



## Ask Professor Sarah Bellum

*Professor Sarah Bellum answers your questions on navigating the often-uncharted waters of early career development. Professor Bellum is communicated by Patricia L. Clark, founder of the Early Careers Committee and a member of Council. Do you have a question for Professor Bellum? Send it to [sarahbellum@biophysics.org](mailto:sarahbellum@biophysics.org). Your privacy is assured!*

### Getting the Research Rocks In

**Q:** I am a brand-new, tenure-track faculty member at a large research university. I have this first fall semester off from teaching so that I can set up my laboratory. After almost two months here, I thought I would have experiments up and running. But I don't, in part because it is taking longer than I expected for my equipment and supplies to arrive. During this delay, I have been planning out the graduate special topics course that I will teach next semester. I want to succeed as a teacher, and I know this course will provide me with a valuable opportunity to recruit graduate students to my lab. But frankly, the thought of lecturing for three hours a week for fourteen weeks straight, even in my area of expertise, is terrifying. Is this normal? And is it appropriate to get a jumpstart on my syllabus and lectures while waiting for my lab to get set up?

**A:** The transition into a tenure track faculty position will probably be the largest and most challenging transition of your professional career. You must learn to find your way through a maze of new procedures, forms, buildings and people, while simultaneously developing your capacity to manage an increasingly complex workload through a daily schedule that is more fractured and interrupted than ever before. Going forward, your opportunities to focus single-mindedly on your research, as you were probably accustomed to doing throughout your postdoctoral appointment, will be rare (a sabbatical, for example). Instead, getting everything done will require bal-

ancing competing demands on your time, with the first tension arising between the time you devote to research versus teaching. Hopefully, this will be your only major source of tension until tenure time. Most departments, recognizing that setting up a research program is both time consuming and essential for the success of new faculty, try very hard to protect assistant professors from major service responsibilities until after tenure. This is a very important point to keep in mind: your department wants you to succeed, and is willing to devote resources to protect your time and improve your chances for research success. But it expects you to figure out how to manage your time and get the work done.

Simply put, getting your research program up and running will be the single hardest and most time consuming thing that you will do as an assistant professor. This might not be initially obvious, because you have already accumulated years of experience working in a laboratory setting. But do not be deceived: while you might already excel at managing your own research progress, you have far less (perhaps zero) experience supervising the work of others. You might have experience writing fellowship proposals, but you probably have no experience putting together a research budget for a grant proposal. You might have experience drafting manuscripts, but you might find that a harsh review or manuscript rejection takes ego crushing to a whole new level now that you are out from under the protective wing of your postdoctoral advisor. Running a lab is a huge, multivariable job with competing priorities, stakeholders, working styles, deadlines, and short-, medium- and long-term objectives. It is not enough to keep your eye on the ball: running a lab means keeping your eyes on seven or eight (or more!) balls while simultaneously juggling them in the air. The size and complexity of this project will exhaust you. And the long time scales of some of the objectives, such as writing an NIH or NSF

proposal, make it very hard to track your progress on a day-to-day basis unless you intentionally break these big jobs down into smaller objectives.

In comparison to getting the lab up and running, teaching will be far easier, even if you initially feel far more like a fish out of water in the classroom than in the lab. Of course, “easier” is not equal to “easy.” No matter how smart you are, it will take time to learn how to convert your knowledge into an effective lecturing style that connects with students and facilitates learning. I have heard that there are many parallels between teaching and stand-up comedy, except that no comedian in their right mind would ever agree to delivering 42 completely different stand-up routines over a 14-week semester, each at 8:30 AM, on a topic that many undergraduates feared or hated in high school. For these very valid reasons, many new faculty find the idea of running out of things to say while teaching much more terrifying than getting a slow start in research. After all, to make a misstep with teaching is to risk humiliating yourself in front of an audience, whereas it is likely only you will notice a misstep made in your research. Additionally, with teaching the feedback is gratifyingly immediate—the same is unfortunately not true for experiment planning, grant proposal writing or manuscript submissions.

Precisely because teaching can be terrifying and provides immediate feedback, it is all too easy to fall into a trap of spending much more time than necessary preparing to teach. If you are not careful to set limits on the amount of time that you devote to teaching, it can undermine the development of your research program and, paradoxically, your development as a teacher. For example, studies have shown that most new faculty tend to pack too much material into a lecture in order to avoid the terror of running out of things to say [1]. In contrast, exemplary new teachers avoid overstuffed lectures and simultaneously reserve more time for their research. Fortunately, your colleagues can help with your development as a teacher: ask to see examples of syllabi and class notes for similarly structured courses, ask for teaching advice from your colleagues who have won teaching awards, and take advantage of semi-

nars and workshops that your university offers for new teachers.

In contrast, neither your colleagues nor your university can help you set up your first experiments, or outline your first grant proposal. Because of this, the single most important piece of advice I can give you is to put your research first, before teaching. Put research first in your heart, in your brain, and on every to-do list, productivity enhancement exercise and calendar-planning activity that you carry out. If you are not already, get familiar with *Stephen Covey's* concept of ‘big rocks’ [2] – research is your biggest rock, and you need to give it your highest priority every day.

Start by getting your first experiment up and running as soon as possible. Your department has provided you with a teaching leave specifically for this purpose. Unfortunately, everyone experiences delays with the ordering, installation and optimization of equipment and reagents. See if you can borrow a colleague’s equipment or a missing reagent, or visit a nearby university that might have whatever you are missing. Again, recall that your colleagues want to help you succeed – this includes loaning you bench space while your own lab renovations wrap up. Find a way to keep moving forward. The completion of your first experiment will be a powerful psychological step, even if it was carried out in a neighboring lab and even if it merely replicates an experiment that you already previously performed as a postdoc. From a practical perspective, actually setting up and running the experiment will likely reveal shortcomings—hopefully minor—in your lab space, equipment and/or supplies that you can start resolving, sooner rather than later. Of course, don’t just stop there: move on as quickly as possible to experiments two and three, and that first grant proposal—Good Luck!

## References

- [1] Boice, R. (2000) *Advice for New Faculty Members*. Needham Heights, MA: Allyn & Bacon.
- [2] Covey, S.R. (1989) *The 7 Habits of Highly Effective People*. New York, NY: Simon and Schuster.