

## **Postdoc Academic Chat #9**

# **The Academic Landscape: Different Schools Offer Different Opportunities**

**Wednesday, June 19, 2019**

### **Readings**

- 1. Organization of a 'Typical' University**
- 2. The California State University System**
- 3 Career Opportunities for Ph.D.s and Postdocs at Community Colleges**

#### **1. Organization of a 'Typical' University**

From time to time it is useful to review the university structure since, believe it or not, there are many faculty and students in higher education who are unaware of what takes place beyond the department level. The brief excerpt below gives a nice summary the typical U.S. university structure for easy reference. It is from Chapter 2: The Scientific Investigator Within the University Structure in, *Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty*, based on the BWF-HHMI Course in Scientific Management for the Beginning Academic Investigator. Burroughs Wellcome Fund. Research Triangle Park, North Carolina, Howard Hughes Medical Institute Chevy Chase, Maryland. Copyright © 2004 by the Howard Hughes Medical Institute and Burroughs Wellcome Fund All rights reserved. Reprinted with permission. - *Richard Reis*

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Although the major goal of the U.S. universities is the advancement and dissemination of knowledge, universities also need funding to support their activities. A university must seek revenue from a variety of sources and more and more, faculty members are encourage to generate income. You will need to make your research program either self-supporting or demonstrably worth its cost in some other way.

Most U.S. research universities have roughly similar organizational and reporting structures. The titles of the executive officials may vary, but their functions are generally the same. The organization of a university's administrative staff and its methods of operation reflect a strong tradition of faculty dominance.

University-Wide Responsibility

\* Board of trustees or board of regents. The university's highest authority, this governing board is composed of academic, business, and community leaders who hold appointed or elected positions with specific terms. The board meets regularly to review all major policy, financial, and management decisions, including decisions about faculty appointments, promotions, and tenure.

\* President or chancellor. The university's chief executive officer, this individual has general oversight of the university's academic programs and financial health. He or she is also the university's public spokesperson, dealing with "big-picture" issues such as relationships with the legislature and other funding bodies, alumni relations, and fund-raising.

\* Provost or vice president for academic affairs. As the university's chief academic officer, the provost has programmatic and budgetary oversight over all academic activities. The provost reviews the appointment papers of new faculty members and receives reports from the promotion and tenure committee. The deans of the various colleges report to the provost for academic-related matters. In some universities, vice presidents who are involved with academic affairs (e.g., research, student affairs) also report to the provost.

\* Vice president for administration and finance. The university's chief financial officer, this individual is in charge of the fiscal affairs of the university and often also oversees diverse functions such as facilities planning and construction, human resources, and campus services (e.g., parking, public safety, maintenance, and mail service).

\* Vice president for research. The university's chief research officer, this individual oversees grants and contracts, research funding, research centers, and institutes, issues relating to technology transfer (patenting and licensing), and research-related committees such as Institutional Review Boards (IRBs) for human subjects research and institutional animal care and use committees.

Other vice presidents have responsibility for other areas that may affect the life of a faculty scientist directly or indirectly. These include the following:

\* Vice president for information technology. This individual oversees the university's computer facilities and telephone systems.

\* Vice president for health sciences. This individual is responsible for the university's health-related institutions, including the medical center and the other health professional schools. (See "Organization of a 'Typical' Academic Health Center," page 30.)

\* Vice president for student affairs. This individual oversees dormitories, recreational facilities, and other necessities of student life and is concerned with issues of student well-being.

\* Vice president for development. This individual manages fund-raising, alumni networks, and university relations.

### School-or College-Level Responsibility

\* Dean. All department chair report to the dean, who is responsible for the administration of a school or college. A university may have several schools or colleges. Each college may also have an associate or assistant dean or both.

\* Department chair. Each college is likely to have several departments, and in the sciences, separate scientific programs within each department. The dean typically appoints the department chair, with input from the tenured faculty, for a limited time period. Within that time frame, however, the department chair exercises considerable control over the allocation of resources within the department, including space, use of support staff, and purchases of equipment and supplies. The department chair makes teaching assignments and oversees the evaluation of faculty performance. The departmental promotion and tenure committee makes its recommendations to the department chair, who then presents the recommendation to the university-wide promotion and tenure committee.

## **2. The California State University System**

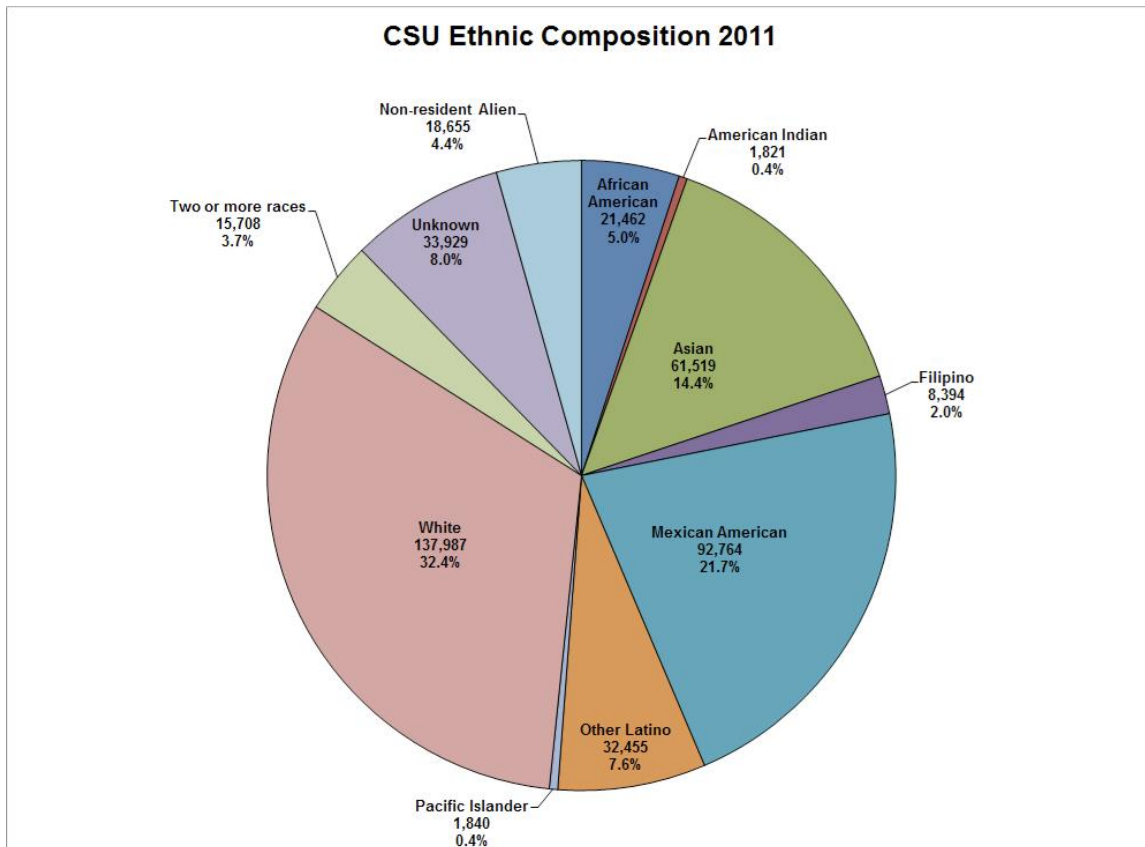
From Wikipedia, the free encyclopedia

The California State University (CSU) is a public university system in the U.S. state of California. It is one of three public higher education systems in the state, the other two being the University of California system and the California Community College system. It is incorporated as The Trustees of the California State University. The California State University system headquarters are at 401 Golden Shore in downtown Long Beach.[1]

The CSU system is composed of 23 campuses and has over 400,000 students supported by 47,000 faculty members and staff.[2] It is the largest senior system of higher education in the United States.[3]

CSU prepares about 60% of the teachers in the state, 40% of the engineering graduates, and more graduates in business, agriculture, communications, health, education and public administration than all other California universities and colleges combined. Altogether, about half the bachelor's degrees and a third of the master's degrees awarded annually in California are from the CSU.

Since 1961 nearly 2.5 million alumni have received a bachelor's, master's or doctoral degree from the university system. CSU offers more than 1,800 degree programs in some 240 subject areas.



### Differences between the CSU and UC systems

Both university systems are California publicly funded higher education institutions. Despite having fewer students, some individual UC campuses, as a result of their research emphasis and medical centers, have larger budgets than the entire CSU system. CSU's Chancellor, Dr Charles B Reed, pointed out when delivering his Pullias Lecture at USC, that California was big enough to afford two world-class systems of public higher education, one that supports research (UC) and one that supports teaching (CSU). However, student per capita spending is stretched far thinner at the CSU, and the lack of a research mission or independent doctoral programs under the California Master Plan leads to a perceived lack of prestige among some academics.[4][5] For many of the CSU system's early formative years, the more powerful UC system was able to delay or prevent the CSU campuses from gaining the right to grant bachelor's degrees, then later master's degrees and now doctorates in most fields. Thus while similar campuses in other states (e.g., Arizona State University) eventually grew from normal schools into research-oriented state universities, the UC system's powerful research university monopoly has successfully prevented the CSU from experiencing a similar development. Librarian Emeritus Kevin Starr has described the CSU as "in so many ways the Rodney Dangerfield of public higher education."[6]

According to the California Master Plan for Higher Education (1960), both university systems may confer Bachelors or Master's degrees as well as professional certifications,

however only the University of California has the authority to issue Ph.D degrees (Doctor of Philosophy) and professional degrees in the fields of law, medicine, veterinary, and dentistry. As a result of recent legislation (SB 724 and AB 2382), the California State University may now offer the Ed.D (also known as the Doctor of Education or "education doctorate degree") and DPT (Doctor of Physical Therapy) degrees to its graduate students. Additionally, the California State University (CSU) offers Ph.D degrees and some professional doctorates (for instance, audiology, Au.D) as a "joint degree" in combination with other institutions of higher education, including "joint degrees" with the University of California (UC) and accredited private universities. This is why, for instance, San Diego State can qualify as a "Research University with high research activity"[7] by offering 16 doctoral degrees.

There are 23 CSU campuses and 10 UC campuses representing 414,000 and 191,000 students respectively. The cost of CSU tuition is approximately half that of UC. Thus, the CSU system has been referred to by former California State University authorities as "The People's University." [8]

CSU and UC use the terms "president" and "chancellor" internally in exactly opposite ways: At CSU, the campuses are headed by "presidents" who report to a systemwide "chancellor"; but at UC, they are headed by "chancellors" who report to a systemwide "president".

CSU has traditionally been more accommodating to the older student than UC, by offering more degree programs in the evenings and, more recently, online. In addition, CSU schools, especially in more urban areas, have traditionally catered to the commuter, enrolling most of its students from the surrounding area. This has changed as CSU schools increase enrollment and some of the more prestigious urban campuses attract a wider demographic.[9]

[edit]Admission standards

Historically the requirements for admission to the CSU have been less stringent than the UC system. The CSU attempts to accept applicants from the top one-third (1/3) of California high school graduates. In contrast, the UC attempts to accept the top one-eighth (1/8). In an effort to maintain a 60/40 ratio of upper division students to lower division students and to encourage students to attend a California community college first, both university systems give priority to California community college transfer students.

## References

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### **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. <sup>[1]</sup><sub>[SEP]</sub> 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  $\text{Na}^+$  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.