) cover letter, 3) cover letter, 4) cover letter. Although your CV, teaching statement, and research interests/plan are very important documents for a job that expects both teaching and research, the first round of cuts will be heavily influenced by your cover letter. The cover letter is incredibly important for the following reasons. There is no one in the department who does what you do (if they did, they wouldn't want to hire another one), so no one will understand fully your research or appreciate who has written your letters of recommendation. You are writing to an audience of administrators and a collection of biologists from every sub-discipline, so your cover letter should be general in nature in order to appeal to everyone while sufficiently distinct and not generic. At some institutions, the older faculty may not conduct research at all, and will not be familiar with the latest techniques. They may have as many as 150 applications to read, so everyone is looking initially for those that can be eliminated easily rather than trying to identify the best applicant. With this in mind, the first document most faculty read is the cover letter, so yours should not contain any reasons to justify putting it in the stack of excluded applications.

Now that you know which document needs to be perfect, what should it look like? It should be about 1.5 pages long, explain why you are interested in teaching as a primary focus, indicate clearly that you are familiar with this particular school, and make it clear that you want to work with their undergraduates. (Make sure you use that word, some applicants send the same cover letter to graduate programs and PUIs - a guaranteed way to be excluded from the search.) If you determined from your phone call that there is an interest in hiring a research-active faculty member, you want to describe your intention to conduct student-based research. The cover letter should be well written, easy to read, and maybe reveal enough of your personality that your application stands out from the others. Once you have a document in a presentable format, have several colleagues critically read your cover letter in order to see how you look on paper.

Your CV should be written as if you were trolling for fish—put out as many hooks as possible to snag as many fish along the way as possible. Sure, you need all the basic facts, but they should be presented in the best possible light. For example, lets say your Ph.D. thesis is on a molecule in the right ear of the tsetse fly and you got your degree with Dr. X at University Y. You could list yourself as:

Ph.D., 1995, University Y.

Or you could say:

Ph.D., 1995, University Y.

Thesis title: “A big and novel molecule in the right ear of the tsetse fly”

Thesis advisor: Dr. X.

Comprehensive exams in Entomology and Neurobiology

By listing all this information, you have put out four hooks instead of one. You never know who is interested in some obscure aspect of your research and by providing the thesis title, you have allowed one more person to get hooked. Or maybe, there is someone who actually knows your former thesis advisor, likes insects, or likes the idea of hiring an insect neurobiologist. The date may indicate your “scientific age” and the university may also carry some implications.

At the top of your CV, you may want to put some biographical information, but then you may not. Your name will probably indicate your gender so that is not an issue. But do you want to give your birth date? your place of origin? marital status? These are issues that should not be factored into a hiring decision but frequently are (at least subconsciously) by some faculty. So if you think it might help, add it; but when in doubt, leave it out. If you decide to include personal information, do not give names or ages of family members.

You might want to include some of the following sections in your CV. I have suggested some entries for each heading:

Education

List your degrees (with as many hooks as possible) beginning with the most recent. Some people like to include post-doctoral training under education. Also, non-degree experiences could be added here (e.g., Cold Spring Harbor courses).

Academic Appointments

You can list any temporary teaching positions, postdocs, research associates, etc.

Honors

Cum laude, Phi Beta Kappa, undergraduate scholarships, fellowships, awards (especially “TA of the year” or other teaching awards), etc.

Teaching Experience

Beginning with the most recent, list any teaching experiences you’ve had, even if you did volunteer teaching for public school kids, a single guest lecture for undergrads or grad students, as well as all TA positions. You might want to de-emphasize research assistantships that relieved you of teaching duties. The point here is to establish a long-term interest in teaching. You do not want to appear as a postdoc who could not find “a real job” and has reluctantly decided to settle for a teaching position. Likewise, you do not want to appear to be running from the demands of research in search of an “easy” teaching job.

Professional Activities

List your memberships in professional societies (give dates of membership), editorial consulting for X journals or funding agency (you reviewed a paper or grant proposal for them, including those your mentor farmed out to you), committee memberships at the university or professional society level, any invited talks (e.g., your alma mater practice talk), and funded grants.

Publications (* denotes undergraduates as co-authors)

If you have any undergraduates as coauthors, set another hook by drawing attention to this fact.

Articles

Begin with the most recent including those in press. If you have both research and review papers, you might want to list them under separate headings to enhance your professional appearance. If you need to, you can add manuscripts in progress but this should probably be done if you have only two or fewer publications. It tends to draw attention to a weak publication record.

Abstracts

Begin with the most recent, and give where the abstract was published or where you presented the work. You may want to distinguish between oral and poster presentations, if you are keen to do so. Presentations at “in-house” formats should not be included in this list.

References

These are the people who will write your letters of recommendation. You should have their title, name, full address, and phone number; a fax number and an email address might not be a bad idea. Choose people who each have different perspectives of you, especially if they can comment on your teaching ability and/or your desire to teach. One of your undergraduate teachers might be appropriate if you were close to this person and have maintained contact. To facilitate the process for your references, notify them well in advance and mail them a list of addresses and brief descriptions of the positions.

Writing a teaching philosophy is like trying to photograph a dense fog, but at least you have to write only a maximum of 1.5 pages. (With 150 applications to read, no one wants to read epic statements.) You might explain more about the basis for your desire to teach; what courses you could teach in addition to the ones advertised (based on what you learned from reading the catalog, although this could be a touchy subject if someone on the search committee feels threatened, so use the phone call to help figure this one out); what teaching goals you might have; any basic beliefs about what constitutes good teaching; what you might do in the lab sections that deserves special mention. A good definition of a teaching philosophy is up for grabs, so ask faculty at nearby colleges to critique your statement in exchange for a free seminar. I have found that even faculty I had never met were willing to help out a budding young teacher.

The research statement should also be about 1.5 pages and should be in balance with your teaching philosophy; do not present a lopsided picture of yourself. You cannot go into too much detail since there is not enough room and no one will really understand it anyway. Make sure to cover three areas of particular importance: the nature of your research, undergraduate student involvement, and the potential of funding your research. If you want to brag a bit, you can add appendices under the appropriate area. Appendices are great devices because you are setting more hooks but the material is optional reading. The 1.5 pages or your research statement should stand alone, but if the committee gets serious about you, you have provided more material for them in an appendix to help the committee make a more informed decision. You might want to show off your publications so you can squeeze a few reprints into an appendix under the section describing your project. You may have submitted a grant or had one funded which you can tout in another appendix under the fundability section.

The Phone Call

If you get a call from a school requesting an interview, ask about the seminar audience, length of the talk, the presentation format (2x2 slides etc.), and whether a completed story (your thesis) or ongoing and future work is preferred. Ask

to meet with students without any faculty present, perhaps over a meal. Some schools do not automatically schedule this, which might imply what they think about their students. Meeting biology majors is very important since they will be your source of research colleagues and the people with whom you will work the most. Many PUIs will ask you to present a lecture to a class in addition to your research seminar. If this is not required, you may want to volunteer to give a lecture. This may give you better insight into the caliber of students and enable the faculty to evaluate you more completely.

From this point on, think of yourself not so much as competing against two or three other candidates but as a prospective employee looking for the best fit. You want to find your niche in the broad spectrum of approaches to answering the question, "How do we teach biology?" Some schools have created "research colleges" where most of the faculty receive extramural funding and have large research labs but do not stress curriculum innovations. Others send their students away for summer research experiences and put most of their resources into the curriculum and intensive student contact. These dichotomous models, and all those in between, can be successful only with the right combination of faculty members.

Now it is time to get more serious about your homework. Familiarize yourself with the department members and the courses offered. Look in the most recent March issue of a journal called *Academe*, which lists the average salaries for assistant, associate and full professor for almost every school in the country. The salary listed for an assistant professor includes those with 6 years of teaching experience, but keep in mind that science faculty often get higher salaries. This information will tell you what to expect as a reasonable salary offer. Read all the papers published by department members during the last five years as listed in Science Citation Index. Prepare a five-year research plan with an explanation of how it involves students. Also compile a list of equipment (with prices) that you will need to teach and conduct research.

The Interview

The average interview has the following basic format. You'll meet students, faculty, the dean (and maybe the president), give a seminar, go out to eat (and drink, but watch yourself), and generally be kept very, very busy. This process can be exhausting so don't let down your guard; mind what you say to everyone from the time you arrive until after you have left, including those delegated to transport you to and from the airport.

The interview provides your best chance to get answers to all your questions, so make the most of your visit. During your time on campus, there are a few things you should try to do. Go to the department and the library after hours to see who and how many are working. While in the library, look for the journals you will need. Ask to look at some housing, and get a feel for the quality and cost of living in the area. Make sure you get a good tour of all the facilities and equipment in the department, as well as the rest of the campus. Other points to keep in mind during your stay: note any differences between responses of tenured and non-tenured faculty; try to detect if this is an embattled department (e.g. animal vs. plant, molecular/cell vs. organismal/ field, research active vs. non-active); make sure that you meet everyone in the department and there are no hidden skeletons; bring a small notebook and take notes during your meetings with everyone - faculty and administration - because by the end, it will be hard to remember all the details; and if the occasion presents itself, casually mention the other schools considering you, because this makes you appear more attractive. If no one in the department conducts research, beware of the potential for unrealistic expectations of your research from both the department and the administration. Ask about the possibility of a reduced teaching load in exchange for student-based research or extramurally funded grants. Find out how reappointments and tenure decisions are made, who is involved in these decisions, and what percentage of faculty are denied tenure. Be prepared to be asked illegal questions concerning age, sexual preference, marital status, and children. (Questions concerning religion are legal at church related schools which advertised as such.) You have three options in response to illegal questions: 1) refuse to answer, 2) note the impropriety (either overtly or subtly) of the questions but answer them anyway, 3) anticipate the questions by inquiring about schools, benefits plans, or job opportunities for significant others.

The Dean

Some questions are best asked of the dean. Ask him or her: the salary range offered for this position (this may not be their final offer, but negotiations should wait until after you have been offered the job); set-up funds; and the benefits package including annuity, health insurance, moving expenses, occasional free classes for family members, tuition

remission for your children. Sometimes you will be asked open-ended questions concerning set-up money. Dean: "How much were you thinking?" Candidate: "That depends on the institution's commitment to research." This is where your ability to bargain will be useful. Remind the dean that 1X funding gets 1X results and 10X funding gets 10X results. However, this kind of hardballing puts reasonable expectations on you to perform. Ask the dean to define "scholarly activity" in regards to tenure. It is a good idea to present the dean with a list of equipment which should be prioritized as equipment needed versus wanted, with potential funding sources for the latter. This list should include everything you can justify since you can look very generous as you compromise during the negotiations. It might be worth pointing out that time spent on applications for funds to purchase essential equipment is time not spent on teaching or research. Again, the final negotiations will come later, after the job offer is made.

The Chair

The chair has information and/or control over certain aspects of the department. Ask the chair how long he or she has held this position and whether this is a rotating position or an open-ended one. Have "scholarly activity" defined in the chair's own words and compare this with the dean's response. Does the definition include: attending national meetings (with or without posters and/or students), publications (is there any weight given to one article in *Nature* vs. three in obscure journals), publication of textbooks and lab manuals, national society committee participation, grants applied for versus funded, research with students (with or without resulting publications)? Find out who in the department has received grants lately and from which agencies. Ask to see your potential office and research space in addition to the teaching labs. Beware of vague responses and promises of a newly renovated lab space that seems too good to be true. If they do discuss a space that is not currently available, ask about the budget for renovations and to see the blueprints.

Questions for Every Faculty Member

It might prove informative to ask these questions of each member in the department. You might uncover some factions within the department that you might not notice otherwise. What percent time does he or she spend on teaching, research, and service? Compare their responses to what you know about their publications and when they were hired, since expectations at most schools have changed in recent years. What is the average size of classes, labs and overall workload? How does each member see the new position? The new physiologist position, for example, is it for a plant physiologist, human physiologist/anatomist, or someone who does patch clamping? Is everyone in agreement, or are there opposing ideas being presented?

Questions for Any Faculty Member

Here are some general questions you can ask any department member. Would you have access to email in your office? Does the department use IBM or Mac? Is there a policy concerning sabbaticals for both tenured and non-tenured faculty? Does the department use TAs and work-study students? If so, how are they funded and how are they assigned? Who is responsible for setting up equipment and washing glassware used for teaching labs? Does the college have a license to work with radioactive isotopes? Are biology majors required to do research? Do they have to submit a thesis? Are there any curriculum changes in the works? Are there any collaborations currently underway within the department, with other departments, or other schools? Are the sciences coordinated and unified, or split and possibly hostile? Who pays for photocopying, phone calls, interlibrary loans, faxes? Does the administration support travel to scientific meetings? Is there financial support for research expenses or sabbaticals? How can subscriptions to vital journals be requested? Is there access to MEDline or other online source for journal articles? Do you have access to the nearest large university research library? Is there a formal speakers series, and who is responsible for inviting the speakers?

Questions for Students

Often, students will tell you the way they see their school and department without "politically-correct" filters. Ask them: what courses they like and hate, do they read journal articles, what are the strengths and weaknesses of the depart-

ment and school, do all the faculty get along, with hindsight would they choose the same school again, do they control any aspect of the department (speakers, clubs), have any alumni returned to talk with them about life after graduation, do they have any future plans? Invite some students for a more informal discussion over coffee or soda, if there is time during the evening.

The Job Offer

If you have asked all these questions and they still want to hire you, don't jump at the offer right away. Tell the caller you would like a few days to consider the offer and ask to come visit again in order to finalize details and let your significant other see the area, though you may have to pay for this trip yourself. You might want to call other places you are considering and apprise them of the offer and see if they can match it. Once you have signed the contract, never again will you have the ability to directly affect your salary. After you sign the contract, your annual wage increases will be percentages of your starting salary. It is worth reminding yourself that you have been selected with much pain and expense and that the first offer may not be as high as they are willing to go. It's like buying a car; some places offer fixed prices while others like to haggle. You will have to deduce this distinction on a case-by-case basis. One cautionary note: most PUIs are not accustomed to hardball tactics so be firm but not pushy. You do not want to spend all of your political capital with the dean during the negotiations because the dean may extract his or her revenge by providing a smaller percentage salary increase for the second year in order to recoup the PUI's losses in your high starting salary.

After you have the final offer, write down what you understand to be the complete package (e.g., teaching load, set-up money, lab space, salary, and benefits) and send two copies to the dean with one to be signed and returned to you. Explain to the dean that this unwieldy procedure is designed so that neither you nor the college will be surprised later and no one will feel misled.

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