

## **Postdoc Academic Chat #9**

### **Teaching at a Liberal Arts College or University**

**Tuesday, June 7, 2016**

#### **Readings**

**#1 Applying for, and Succeeding in, Jobs at Small Liberal Arts Colleges**

**#2 Applying for a Job at a Liberal Arts College**

**#3 Juggling Research and Teaching at a Small Liberal Arts College**

#### **#1 Applying for, and Succeeding in, Jobs at Small Liberal Arts Colleges**

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#### Talk Outline:

1. Who am I and why am I here?
2. What is life like at a liberal arts college (LAC)?
3. Why would someone want a job at a LAC?
4. What does it take to get a job at a LAC?
5. How would someone succeed in a job at a LAC?

#### 1. Who am I and why am I here?

Current Position: Associate Professor of Biology and Neuroscience Pomona College, Claremont CA

Previous Position: Helen Hay Whitney Postdoctoral Fellow Harvard Medical School – Van Vactor Laboratory

Graduate Degree: PhD in Anatomy/Neuroscience Cambridge University – Holt Laboratory

Undergraduate Degree: Biology with Honors Grinnell College, Grinnell, IA

#### 2. What is life like at a liberal arts college (LAC)?

Balance between teaching and research

50% teaching, 40% research (and 10% service)

#### Teaching:

Major focus of first years is developing pedagogical skills Generally spend 10-12 hours per week in front of class/laboratory Preparation time is substantial, lab preparation can be onerous. Major consideration for promotion and advancement.

#### Research:

First few years – spent setting up lab, writing grants, training students. Expectations are that you apply for grants and publish in first three years. Subsequently, one paper every 1-2 years is expected.

Generally similar to expectations at a major research institute, but: Research is conducted at slower pace (no grad students, postdocs or techs) Time dedicated to teaching/mentoring/supervising/advising is much higher.

### 3. Why would someone want a job at a LAC?

It's not a universally appealing job! You must be PASSIONATE about teaching to enjoy this job (> 50% of your time)

Why I sought a job teaching at a small liberal arts college:

1. I love working at the bench, supervising students and teaching.
2. Working with motivated, intelligent people is very important to me.
3. I enjoy the collegial and cooperative undergraduate atmosphere.
4. It's important to me that I'm contributing to society in a tangible way.
5. I do not want to spend a substantial part of my day in an office writing grants.
6. Balancing family and work life is very important to me.
7. I value (and received) an education in the liberal arts.
8. The students are exceptional. My lab: 50% MD, 40% PhD, 10% other.

### 4. What does it take to get a job at a LAC?

A. Identify Liberal Arts Colleges that are hiring:

Search in Science Jobs issue – most LACs advertise here.

Search in “Academic Jobs Online” ([academicjobsonline.org](http://academicjobsonline.org))

Make a list of your top choices, and look at the college's website. Human resources, Dean's office, or departmental websites list job offers.

Note: applications are generally due in October/November, Interviews in December/January, Job offers are made in January/February (for a position starting in July)

#### 4. What does it take to get a job at a LAC?

The ten most important qualities in getting a teaching job:

1. Strong publications from graduate and postdoctoral work.
2. Experience TA-ing and supervising rotation or undergraduate projects.
3. A track record of successful grant writing (graduate and/or postdoctoral).
4. Four outstanding letters of recommendation. (It's incredibly important to be able to get along with your peers.)
5. A research proposal that can be successful in the undergraduate context Identify your niche, have summer-student sized projects.
6. Knowledge of what the job is like, and why you want to do it.
7. A lab budget that is reasonable – startup packages rarely exceed \$100K.
8. A good “fit” in the department - areas of research interest and teaching interest. (No major overlap with existing faculty ability to fill “gaps” in expertise)
9. Ability to communicate effectively with students and faculty.
10. A model organism that is suitable for a LAC environment. (No primates!)

#### 4. What does it take to get a job at a LAC?

What are some misconceptions about applying for these jobs?

Myth: You need Cell, Science or Nature papers to get a job at a “good school”.

Reality: A steady publication record is crucial, as is a history of grantsmanship.

Personally: I had 2 papers from my postdoc (+5 from grad school) when I applied.

Myth: You have to have taught your own course/courses to get a tenure-track job.

Reality: Very few people have done this, but it would certainly help.

Personally: TA-ing and supervising rotation/undergraduate students can be enough.

Myth: A teaching job is for someone who can't get a research job.

Reality: They're very different jobs and require different skills

Personally: Our last three searches have had >200 applicants each.

Myth: A job at a liberal arts college is committing “scientific suicide”

Reality: The pace of research is MUCH slower, but you will still (need to) publish!

Personally: My lab of 3-8 undergraduates publishes about 1 paper per year.

Parts of the application:

Cover letter: you, educational history, why teaching, why their college, why you?

CV: tailored to small undergraduate college (focus on teaching) educational history, teaching experience, research experience honors and awards, fellowships, publications, presentations, references

Statement of research interests: Start with big picture – few people will be in your field. Outline proposals, and describe the suitability to undergraduate work. Two pages.

Teaching philosophy: This is the hardest part because it's so ill-defined. Why do you want to teach? What made you decide? Why do you want to teach at this specific college? What existing courses can you teach? What new courses can you develop? Know if you're a replacement or a new hire, and propose courses accordingly.

Interviewing on campus at a small liberal arts college:

The on-campus interview:

It's generally a two-day process (sometimes three) Don't overdress.

Day 1: Meet with faculty, give research talk, dinner with faculty.

Day 2: Meet with more faculty, the president, the dean, simulated lecture, dinner with students.

Ask questions! For example. . .

What do the faculty like and not like about the college?

How heavy are the teaching loads, research funding, sabbatical schedule?

What are the available grants, collaborations, facilities?

What's the city like, how expensive is housing, where do faculty live?

Is there shared common equipment? What are the strengths and weaknesses of the department/college?

How many people get tenure? (the vast majority of people do!)

The on-campus interview: 3 Key parts

1. Research talk - starts with an introduction by the chair

PITCH - most important part of interview accessible to 2nd years, but directed to faculty.

Lots of background information and describe the relevance of your work.

Cover what you have done and what your lab will do if you get the job.

50 minutes with questions DON'T GO OVER!!!

2. Simulated lecture (provide audience with a summary handout)

Put your lecture in the context of course (syllabus outline). again, PITCH is key - make it understandable to everyone. 50 minutes – show how you like to teach – use your own style.

ENGAGE students – initiate discussion - ask them questions.

Prepare for questions from faculty.

3. Individual meetings – students and faculty

PREPARATION! Know EVERYONE's work.

HAVE QUESTIONS.

Read abstracts from their publications and have questions.

Also meet with dean, president.  
Communicate relevance!

Succeeding at a Liberal Arts college:

Good books on this subject:

Tomorrow's Professor. Richard M. Reis

How to Succeed in Academics. Linda and Edward McCabe

Good Start. Gerald Gibson

Another great reference:

How to get a teaching job at a primarily undergraduate institution

A. Malcolm Campbell, Biology Department, Davidson College

## **#2 Applying for a Job at a Liberal Arts College**

By David Allen Harvey

*From the Professional Issues column of the September 2003 Perspectives*

*Perspective On History - A Newsmagazine of the American Historical Association*

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Graduate students entering the academic job market often receive conflicting advice, or worse, no advice at all, on how to present themselves to prospective employers. In a Sunday morning session at a recent AHA annual meeting, a small group of graduate students and faculty discussed the issue, and the efforts of an AHA initiative, the Preparing Future Faculty program, to remedy it. One common problem noted by all participants in the session was that graduate students trained in large research universities often assume that they will find employment in such institutions, while in reality, most will instead be employed in smaller colleges with heavier teaching loads, lower (if any) research budgets, and, of course, lower salaries. Senior faculty at major research universities, particularly the elite private ones, often ignore this reality in training and advising the faculty of the future, whether because they themselves had found positions before the job market crisis set in, or because they believe that other forms of academic employment are somehow beneath their students. In our discussion, many participants noted that this narrowly focused research-university mentality causes many graduate students and new PhDs to make serious errors, often inadvertently, which sabotage their candidacies at other types of institutions. This complaint was particularly strong from community college faculty, but is equally valid for small liberal-arts colleges, the educational environment I know best. I attended the AHA annual meetings of 1999 and 2000 as a job candidate in modern European history, and more recently, at the 2003 meeting, I sat on the other side of the table as a member of a search committee for my current employer, New College of Florida. I would like to share with all prospective

applicants to liberal-arts college positions what I have learned from my own experience.

Liberal-arts colleges are very different kinds of institutions from large research universities and the demands and rewards faculty can expect are different as well. Salaries are often lower than at major research universities and sabbatical leave and institutional funding for research are generally harder to come by. On the other hand, small college faculty come to value the intimacy of small classes, the opportunity to teach broadly across various fields, and the powerful sense of community between students and faculty. Many professors who teach at liberal-arts colleges prefer them to larger, more impersonal research universities because they feel that, in small colleges, teaching and research exist in their proper balance, and people, whether faculty or students, are valued as more than their resumes or their test scores.

My current institution, New College of Florida, is highly distinctive. We are a public honors college, an anomaly in a state of sprawling mega-universities, and our focus rests squarely on the liberal arts, rather than on pre-professional training or intercollegiate sports. New College was founded as an experimental private college in 1960, dedicated to the principle that "each student is responsible for his or her own education." Consequently, New College gives students written evaluations rather than letter grades and measures progress by the completion of semester contracts rather than the accumulation of credit hours. This unique system was maintained when New College became part of the State University System of Florida in 1975, and led to its designation by the Florida Legislature as the state's honors college in 2001. While research is certainly expected and valued, the primary responsibility of New College faculty is teaching. Service and advising obligations are also heavier than is the case at many larger institutions.

### The Application

First, find out about the institution

Almost all liberal-arts colleges have web sites, and these often contain valuable information about the history, mission, and culture of the college. In our own recent search, for example, those applicants who showed familiarity with the unique character of New College and expressed an interest in it stood out from the crowd. Those who sent us a form letter, occasionally with the wrong school's name on it, also stood out—but in a very different way!

Be specific about teaching

Spell out exactly what courses you would be willing and able to teach, and offer syllabi or abridged course descriptions wherever possible. Stress any teaching experience you have had, whether at your graduate institution or elsewhere, and discuss your teaching philosophy and expectations of students. Play up any teaching fields you may have outside your area of specialization; for a liberal-arts college, a well-rounded generalist is

more attractive than even the most productive narrow specialist. If senior faculty have observed your teaching, ask them to refer specifically to it in their letters of recommendation. If you have a brief, easy-to-read summary of student evaluations of instruction, you may wish to include it in your application materials, but avoid sending masses of evaluation forms, which committee members will not have the time to read, and which they will naturally suspect of partiality.

Be sincere

Don't lie about your interests or abilities, or feign a strong desire to join an institution to which you would not wish to go. Such behavior wastes everyone's time and is usually fairly transparent. Don't be bombastic in proclaiming your qualifications with phrases like, "I believe I would be an excellent choice..." and don't simply parrot the language of the job advertisement. Instead, state your full qualifications, express a sincere, informed interest in the position, and let committee members draw their own conclusions.

## The Interview

The Basics

Few candidates manage to win job offers at convention interviews, but many manage to lose them there. The interview is your first opportunity to give prospective employers a sense of who you are as a person (they have, presumably, already examined your qualifications and concluded that you look good enough "on paper" to justify a face-to-face meeting). Opinions vary on whether candidates should present search committees with new materials during the interview (copies of publications, course syllabi, teaching portfolios and the like). Personally, I think that these materials should be sent prior to the convention. You may wish to bring some extra copies of your c.v. to ensure that each interviewer will have one at hand. You do not, however, want interviewers to be leafing through a stack of unfamiliar paperwork rather than listening to your answers to their questions. Search committees have plenty of opportunities to familiarize themselves with your written record. The interview should be an opportunity for them to listen to you, to get a sense of how poised and articulate you are, and how well you are able to communicate orally your scholarly ideas and interpretations (a good, though not infallible, predictor of your future effectiveness in teaching).

Don't condescend

Never assume that search committee members are not active scholars, or that they will not understand or appreciate your scholarly interests. In fact, most small-college faculty are graduates of the same major research universities as are applicants, and many of the former are accomplished scholars in their own right.

Don't be obscure

Faculty at smaller colleges usually have to cover very broad areas, and if there is an open position in your field, it probably means that no one in the department shares your area of specialization (except, perhaps, a senior scholar whom you may be replacing). Search committee members will therefore be less likely to take interest in the arcane details of your dissertation than in the broader historical issues it illuminates. An ability to discuss the big picture and the general relevance of your work will not only convince scholars from outside your field of its importance, but will also demonstrate that you are comfortable discussing the broader contours of the history you study and therefore will be able to teach it to undergraduate students.

Be interesting

Liberal-arts colleges are small, close-knit communities, and no one wants to be stuck with an unpleasant colleague for the next 30 years. Stress what you are able to contribute to the campus community, particularly your ability to teach broadly, both within and outside your field, and your willingness to serve the institution, especially in areas such as mentoring and advising students. Other interests or abilities, such as theater, music, or intramural sports, may be mentioned as well, though these should be clearly subordinated to strictly academic pursuits. When search committee members ask themselves the inevitable, "Do I want to work closely with this person for the next x number of years?" you should ensure that the answer will be "Yes."

—David Allen Harvey is assistant professor of history at the New College of Florida.

### **#3 Juggling Research and Teaching at a Small Liberal Arts College**

**From American Physiological Society (APS) <http://www.the-aps.org/mm/Careers/Mentor/Career-Choices-and-Planning/Postdoctoral-Fellow/Career-options/Academic-Careers/Research-Careers-in-Academia/Research-Careers-at-Liberal-Arts-College/Small-Liberal-Arts-College>**

**Steven Swoap, Ph.D. Williams College**

Steven Swoap received his PhD in 1994 in Physiology and Biophysics from the University of California, Irvine from the lab of Ken Baldwin. After a postdoc in Molecular Cardiology at University of Texas Southwestern Medical Center in Dallas, he accepted a faculty position in the Department of Biology at Williams College. He currently is Chair of that department. Swoap's research examines the molecular, cardiovascular, and metabolic adjustments during caloric restriction and fasting. He teaches courses on Physiology, Biology of Exercise and Nutrition, Molecular Physiology, Frontiers in Muscle Biology, Biochemistry. He was awarded the Guyton Integrative Physiology award from APS in 2001. He has had many Undergraduate Summer Research Fellows in his lab, and four of his previous undergrads were David Bruce award winners.



As you enter the job market, you are bound to run across advertisements for positions in small colleges with which you are probably unfamiliar. These small colleges are not much like the state universities where you are likely training.

While the primary mission of a small college is undergraduate education, you will be pleased to know that part of that mission includes involving the undergraduates in a vibrant research program. Even though you might not have heard of the small colleges looking for new faculty, the current tight job market may encourage you to apply to these schools. Perhaps you will wonder, “Can I pull off a good research career at a small liberal arts school?” The answer is a resounding “yes”, with a number of caveats to take into consideration and potholes to avoid.

Here is my top ten list of questions to ask yourself and/or your future employer.

### **#10. What are my teaching responsibilities?**

Probably the biggest misconception that most folks have about the life of a small college professor is the extremely high amount of teaching required. In fact, colleges have a tremendous range in their teaching requirements. Some schools require four courses per semester. You will find it difficult to grab any time for research at those colleges and will most certainly leave bench science behind. Other colleges, like my school, Williams College, require much less ... I teach one course and two labs per semester. You may find that even research I institutions require more teaching. As you ask around at individual small liberal arts colleges, I think you will find that the average is about 3-4 courses per year.

By the way, I have a pet peeve ... when folks use the phrase “teaching load” and in particular the word “load.” This phrase makes it sound like teaching is an onerous burden. If you think teaching is just a distraction, then perhaps the small college scene is not for you. For me, I love the teaching aspect of my career. Teaching courses makes me dig deeply into the literature --- some of my best ideas for experiments have sprung directly from preparations for a course.

### **#9. Do I need previous teaching experience?**

The short answer is “not necessarily,” at least for colleges with which I am familiar. A little Teaching Assistant experience will do just fine. When we hire a new faculty member, previous teaching experience is not even in our discussions. Rather, we look for someone that has an exciting and robust research program and has the type of personality that won’t wilt in front of a lecture hall.

In addition to your job talk, don’t be surprised if you are asked to give a “teaching demo” or a “typical class” on your interview. It probably won’t be more than 30 minutes, and likely will be at the blackboard ... a classic “chalk talk.”

### **#8. Can I make it without graduate students?**

The primary difference between a college and a university is that colleges don’t offer graduate degrees. Not to state the obvious here, but that means no graduate students. You may think it is impossible to run a lab without grad students. However, there are two sides to that coin.

On one hand, undergrads that train in your small college lab have significant time constraints. You can't expect 60 hours a week from an undergrad. I need to constantly remind myself that while my physiology experiments are a huge priority in my life, many undergrads worry just as much about their singing group, their cute lab partner in microbiology, or the Thursday night party. There is no getting around the fact that the pace of productivity of a small college professor is impacted by the student population. On the other side of that coin, however, doing research at a small school ensures an endless supply of students. Consequently, you will have a steady stream of bright, talented, and highly motivated students. You will be in the lab, elbow to elbow, training the students on a yearly basis. If you look forward to having a physiology "desk job" with technicians, post-docs, and grad students running your experiments while you jockey for grants and write manuscripts, then being a biology professor in a small college may not be for you.

Finally, working with the undergrads means that your music tastes will always be fresh and hip. Now, if they could just do something about my receding hairline.

#### **#7. Speaking of jockeying for grants, what is the funding like for research at small colleges?**

You are going to love this. Both NIH and NSF have programs for people just like you. NIH has the R15 program, with the acronym AREA (Academic Research Enhancement Award). NSF has the RUI (Research in Undergraduate Institutions). Both programs are evaluated using the same standards set for R01s or non-RUI proposals.

With the caveat that I have no clue about what happens behind the doors at NSF and NIH when they evaluate AREAs and RUIs, I think there is a little more flexibility in the quantity of publications and preliminary data. One major thrust of these programs is the training of undergraduate researchers – you should make sure that is sizable component in your grant application.

NSF also hands out CAREER awards, which are for junior faculty that actively integrate their teaching responsibilities with their research program. Here is a secret ... shhh... we at small colleges integrate teaching and research daily. We should have a huge advantage over faculty at large universities for competitions like the CAREER award.

#### **#6. Will the college provide financial support for you and/or your students to attend national meetings, such as EB?**

Since you will likely have less interaction with other physiologists at a small college compared with a large research I university, it is even more important to attend meetings, present data, and interact with colleagues. It is also a great opportunity for undergraduates to present their research.

In my experience, most small colleges provide assistance to attend at least one national meeting a year regardless of whether you are presenting. In addition, there are often internal grant opportunities to obtain funding for yourself or students to attend meetings at which you are presenting. If your college does not provide this type of support, you

should ask if it could be added to your start-up so you can attend some meetings until you have your own grant support for travel.

At the risk of creating additional competition for my own undergraduate students, you should also be aware that there is a lot of money out there to support undergraduate research for the summer. For example, the American Physiological Society has their Undergraduate Summer Research Fellowship program. Not only does the student get a stipend for the summer (and a small bit of cash for your lab), this program also pays the way for undergrads to attend EB or another APS conference. EB has a competition each year - the David Bruce awards - for the top undergraduate abstracts/presentations. Definitely a nice feather for your student should he/she win.

#### **#5. Can you handle a silly mascot for your college?**

From The Cobbers, to the Jumbos, or the Moundbuilders, or my own Purple Cows ... you will do just fine!

#### **#4. Does the college have facilities for your model organism?**

If you work with cell culture or any non-vertebrate organism, you can take your research program most places. If you work with vertebrates, though, you need to make sure that the college has suitable animal facilities. Small colleges range from zero vertebrate facilities to extensive ones, like we have here at Williams College.

If I were to give out any advice, I would suggest you not compromise your research program to squeeze into a college that cannot support your critters. Oh, and just a heads up, you will soon be on your small college's animal care committee.

#### **#3. Will the “start-up package” offered be enough”?**

Right off the bat, you should know that the start-up funds will be much less than provided at a research I institution – even 5-10x less. So is that amount enough? The reason you can build an exceptional research program at a liberal arts college is the use of shared equipment. I don't mean sharing pipettors or even PCR machines, but sharing the big stuff. A start-up package might be meager compared with a research I university, but if the college has adequate equipment and good collegiality, you can do your top-notch science. The college that just made you a job offer desperately wants you to succeed in your position. I don't think they will try to low-ball you.

Another item for your radar screen --- it is possible that you will be asked to share bench space with another professor in the department, so don't be shocked if that happens. You should assess closely whether the lab space is sufficient for your work.

#### **#2. Is it publish or perish in the life of a small college professor?**

I think it is fair to say that if you don't publish a peer-reviewed manuscript with original research during your assistant professor years, you will have a difficult time getting tenure, or your next university job for that matter. However, it can be difficult to determine “how many is enough” and this is certainly college-dependent. If you teach 4 courses a semester, and they also expect 10 manuscripts in 5 years, you are being set up to fail.

While assessing benchmarks like this may be an awkward item to ask in an interview, it is important to get some sense of the expectation. Further, you can check the publication records of faculty that have recently received tenure in that department to see if there is a pattern. In my eyes, quality is important and I don't count beans.

### **#1. Will you be lonely?**

Most likely, you will be the one and only physiologist at your college. You may not be able to walk down the hall to discuss with your colleagues Na<sup>+</sup> flow through a renal epithelial cell. Of course, we are all over-connected to our phones and the web (how many times have you checked your e-mail today?), and contacting a colleague across the country can be easy. But reality sets in quickly. You become the top dog, and only dog for that matter, for physiology queries.

I would not be truthful if I said I did not miss the back and forth among experts in my field. But in its place, I have gained something just as valuable ... wonderful interactions with my colleagues that are experts in plant biochemistry, microbiology, evolution, ecology. I had no idea how much these interactions with folks not trained as physiologists would shape my research career.

In addition, your colleagues will not all be nerdy scientists. You will be on committees with religion professors, play hoops with art historians, and attend dance recitals sitting next to business professors. Choosing a small college has been a blessing for me. So, there you have it. My top ten (OK, only nine) questions to consider when you think about a career in a small college.

NOTE: to add your comments or questions, please [email](#) us.

### **Comments:**

Great article! I would add that some small liberal arts colleges also have considerable advising, depending on the major. It turns out to be quite rewarding, but there is certainly a learning curve with it. If possible, you may want to negotiate less advising your first year while you are setting up your lab. Just remember, someone else will be taking those advisees, so it's important to do your fair share once you are settled into the job.

**Lara DeRuisseau Le Moyne College**

**Response:** Excellent point. Advising comes in bouts ... your advisees come just as registration occurs for the next semester. We don't have first-year faculty advise students. After that, you take on that aspect of the job.

**Steve Swoap**

Dr. Swoap's article brought back fond memories and long-forgotten questions for me. When I was on the job market a few years ago, I was hoping very much to secure a position at a small, liberal arts college. Clearly, that didn't happen. Although I have no regrets and am very happy in my current position, the call of the Liberal Arts still murmurs in my ear from time to time. I found two of Dr. Swoap's questions to be

particularly significant. First, "Does the college have facilities for your model organism?". On the second day of one of my interviews, after giving my talk on rat neuroanatomy and physiology, one of my search committee members mentioned that the school did not have a vivarium, but that I was welcome to house a few rats in the space connecting my would-be office to my would-be (teaching) laboratory. Given the nature of my work (and the severity of my histamine response to rodents), this was a definite deal-breaker. Second, "Will the start-up package offered be enough?". I was prepared to deal with fewer start-up funds in this situation - not surprising with some of the teaching expectations, the more limited time for research, and the focus on undergraduate research projects. However, one institution stated that their "typical" start-up was about \$25K, which was unworkable with my research needs. I whole-heartedly agree with Dr. Swoap that opportunities and rewards are great at schools of this type, even if your mascot is a pink flamingo wearing motorcycle boots, but the job candidate needs to be aware of his/her own needs and how they align with each potential hiring institution.

**Kristin Gosselink University of Texas, El Paso**

Dr. Swoap made some excellent comments about the advantages and disadvantages of accepting a position at a small liberal arts university. My initial reluctance of applying to a similar university was overcome by how well I thought the job description matched my skill sets. I have found that the benefits for me outweigh the disadvantages. I have found that working with undergraduates can have huge benefits. You are able to find motivated students by observing them in lab situations before investing research time and resources. Additionally, if you identify them early, you can have them for up to five years while they complete their degree. This allows them to have continuity with a project that a master's student is not able to accomplish.

The pressure to be constantly looking for funding sources is not there, but if you land a successful grant or collaboration with a larger lab, it is deeply appreciated by the university. This gives freedom to explore research avenues that one might not pursue if they were in a higher pressure research environment. I have several projects that I will be starting in the Spring that have been on the "back burner" for years because they would not generate the funds necessary to justify the time involved. Now, I can assign a couple of undergraduates to the project and support it with my limited internal research funds. Finally, one great benefit to being in a smaller liberal art university is the freedom to choose which classes to teach. I have complete freedom to develop courses that have not been previously offered. The only requirement is that I have to have student interest. For instance in the Spring, I am offering comparative vertebrate anatomy as well as a field collecting techniques course that is not on the curriculum. Typically, in larger universities, assistant professors do not get this benefit so early in their career.

**Ray E. Willis University of Science and Arts of Oklahoma**

At our institution, TA experience alone is not sufficient to gain serious consideration. We want to see that a candidate has had responsibility for an actual course - designing a syllabus, writing lectures, writing and grading assignments. This is a very different experience from being a TA and it is essential to us that our future faculty know what they will be expected to do, and that they can do this successfully. This is true at most

PUIs (primarily undergraduate institutions) that I am aware of. For us, tenure decisions rely first on teaching excellence, and then scholarship, so we want to be sure that the faculty we hire will be able to meet this requirement.

**Jean Hardwick Ithaca College**

**Response:**

I think it is important to get a wide range of opinions. There will be differences among schools. I just would not discourage a potential applicant from applying for an opening simply because s/he does not have teaching experience.

**Steve Swoap**

**Questions:**

Do you think that working at a small college gives you more or less flexibility and time for family or other responsibilities?

**Sarah Lindsey Wake Forest University**

**Response:**

This is a tough question. And the answer may just end up varying on an individual basis. My hunch is that people at small colleges do have more time/flexibility, but I don't have hard data on that. Teaching can be relatively rigid. For example, if you teach a MWF class at 9a, the students expect you to be there (of course, classes can be canceled or someone can cover for you). But on the whole, teaching a course gives you a rigid few hours per week. The rest of my professional life (working with students, grading, office hours, writing manuscripts, etc) is not so rigid. So, if I am to coach my daughter's soccer team, I can arrange my time to do so.

**Steve Swoap**

One of the primary challenges that I have faced when involving undergraduates in my research (perhaps due to their limited time to participate) is finding ways to engage the students enough so that they are dedicated to the projects, motivated to do a good job, and can take "ownership" over the work that they are doing in the lab. This is something that I find easier to do with graduate students, as it is inherent in their training that they will conduct their own independent -- or at least, partially-independent -- projects. But for undergraduates, other than promising things like potential authorship at a later stage, I sometimes struggle to find methods to motivate them to get more engaged in the research (both mentally and literally). Do you have advice regarding this issue?

**Angela Grippo Northern Illinois University**

**Response:**

This may boil down to the role of undergraduates in labs at large universities vs. the role in small colleges. At the university level, undergrads are typically plugged into existing projects whereas undergrads at small colleges are top dogs. Students at small colleges take ownership of the project because they need to --- otherwise, the project does not get done. I start them with a small project to get them accustomed to the lab/equipment/etc. Then, after they show promise, I have them start designing a project of their own (under the umbrella of what the lab goals and grant goals are). If there is a way for you to let the

undergrad be involved in the design aspect (even if you completely revamp their idea/experimental design), the student may well want to see it through.

**Steve Swoap**

- 1) What are the expectations for obtaining extramural funding?
- 2) What types of grants are science professors applying for at small colleges? (e.g., NIH R01, R15, foundation grants, NSF, internal funding, etc) Or is the start-up money and department funding adequate to run a small lab with undergraduate students?
- 3) Is there generally institutional support for you and your students to attend conferences? How often do you attend conferences? How is student travel to meetings supported (department/college funding, society travel awards, etc?)

**Erica Wehrwein Mayo Clinic**

**Response:**

- 1) This will likely vary from school to school, but from personal experience, I can say that extramural funding is not required. I feel it is important for faculty to continue to attempt to get funding by writing grants. This is important mostly to have faculty think more broadly and more in the long term than just the next experiment around the corner. We all realize how government funding levels can ebb and flow. In my mind, it is “the trying” that counts.
- 2) Start up should last you a couple years, of course depending on how much you get and the expense of your experiments. Science professors are applying for NSF, R15, internal funding, and foundation grants (in that order). Departmental and internal funding does sustain the labs of some of our faculty members. But if your research is expensive (like mine), internal funding will just cover any gaps in external funding.
- 3) At my college, faculty receive enough support to attend one major meeting per year. Grants can cover additional ones. I typically attend 3 meetings per year. My students are supported by the administration or APS travel awards. I like to expose my students to the vastness that is Experimental Biology, just so they can see the variety of research (both topics and depth). I may be lucky, but when I have asked my administration for funds for students to travel, I have received them.

**Steve Swoap**

Do you know of anyone who has transitioned from liberal arts research to more research-focused careers in industry and academia? Is this possible? I think a lot of us want to know if we choose one fork in the road towards undergraduate research is it possible to take the other path later down the road?

**David Knight University of North Texas Health Sciences Center**

**Response:**

Other faculty have definitely made the transition from an undergrad institution to more research-oriented careers. I think you learn pretty quickly if delivering a lecture to the 18- to 22-year old set is something you want to do as a career. It certainly is not for everyone -- the slower pace of productivity can be frustrating. Transitioning from a small school to a research university requires a constant flow of publications and the promise of a constant inflow of funds. I think the transition from industry or a research university to a

small undergraduate institution would be more difficult than the other way around. You have to make a great case for yourself that you want teaching to part of your career.

**Steve Swoap**