

## How to run a new basic life science lab without HHMI Funding

As a new member of the faculty, you arrive with several assets: wonderful recent results and papers, which were key to your selection here, fresh energy and ideas, substantial set-up funds, and an agreed-upon period of reduced teaching and administrative service expectations to allow you to get your research up and running. What follows are some suggestions about how to build a successful program here. These are the personal opinions of Bill Wickner, Jay Dunlap, and Bernard Trumpower, not "official policy."

You're the best postdoc you'll have for many years; stay at the bench. Start each day by diving into your experiment, and let nothing interfere with its completion. If you are as productive yourself during your first years as you were as a postdoc, you will get funded, attract students, and get promoted.

Grow slowly and selectively. This advice has a fiscal, and a personnel, side. Fiscally, you're wise to ask your neighbors if your nascent group can use their heavy equipment and await your extramural funding to buy your own. Only set up your lab for a small group of yourself, a research associate, and a grad student; 1 frig, 1 freezer, 1 ultracold, a lab centrifuge, a few water baths/incubators, starting supplies, glassware, etc. You'll discover that this "small" set-up is still unbelievably expensive. Personnel can be an asset or a detriment. Be friendly to all, but be businesslike. Students may not be fully mature, or realize that they're being paid for full-time work. Discuss this with them, and let them know that hard work, daily discussion of experiments, and critical evaluations will be the norm.

Hire a research associate who is a stable person and not too proud to help you to be more productive. Many research associate candidates are just seeking a 9-5 job, want to be independent in their research, or are marking time before applying to professional graduate school. Look for somebody who is already in love with working in labs-- a "lab rat" like you!--but who doesn't want to run a lab and write grants. Do they mind working in the trenches, or doing parts of experiments to support you (for the P.I. to do an experiment at the bench each day, it may help if the research associate will grow cells, run gels, or otherwise do routine parts of the analysis)? When interviewing candidates, ask them "Given that the  $M_r$  of Tris base is 121.14, how would you make 1L of a 1M TrisCl, pH 7.4 buffer?". Those who a) struggle to recall the Henderson/Hasselbach equation, b) confidently get it wrong, c) say "I don't know but I'd learn" or, above all, d) are insulted that you'd ask them such a demeaning question are NOT the one you want! Seek somebody whose dream is to be the heart and soul of a highly successful lab, working for an excellent PI.

Submit grants early. If you submit within 6 months of the postdoc/faculty transition, study sections will accept your [presumably excellent] postdoctoral work as your preliminary results [if you're continuing in the same field]. After a year, they'll want to see an accepted manuscript from your new lab.

Compartmentalize and plan your time. This way, you won't be distracted by experiments when you write or by writing when you do experiments. Work and play hard! Five 12-hour days in the lab, allowing an hour or two of each for seminars and collegial interactions and the rest for experiments and interactions with those in your lab. Evenings and weekends, read a paper each evening, have 2 hrs set aside for writing grants or papers, and get some exercise, visit friends, and read a novel.

Balance novel and risky experiments with meat & potatoes. Seek projects which will yield solid characterization of a system while creating the opportunity for imaginative experiments. Above all, seek constructive criticism from your colleagues, and your "betters" in the field.

Attend just one meeting a year. Ideally, the meeting should be at the level of a Gordon Conference, and (like Gordon Conferences) allow you to meet many scientists who will serve on your study section, and to present your poster to them. Attending many meetings just consumes too much time and money.