CHAPTER 2

GETTIN' STARTED

"Congratulations and good luck," everyone says as you leave your postdoctoral position behind and head out to be a big-time Principal Investigator (PI). You pack your bags; you show up. Now what do you do? Research of course! Most academic positions have a little more in the job description than just the "science," and therefore you need to be able to decide how you will tackle the academic environment too. This chapter will address issues that will arise during the first three to six months of starting your new position, including:

- When to start
- Setting up your lab
- Setting up your office
- Getting ready for your role as an academician
- Time Management

WHEN TO START

It seems as though you should start work as soon as possible after you get the job offer. However, this may not give you the most flexibility in managing your career. For example, in some institutions, the promotion and tenure clock starts on a given date, such that all faculty hired before or on September 1 will start the tenure clock on that date. In this type of institution, if you start on September 2nd or later, then your first year doesn't begin until the ***following*** September 1. This gains you an additional year on the tenure cycle! This issue may increase in importance to you as funding becomes tighter. If your position has significant teaching and/or service responsibilities, a longer promotion time line may make the difference for success. You should discuss this issue with your new departmental chair prior to agreeing to a start date.

If your institution has a flexible promotion and tenure clock (that is, the tenure clock starts when you start the job), your choice of start date could be influenced by your probable teaching load and access to incoming graduate students. Coming in the middle of a semester may exempt you from having to teach in a course and, therefore, buy you more time to set up your lab. Arriving in the fall semester has the advantage of allowing you to be introduced as the NKOTB (New Kid On The Block) to the fresh crop of prospective graduate students that you might be aching to recruit into your laboratory. If you arrive in April or May, the chances of getting a new graduate student for that year will be reduced because the incoming class of students may have already settled into other labs.

▪ Because in many institutions you can come up for promotion or tenure early, having an extra year or even a few months may make the difference in your promotion/tenure decision if you need it. The key is to get as much time as possible so that your tenure package can be as strong as it can be.

A major consideration may be where you are in completing a particular project. If your research is cruising along and the data are being generated quickly, you may decide that moving now will result in a six-month delay before you can complete the project. But if you stay where you are, it will take only a month. Staying for another month or two could also provide you with the critical preliminary data for your new grant application. However, two months may lead to three and three to four ... Before you know it, you've stayed six months and you marched up a dead end or the results weren't what you thought they would be.

To make this decision, consider the difficulty and time required in setting up the specific assays that you perform, the position of your competitors on this project, and how much effort you will be able to put into getting your first experiment completed in your new lab. If you can order equipment and supplies before you arrive, this may save you some down time. Remember, you have to arrange it all yourself.

Of course, family issues may need to take precedence. For example, if you have school-aged children, you may want to begin your new post in time to allow them to get settled in their schools. You may therefore consider moving in August and starting on September 2nd, if the tenure clock rule is a concern. The worksheet in **Appendix 2-1** is designed to help you coordinate starting date issues, as well as other "setup" issues that are discussed below.

Now, wasn't that easy?

SETTING UP YOUR LAB

"Congratulations and welcome," everyone says as your arrive at your new position. The conversation will also include, "Where are you living? Did you buy or rent? How long is your commute, and so on, and so on ...?" After all this is said, the most likely next question will be, "So, whatcha gonna work on?" Certainly, you answered this question in your interviews and are ready with your 54-character title for your new NIH RO1. This is without a doubt Priority One, and if you haven't planned out your first grant, refer to *Chapter 3* to read about the grants process. If you already have a grant, congratulations, you are ready to roll.

Space

Wide open spaces! That's what all new labs look like. They have clean walls, floors, and benches, with only a few dust balls underneath them. New labs also come with a small echo that will be reduced to a hum as the space gets filled with people and the equipment begins to churn. Someone probably said, "Oh, you can get at least 8 people in this 800 sq. ft. space." "Yep," you replied. Maybe you could get them in — they just would have to work in three shifts. Therefore, you need to maximize the use of your space. This statement is true whether you have your own dedicated space or you share space with a group of investigators.

Different types of science obviously require different setups and space utilization plans. Unless you have the opportunity to design your own space, your lab will come with permanently fixed items (e.g., benches, hoods, sinks, etc.) and movable items (e.g., chemical storage shelves, tables, desks, file cabinets, and all your large equipment). The general design parameters of your lab are likely to be similar to others in the department or building that you are in. Before you place a piece of equipment in your new space, look around at other labs in the department, because you may find that someone else has done a lot of thinking about where to put things. They also may have thought very hard and messed it up, too. Now is your chance to observe, ask questions, and learn. It will also flatter people if you ask to see how they arranged their labs, and a certain amount of flattery of your colleagues can be good.

Now that you have looked around and asked questions, you need to make some decisions. Get a floor plan of your lab. This will give you the positioning of the non-movable objects, like benches and hoods, as well as the physical proportions of the space. If you know the dimensions of the equipment that you will purchase, make a reduced-scaled footprint of the equipment out of sticky notes. You should do this with desks, file cabinets, movable shelving, etc. Now you can move things around on paper without throwing your back out by moving the actual equipment. (You will get opportunities to do that later.) If a piece of equipment "just fits" according to the scale of the floor plan you will still need to measure the space yourself, because construction of laboratories and buildings is a qualitative science, not quantitative. Ideally, equipment that will be used for a single assay or preparation should be as close in proximity to each other as possible. For example, placing a centrifuge near a sink so that supernatants can be easily decanted would make using the instrument efficient. Noisy equipment should be in a separate room from the main lab, if this is an option. No one likes the sonicator next to his desk.

There are two common physical layouts and several general strategies to organize the space. The two physical layouts can be grouped into labs with "islands" and those with "peninsulas." Island labs have center benches (the island) and benches against some of the walls. This provides very flexible space that can be used by most scientists. The major disadvantage is that student/staff desks are not adjacent to their workspaces. Peninsula labs have rows of benches that are perpendicular to a wall with a desk juxtaposed at one end. The advantage to this arrangement is that space for single individuals is predetermined and typically larger per person than "island" space. The disadvantage is that this arrangement may make it more difficult to double up your personnel on a peninsula because one person will not have a desk. This could prove to be a problem if your lab funds and the number of personnel grow faster than your space. But that would be a good problem to have.

Lab design can affect your space organizational choices. While there are lots of ways to organize your space, two modes are common: assay and individual. In the assay mode, your lab is organized around specific assays/data collection equipment or workstations. In this mode, you anticipate that everyone will share most of the space and that assigned individual space will be minimal. Here the center island arrangement works well. In the individual mode, lab benches are assigned to each lab member and the assigned space is typically not shared. This setup presumes that each individual will have most of the equipment that they need to carry out their work. This is a common setup for labs that use the tools of molecular biology as their predominant assays. This mode is best suited to the peninsula design. If you choose the individual mode, you may consider restricting the use of radioisotopes and other hazardous reagents to one area of the lab. This will help restrict contamination problems when your new graduate student with the curly red hair splashes radioactive phosphate on the floor. Naturally, combining the two modes may work best if your lab has a limited number of routine assays.

Purchasing Equipment

You only get to do this on a very large scale once (unless you change jobs), so make a list and check it twice. Salespeople like the NKOTB better than anyone on the planet. The commissions from your extensive equipment orders stand to earn them a down payment on a beach house. ***They will negotiate!*** If you read Chapter 1, you should have negotiated with your chair to get enough money to purchase the equipment that you need to set up your lab. Now you have to make the decisions about the quality of the equipment: will you order the Rolls Royce, the BMW, or the VW bug? Unfortunately, *Consumer Reports* does not evaluate scientific equipment. There are, however, Internet news groups that focus on various scientific technologies that can provide you with feedback about reliability and ease of use. It is also likely that you have had experience with one brand or another while you were a postdoc. In deciding which to buy, you should consider the following list:

- How long do you plan to use the instrument?

> The longer you anticipate using this equipment, the more you may want to invest in a brand that has highly reliable components.

- Will the instrument be the mainstay of a lab assay?

> As with the above, if the instrument will get heavy use, the one with the sturdiest parts is likely to last longer.

- How quickly is the technology developing?

> If the technology is changing rapidly, you may have to replace the instrument in a few years, so a cheaper instrument may be better now.

- Do you really "need" the superfluous features in the more expensive instrument that are not available in the cheaper version?

> Cheaper instruments may not have all the bells and whistles. Sometimes the whistles sound good, other times they are never heard.

- Have other labs in the department chosen one brand of instrument over another?

> The feedback of the owners will be valuable. Also, if the equipment has accessories, this may allow you to share them with your neighbor (e.g., centrifuge rotors) if he has the same basic instrument.

- Does the local service available for different instruments vary?

> Say that everyone in your department has a DuPlex Inc. GammaZoid. The instrument requires regular calibration. The DuPlex service person has an office in town. Such factors may lead you to buy the DuPlex. However, you may discover that the TriPlex Inc. instrument does not require regular service, has some added features, costs less, but lacks the name recognition of DuPlex. In this case, choosing the TriPlex instrument maybe the way to go.

> - The point is, consider the servicing of your new equipment before you buy it.

- Footprint?

> If many of the factors noted above are equal, fitting the instrument into your space may be a primary determinant.

- Price?

> Buying the DuPlex may result in your not being able to buy additional equipment with your start-up funding. Thus, choosing the TriPlex may allow you to get more "bangs-for-your-bucks."

- Does the more expensive instrument look "cooler" or have more buttons?

> This is self-explanatory.

If you are still undecided after answering these questions and if the equipment is small enough, vendors will often let you test-drive a demo instrument in your lab for a few weeks. If the equipment is not portable and you have never used it in the past, they may fly you to a lab that has one for you to try. This is a great way to decide if the Triplex GammaZoid will do or if you really need Duplex's model.

Now that you have a headache from thinking about each of these questions, you should be able to make an informed decision. If your objective is to hurry up and equip your lab without thinking through these variables (that is, avoiding headaches), then you will probably regret it later. No kidding.

The worksheet in **Appendix 2-2** is designed to help you list and sort through your equipment purchases.

Purchasing Supplies

With the exception of salaries, ongoing supplies expense will be the most costly part of your operation. Using your established budget (see *Chapter 4, Managing Your Money*), buy the items that you need now. During your initial start-up phase, the salespeople may offer you big discounts on items if you spend big $$$$ with them. It is OK to play different general supply companies against each other. They live for the competition. The key here is to get what you need. While salespeople may often show up at the wrong time to talk to you, you will find that being consistently courteous to them may get you a good deal or two now and throughout your career. The more you order and the longer you buy from them, the better the deals you will get. To avoid having salespeople interrupt you while writing a grant application or doing experiments, ask them to call ahead to set up appointments.

The worksheet in **Appendix 2-3** is designed to help you organize your initial supply orders.

SETTING UP YOUR OFFICE

Small, confining space! In fact, it will seem very small, and the view, if you are lucky enough to have a window, may not be what you expected. Sorry, this situation will not change for a while. The key now is to make it livable and workable. As an academic scientist, you will spend a lot of time in this space. Good lighting, comfortable chairs, and peace are key issues. If you have the decision over the selection of office furniture, look at what other faculty have (sounds familiar, doesn't it?). Buy a good chair. This is where you will place your most important asset (you). The furniture that you buy will be with you for a long time, so choose wisely.

There are some key items that you need to consider: desk, chairs, table, guest chair or couch, computer system, file cabinet, book shelves, answering machine/voicemail service, coffee maker, and small refrigerator. It's impossible to get all of these items into a

100 sq ft office, so don't try. Couches, chairs, tables, and desks all fall into the general category of furniture that you will use on a daily basis to meet with people, discuss science, read, and do your writing. If you have the space, a small table with a few chairs can provide a comfortable setting to discuss data with your students and visitors. A couch, besides being useful for napping, also provides a relaxed environment to discuss your work with visitors.

Now that we scientists do much of our own secretarial work, desks come in numerous configurations to allow computers to be used. Find one that fits your body and has the drawers and accessories that you need. You will need to have a keyboard at the right height for computer use, as wrist injuries from poor ergonomics are not uncommon. This is very important, so if there are examples around to try out, take them for a test drive. Make sure that your chair is adjustable so that you are at a comfortable height at your desk/keyboard.

The Office Computer Is Your Friend

This plastic contraption will serve as the primary instrument of your creativity, brilliance, frustration (those angry letters that you never send), and communications with the outside world. The simplest advice is to get the *best* you can afford. However, you need to remember that computers, like 1970s American cars, are designed to run for 3–4 years. At that point, the software you use will require more space and memory than your computer has and it will be time to upgrade — everything. This being said, you still should not buy the cheapest model. You will need to decide between the two major platforms, Mac vs. PC. There are arguments for both, and people have very strong opinions about this topic. You may have a preference as well. The important issue here is to buy the right configuration. Get enough memory so that you can use all the programs that you need efficiently. If your research requires image processing, you will need more RAM than if you just use graphs. These days, hard drives are huge and it's hard to imagine that your data can fill 200 GB of space to capacity. (Of course, this is also what everyone thought in 1988 when hard drives were 10 Mb.) Flat panel monitors are recommended to save on desk space. We also recommend that you buy as large a monitor as you can afford. The ability to have multiple documents open at a time will come in very handy when writing grants and manuscripts.

You will also need some sort of backup system. This will come into play the week that your grant is due and your computer has completely crashed, and you are looking at the earliest version of your grant from 10 drafts back. You may think that this does not happen, but it happens to almost everyone. Computers "know" when you are under the gun, and they revolt at the most critical time. Writable CD/DVD drives present an inexpensive, stable backup system where most of your important documents can be stored. Flash drives and other removable devices are great for routine backups but are not permanent and the data on these can be lost. Fancy tape drive devices or simple external drives can be programmed to backup all your lab computers on a daily basis. Such systems provide the greatest safety net for your work and data and require little effort to maintain once they are set up. Some departments provide a backup service to their server. While this is great, faculty often become complacent about their backups, only to discover that the drive or tape was full for the last 3 weeks before their computer crashed and burned.

- The key here is to make sure that YOU can and DO back up your work.

Computers for Your Staff

You will need at least one or two computers in the lab. It will need to have Internet access for database searches, etc. Depending on your type of research, you may need many computers. Unless the data generated by your staff require serious number crunching or image processing, you may be able to save some money in this area. A slower processor, a smaller screen, or a little less RAM will not hinder the progress of your laboratory. If all of your data are generated through the use of the computer, this is where you should put your money. The larger your staff, the more computers you will need.

Scanners and digital cameras coupled with a photographic quality printer have for many supplanted the use of professional photographic services for creating quality figures for publication, posters, and presentations. On-line manuscript submissions for most journals have all but eliminated the need for high quality photographic systems for routine work. However, if your work requires hard-copy photographs, you will need to make sure that you have access to a photographic quality printer. Photographic quality printers are costly items and are easily shared among a large number of laboratories. If your department does not have one, you should be able to find one somewhere on campus or convince the rest of the faculty that the department needs one so your chair will buy it with departmental funds.

▪ In setting up your new lab and office, use common sense to make decisions about organization and what to buy. However, don't dwell on the issues for long. Make your decisions and move forward. The goal is to get your lab and office operational.

GETTING READY FOR YOUR ROLE AS AN ACADEMICIAN

In addition to your lab and office, you will need to get ready to begin your life as a member of the faculty of your institution. Faculty are the heart and soul of a university — at least, that's what we faculty think. In addition to research, there are other faculty duties/responsibilities: teaching, service, and administration. As a beginning faculty member, your major responsibility aside from your research is likely to be your teaching. If your position has a service component, then this will also be a major responsibility. Few junior faculty have large administrative burdens, so this is a minor concern, at least at the beginning of your career.

Because all of these duties will distract you from your research, it is important to have a plan. The plan should start with the university calendar. Since the beginning and ending of classes are important events in the university, you should mark these dates on YOUR calendar. These dates are significant because they determine when classes will be taught, when the students will be around (undergraduate, medical), when the seminar programs will be, and typically when there are faculty meetings. Thus, the majority of the time between classes, like the summer break, can be almost completely devoted to your research.

Teaching

Hopefully, you arranged to have a time lag before you have to prepare your lectures and teach your classes. If this is the case, you should find out what classes you will be expected to teach when the time comes. This will achieve two things. First, it will (hopefully) avoid the last minute issue of: "Oh, why don't you also teach Dr. Brillodooz's lectures?" The second point is that it will give you time to think about your lectures, and, if other faculty members are giving them this year, you will have an opportunity to sit in on the lectures and find out what they teach. This latter point will save you enormous time next year when you take on the lecture topic yourself. Did we say enormous time? Yes we did!

If you have to teach right away, you should refer to *Chapter 7* of this book to get started planning your lectures.

Service

"Great! Now we have someone new to do all the work." Service, as will be discussed in *Chapter 9*, has many aspects and definitions. Service responsibilities can include clinical service for physician scientists, running a diagnostic or core laboratory, committee assignments, student advisement, and administration. As is the case with teaching, you may not be asked to do anything right away. If this is the case, your idleness can give you opportunities to learn. Look at what others in your department are doing to help it run. Some service jobs may be more in line with your personality, skills, and ambitions. These are the jobs that you may want to do when you are more established. Find out about them. "Showing an interest" is the best way to be considered the heir apparent for a service assignment you may want. You will eventually be asked to do something, so be alert to the jobs that exist. It's better to do something you want to do than to do something you don't, and you could get stuck with the latter.

If your position has a service requirement, such as seeing patients, running a core facility, coordinating admissions, etc., be sure you know what is expected on Day One or preferably when you negotiate your position. These issues can include the number of days/weeks/months that you must do this service. Be sure that your chair, and your colleagues have the same idea that you do about the time you must spend in the service. If the service occurs once a year (e.g., admissions) find out the timetable.

- If you will be responsible for a core lab or a regular service facility, establish rules for your time, what you will do, and what you won't.
- If consultation with the users of the core or service is necessary, establish regular consultation times each week. This may be difficult at first, but once it is in place most people will go by your schedule.

Most faculty spend a good deal of their time serving on a variety of committees. Knowing what is expected of each committee is important to how you will participate and how much time you will need to devote to its success. *Chapter 9* will discuss ways to shorten the time of committee meetings and achieve your desired outcome. While biomedical research scientists rarely get promoted or earn tenure based on their committee work and institutional service, it is expected that you perform these aspects of your job well. Time management is the key to being able to allocate time for service as well as for your research.

TIME MANAGEMENT

As you prepare your "to-do" list, you should attempt to a establish a set of time management rules. A key to time management is to avoid duplicating your effort. This will give you more time for everything else. For example, you receive a note from your chair to send your CV to the head of another department for a joint appointment there. If you now put the note on a stack of to-do items, you will read it several times before you act upon it. But, if you print and send your CV (which you created in *Chapter 1*) and give it to the chair, you can throw the note away and the task is complete. We suggest the latter. Prioritize your tasks. Tasks can be classified into four general categories that should help you manage your time:

- Imperative and vital
- Not so imperative but vital
- Imperative and not so vital
- Neither imperative nor vital

Effective time management dictates that you deal with all tasks that are imperative first, followed by those that are vital next. Vital in this case refers to your career. Tasks that are not imperative or immediately vital should be performed as a break in the routine and to relax. Here are some examples.

Imperative and Vital — All items that impact your career/life that have deadlines! Gotta do and Gotta do now!

- Your NIH grant Program Director needs you to email her your Other Support pages by this afternoon so that she can try to squeeze your grant into this year's pay cycle.
- Your grant application is due today.
- An abstract to a meeting is due.
- Your completed tenure package is required by your chair.
- Return call to your spouse about dinner.
- All items for which the deadline was yesterday!

Vital but not Imperative — Most lab management, teaching, and service. Gotta do, but it can wait a little.

- Going over experiments and data with lab staff.
- Preparing your teaching assignments and teaching class.
- Writing your research papers (this can become imperative depending on your competition in the field).
- Filling out the required paperwork so that your lab can use radioactivity or work with animals (unless there is a deadline for this).
- Grading papers/exams (unless they are overdue!).
- Keeping up with the literature (that is, reading).
- Discussing progress of your students with other faculty members.

Imperative but not necessarily vital — This is a difficult category to describe due to the relative value one places on tasks. These are items with a deadline that do not impact your career immediately. Many non-science life issues fall into the imperative category. Sometimes items that were neither imperative nor vital end up becoming imperative and vital as the deadline for their completion looms closer. Gotta do it sometime, best to get it done now instead of waiting until tomorrow.

- Reviewing a manuscript for a journal.
- Reviewing a colleague's manuscript or grant application.
- Service responsibilities (not life threatening) that you have put off until the deadline.
- Settling a disagreement between two lab members over the selection of the radio station (we will discuss this type of problem in the *Chapter 4*).
- Arranging to talk with the salesperson about a new piece of equipment.
- Getting a piece of equipment fixed that you will need soon, but could do without today.
- Defrosting the lab freezer because you ran out of room.

Not Imperative and not immediately vital — All other tasks! Tomorrow!

- Getting the menu ready for next month's departmental retreat. Items like this one will move up in importance as you put off their completion. It's best that such items never become imperative and vital.
- Throwing a party for your lab.
- Talking with your fellow faculty members about Atlanta Braves baseball.
- Hanging pictures in your office.
- Ordering your season tickets for the Braves.
- Finishing the second edition of this book.

A more detailed discussion of time management issues is provided in our *Next Wave* article ***Where'd My Day Go!*** (in the *The Extras Section*).

- You now have made a large number of decisions about how to set up your lab, your office, and career. The most important point is to have reasons for your actions. If you get stuck on an issue, ask your colleagues for their advice. Before you know it, your lab and office will feel like home sweet home.

Springer

http://www.springer.com/978-0-387-32176-9

Academic Scientists at Work
Boss, J.; Eckert, S.
2006, XVIII, 290 p. With online files/update., Softcover
ISBN: 978-0-387-32176-9