Careers in Academic Administration

Lydia Villa-Komaroff

Intersections SBD, Chestnut Hill, Massachusetts 02467

Correspondence: lydia@villakomaroff.com

Academic administration can be an extension of an academic career at the bench or it can run parallel to a career of discovery. To be an academic administrator at the executive level in a college or university generally requires advancement through the academic ranks to the professorial level. These positions include department chair, dean of a college, head of a center or institute, provost, senior research officer, and university or college president. Positions that can begin immediately after attaining a PhD or after a postdoctoral position include some assistant dean roles and positions in technology transfer, grants management, and laboratory management, among many others. Many of the skills developed during the pursuit of an advanced degree in the life sciences are directly applicable to these jobs. All require problem solving, critical thinking, collaboration, and the ability to communicate clearly.

There are between 3900 and 4700 accredited postsecondary institutions in the United States (<http://ope.ed.gov/accreditation>; <http://carnegieclassifications.iu.edu>). These institutions are classified into seven broad categories as follows:

1. Doctoral universities award at least 20 research doctoral degrees excluding professional degrees such as JD, MD, or PharmD. They are subdivided into three groups indicating the level of research activity.
2. Master's colleges and universities generally award at least 50 master's degrees and fewer than 20 doctoral degrees. They are subdivided into three groups based on the number of master's degrees awarded.
3. Baccalaureate colleges are institutions where baccalaureate degrees represent at least 50% of all degrees and where fewer than 50 master's degrees or 20 doctoral degrees are awarded.

4. Baccalaureate/Associate's Colleges include four-year colleges that confer more than 50% of degrees at the associate's degree level.
5. Associate's Colleges are institutions where the highest degree is an associate's degree and are often referred to as community colleges.
6. Special-focus institutions award most of their degrees a single field or set of related fields. These institutions are subdivided into nine categories based on disciplinary mix and student type.
7. Tribal colleges are members of the American Indian Higher Education Consortium and are not included in the other categories.

The number and variety of academic institutions provide a broad array of positions in academic administration. Academic administration provides a career track in which a scientist can enable the work of other scientists, pro-

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L. Villa-Komaroff

vide direction in the development of training programs, guide programs within a university or college setting, or run an institution. Life scientists are increasingly found in leadership positions in all kinds of academic institutions. Training in life sciences provides a strong background for evaluating some of the most exciting science in an institution and enabling its transfer to the business world or for having a key role in science training. Skills learned as a scientist are strong preparation for problem solving in any type of academic institution. Because most of the academic institutions in the United States responsible for the education and recruitment of scientists do not revolve around research, the presence of well-trained scientists in these institutions is a prerequisite for inspiring and training the next generation of research scientists.

JOBS

Jobs in academic administration include executive and nonexecutive positions. Executive positions include department chair, dean, senior research officer, provost, and president. These jobs generally require advancement through the academic ranks to a tenured position. Although some nonexecutive jobs involve laboratory work, many do not. Nonexecutive jobs are generally not on the tenure track.

Figure 1 shows the relationship of the component parts of an academic institution. Every component of the institution has jobs in academic administration. Figure 2 shows a generic organization chart for an academic institution. The titles in bold are areas where PhDs in science can be found; however, opportunities may be found in almost all areas of the institution. Every academic institution in the United States has its own unique culture and practices; titles of the executive positions may differ or responsibilities may be consolidated.

Executive Positions

These positions require vision, leadership, interpersonal skills, and the ability to assess and respond to a changing environment. They also require strategic thinking and the ability to build consensus, arbitrate disagreements, and

Figure 1. Components of an academic institution and their relationship to each other. The figure shows the most common organization for a research-intensive school. If there is a medical school, departments may be subdivided into divisions that contain individual laboratories. Small colleges may not have separate schools. Departments are the basic components of a university, and it can be difficult to close existing departments or start new ones. Academic programs or centers are more fluid entities and can be established or closed more readily. These entities often cross departmental and school boundaries. The dual structure of fluid programs and centers imposed on a very stable structure of departments allows an institution the flexibility to respond rapidly to new fields or new opportunities while providing an anchor for faculty affiliation.

deal with inadequate resources (there is never enough money to do everything that needs to be, or could be, done). One important consideration is the desire and ability to showcase the work of others. Many different management styles can be successful in these positions as long as the leader is consistent and honest with faculty and other administrators.

First, we deal with the career track to an executive position in a research university. Figure 3 illustrates some of the pathways that are available. To be successful on this track, you must first focus on a traditional academic career and work your way up to a tenured position. In a research-intensive organization, this requires meeting the institution's criteria for excellence in research as well as satisfactory performance in teaching and service. You can determine your

Figure 2. Organization chart for an academic institution. The chart shown is representative of the central administration of a research-intense university with many schools. The larger the institution, the more likely it is that functions such as grants administration or student affairs will have school-based offices as well as central administration offices. Not every institution has all possible schools. Schools where life scientists may have faculty or administrative roles include arts and sciences, medical, engineering, dental, veterinary, pharmacy, nursing, education, communication (formerly called schools of speech, these have programs in the science of human speech, hearing, and learning), and business. Often, a graduate school oversees all graduate education. The autonomy of schools within an institution also varies. Medical schools, business schools, and other professional schools that may or may not offer undergraduate courses generally have the most autonomy. For medical schools, this is based on the size and complexity of modern medicine. Medical schools are affiliated with hospitals, and the hospitals may be independent of the medical school and the university or may be part of the complex. Independence means that governance and budget of the hospital are separate from the medical school or university. Other offices that may exist at institutions include public affairs, alumni affairs, and information technology. Smaller institutions often consolidate functions and titles may differ. Although offices within the institution are generally described on an institution's website, the organization chart is usually not found on the website but can sometimes be obtained by searching for it directly.

taste and fit for administrative work by participation in departmental and university committees. Finding the right balance between your scientific work and your work for the good of the institution is in itself useful preparation and training in setting priorities, delegating, and the critically important skill of saying “no” firmly and diplomatically.

In many cases, you can sample administrative work by taking on a short-term responsibility such as organizing a seminar series, organizing a new class, or taking a role as assistant

chair, assistant dean, or some other part-time role. In some institutions, the president's or dean's office has short-term assignments for faculty who show interest in administration.

Core, Center, or Program Director

A position as head of a center or program can be sought before an individual reaches tenure and is an excellent way of both advancing a standard academic career and exploring academic administration (see also Chapter 3). Cores, centers, or

L. Villa-Komaroff

Figure 3. Paths to executive positions in academic administration. The traditional pathway is to achieve tenure in your discipline and then to move into a senior executive position. The black arrows in the figure illustrate the career pathway that is the most conventional and dashed arrows indicate the myriad of possibilities that exist. Presidents most often come from the ranks of provosts and deans but can also come from other central administrators that have executive experience, such as SROs, center directors, or chairs of complex departments such as a department of medicine. In recent years, university presidents have also come from the corporate sector.

programs can be based within a department or can span departments, schools, or even institutions. Smaller entities are generally the best bet for someone early in his/her career. The core, center, or program may be preexisting or can be initiated by a faculty member. The director is often, but not always, responsible for obtaining a grant to support the core, center, or program. To learn about the range of cores, centers, and programs, explore the websites of institutions.

Department Chair

After an individual reaches a tenured position, one possible executive administrative position

is department chair. A department chair is responsible for the academic and research activities of a department and reports to the dean of the school, the provost, or the president, depending on the size of the institution. The department chair is responsible for setting the research direction of a department. To that end, the chair recruits faculty, oversees the academic programs of the department, and develops department budgets. In institutions that are research intensive, most chairs maintain active research laboratories.

A department chair is responsible for the overall direction and quality of the department. He or she must also distribute resources, often

including space. The chair works with the faculty to set the teaching agenda of the department, recruits new members to the faculty, and negotiates with the deans and others for resources for his or her department. The department chair will have a budget and is responsible for working within it. A successful chair will have an overview of the field and a vision for where the field is going. This vision guides the hires and curriculum of the department.

Dean

“Dean” is a title used for a variety of academic administrative jobs. Dean is the title given to the person who is responsible for a school, such as arts and sciences, engineering, or medicine, within a university. Deans of schools generally report to the provost. A dean is responsible for hiring department chairs, promotions within the school, fund-raising for the school, negotiating with the central administration for start-up packages, or the development of cross-departmental entities within the school, which can be either service centers or intellectual entities that bring together members of different departments. The dean will also collaborate with other deans in the formation of cross-school centers and facilities. Deans oversee much of the curriculum as well.

A dean of graduate studies often oversees the graduate programs across schools and reports to the provost. The dean of the graduate school generally has only an advisory role in hiring faculty but is responsible for approving and coordinating the graduate curriculum. The dean of a graduate school has a key role in developing new graduate programs.

“Dean” can also refer to the person in charge of student affairs. This position is most often held by someone with a degree in academic administration, but assistant and associate deans can be found in many offices of an academic institution.

Senior Research Officer

This office is generally found in institutions where substantial research is conducted. The title of this position can be vice president for

research or vice provost for research. In most cases, the position reports to the provost but often is a member of the president’s staff. The senior research officer (SRO) is generally responsible for the infrastructure offices of the institution: grants and contracts, animal research subjects, human subjects, safety, and technology transfer. In addition, the SRO may be responsible for the oversight of university-wide research centers.

Provost

The provost is the chief academic officer of the university or college and reports to the president. The provost is usually responsible for the academic budget of the institution and works closely with the president and the chief financial officer to set the budget for the institution. The provost is responsible for hiring school deans as well as graduate deans and SROs. The provost, in collaboration with deans and chairs, sets the academic criteria for tenure.

President

The president of a research university is responsible for setting and implementing a vision for the institution and reports to the trustees of the institution. The president is also the public face of the institution and the chief fund-raiser for the institution—current presidents spend a great deal of time raising money.

Nonexecutive Positions

A large number of positions within an institution are not necessarily related to a laboratory but can be filled by a PhD with postdoctoral experience or some experience as a faculty member. These include assistant chair, assistant dean, teaching position, diversity offices, technology transfer, and grants management.

Laboratory Manager

Large laboratories often have a laboratory manager who not only does bench work but coordinates ordering, plans laboratory meetings, and generally oversees the activities of the labo-

L. Villa-Komaroff

ratory. In some cases, these are temporary positions held by senior postdoctoral fellows, but there are an increasing number of long-term positions with various titles, including laboratory manager, research associate, or research assistant professor.

Core Director

A position as a core director allows a fair degree of autonomy. There are many kinds of scientific cores and the larger the institution, the more cores there are. Some cores are departmental but most serve several departments and may serve several schools. Some are transient and depend on funding of a center or program project grant. Some are supported by a combination of institutional funds, user fees, and grants. In some institutions, the head of the core is a faculty member on the tenure track; in others, a core director not on the tenure track runs the core and can report to a faculty member or the department chair. These positions generally require a special skill such as cytometry, cell culture, microscopy, or bioinformatics (see also Chapter 3).

Technology Transfer

Most research institutions have an office that is responsible for the commercialization of intellectual property (IP) developed by university members. The technology transfer office is generally responsible for licensing IP to commercial entities and is often responsible for deciding which technology to patent. In many institutions, tech transfer offices have been expanded or new offices have been set up to encourage entrepreneurial activity among the faculty. These duties include identifying funding for new companies, and deciding when a technology is best licensed to a start-up or to an established company.

Grants Management

All research institutions have offices that are responsible for ensuring that grants submitted by faculty meet institutional, local, state, and fed-

eral regulatory requirements (see also Chapter 5). A PhD is not required for a grants management position but can be of value. Some departments and some large laboratories hire a PhD to write grants.

Research Subjects Protection

Research using humans or animals is heavily regulated by the federal government. Human subjects' offices in medical schools are generally headed by an MD, and a veterinary degree is generally required for the head of an animal facility. However, scientists in the life sciences can serve as staff or associate heads. These positions require knowledge of Food and Drug Administration (FDA) and U.S. Department of Agriculture (USDA) regulations. Start by browsing the websites of these federal agencies. In addition, speak with individuals within the office at your institution and learn how the office works.

Safety Office

The safety office is responsible for inspection of laboratories and facilities to ensure safety and for training of personnel that use the facilities. These positions do not require a PhD but sometimes require a certificate, in addition to an undergraduate degree in a science discipline.

Diversity Positions

These positions cover a wide array of options within the offices of student affairs, provost, school, or department. They may include teaching but most often include oversight of programs meant to recruit and retain students from populations that have been underrepresented in university or college settings.

Assistant Department Chair

In some cases, the position of assistant chair is a temporary position for a tenure-track assistant or associate professor who wants to try administration. In other cases, this is a permanent

position off the tenure track. In either case, this person is generally the chief operating officer of the department and handles many of the administrative tasks within a department.

SKILLS AND QUALIFICATIONS

To be an academic administrator in an executive position in a college or university generally requires advancement through the academic ranks to the professorial level. These positions include head of a center or institute, department chair, dean of a college, provost, SRO, and university or college president. Many positions can begin immediately after attaining a PhD or after completing a postdoctoral position, including positions such as providing laboratory services, grant management, intellectual property management, student recruitment, student resources, and teaching services, among others.

Two essential areas of competence are financial acumen and decisiveness. Financial acumen means the ability to work within the resources available, to be aware of sources of revenue, and to obtain additional resources. Practically speaking, it also means the ability to read and interpret the three standard financial statements: balance sheet, income statement, and cash flow statement. These three documents summarize where the money of an institution comes from, where it is, and how it is used. Although you may have experience in setting up and administering a laboratory budget, you will need to develop an understanding of these financial documents.

Decisiveness is the ability to make decisions rapidly and with only partial information. The ability to set priorities based on a vision for the unit you lead, be it your laboratory or the whole institution, is a critical skill. The inability to make a decision can have a worse effect than a mistaken decision. This does not mean that decisions are made in a vacuum; on the contrary, part of the process is seeking appropriate input—the trick is learning how to define “appropriate” and knowing whom to consult. These positions require the desire and ability to showcase the work of others.

You already have some administrative experience if you have assisted in the preparation of grants as a graduate student or a postdoc. You can gain additional experience by volunteering for committees in your institution such as those concerned with safety and intellectual property or by helping to plan department events such as retreats. You can also get involved in committees in professional societies. Please note that each institution and each department and school within the institution has a unique character. As an assistant professor, you can get a taste of academic administration by taking part in the committee work of the department and in the institution. However, remember that your first responsibility is to do the things that you need to do to advance in your career, particularly if you aspire to an executive academic position.

Every science-related job involves some administration. At a minimum, an assistant professor must organize and manage his or her laboratory. This involves time management, financial management, people skills, writing skills, and setting priorities—all of which are basic administrative skills. If you want to be a provost, dean, or president at a research institution, at this point in your career focus on establishing yourself as an independent and productive scientist so that you can get promoted. Although you will need to do your share of the teaching and service requirements of your department, you must focus on publishing and getting research funding. If you have decided that you aspire to an executive position in a nonresearch institution, you must fulfill the requirements for promotion, which are generally teaching and scholarly activities related to your PhD area. You may develop courses, obtain grants for novel programs, or become a mentor to students who enter life science majors. An indication that the administrative route is for you is finding that you enjoy and even seek out administrative tasks within the institution.

One skill that is rarely taught in graduate science programs is financial management and budgeting. This is a critically important skill in any administrative post. Even if you have a financial professional on your staff, you must understand the basics in order to effectively carry

L. Villa-Komaroff

out your responsibilities. This knowledge can be gained from books or an introductory course from the American Management Association (AMA). The courses are effective, are available in cities throughout the country, or can be taken online. Start with AMA's *Fundamentals of Finance and Accounting for Non-Financial Managers*; as of spring 2017, the three-day course cost \$2445 (<http://www.amanet.org>).

Early preparation includes time management in the laboratory, interactions with colleagues and collaborators, as well as the ability to change direction of focus quickly. These are skills that can be developed during postdoctoral training and are essential during the early years of work in your own laboratory or as you prepare for your teaching responsibilities. Although you want to focus on fulfilling the responsibilities as an assistant professor, you also need to pay attention to how your department and institution work.

CAREER PROGRESSION: WAYS IN, UP, AND OUT

Although participating in all activities of a department is important, it is also important to focus on publications if you are a member of a research-intense institution. In smaller, non-research-intense institutions, it is still important to demonstrate that you keep up with developments in life sciences through the literature and professional meetings. In all cases, it is critically important that you learn the requirements for promotion in your institution. Seek advice from faculty members in your department and also from faculty in other departments. It is possible to move from a research-intense institution to one where teaching is the focus; it is very difficult to move in the other direction if you want to be in an executive position. Once a commitment has been made to a particular kind of institution, it can be difficult to move to institutions of a different type, so if you aspire to

Figure 4. Career paths in nonexecutive administrative positions. Possible nonexecutive positions are myriad and can be found in every nook and cranny of an institution. These are generally selected during the early phase of a career and some may require some additional licensure or specialized training.

lead a small undergraduate institution, consider a move to this kind of institution early in your career.

Figure 3 illustrates possible career pathways in executive academic administration. Although president is perhaps the pinnacle of academic administration, your final goal should be determined by your interests and aptitudes. For someone who enjoys being deeply involved in all aspects of a particular area, a position as

center director, chair, or dean of a specialized school is an ideal goal. For those with broad interests, graduate dean, dean of a school of arts and sciences, provost, or SRO provide exposure to a wide array of fields.

Figure 4 illustrates career pathways in non-executive positions. There are many ways to use your training in science in positions throughout the academic institution. As you consider alternatives to a career in science that do not involve

BOX 1. My Experience

My foray into academic administration began as a graduate student at Massachusetts Institute of Technology. As second-year students, three of us successfully proposed a change in format for the initial preliminary exam. We developed the plan with our fellow students and prepared both a written and verbal presentation to the graduate officer. In addition to being thoroughly engrossed in laboratory work, I was also the member of the laboratory most interested in organizing laboratory events and building a comfortable couch for our laboratory library. Another early indicator of my affinity for administrative positions was the role that I had as a postdoctoral fellow when Arg Efstratiadis, Stephanie Broome, and I accompanied Wally Gilbert to England to try to clone the human insulin gene at Porton Down, a high-containment facility. I coordinated the packing of the reagents and equipment that we would need, made the checklists, and oversaw the packing of the large trunks that I bought for the trip.

As a new faculty member, I accepted membership to many university committees, enjoyed planning and teaching new courses, and sat on more student committees than anyone else in the department. This is not recommended behavior: Although it is important to participate in all departmental activities, in a research setting it is even more important to ensure an appropriate focus on research results and publications. A year after receiving tenure at The University of Massachusetts Medical School, I moved to a non-tenure-track position at Boston Children's Hospital and Harvard Medical School. There, I assumed the role of assistant director of the Mental Retardation Center at Boston Children's Hospital and two years later I became acting division chief of the Division of Neuroscience. An acting position is temporary and can be an important learning experience. It often involves many of the responsibilities of the office and fewer of the resources. That I served in this role for eight years while running my laboratory provided a clear indication that I enjoyed academic administration. The position provided me with the opportunity to participate in institutional affairs at a level at which I might not have otherwise been exposed.

I moved to full-time administration as associate vice president for research at Northwestern University and became the vice president two years later. This was a dream job that I almost did not take because it was in Chicago, and my spouse was not inclined to leave his job at Harvard Medical School. The search firm told me that I had to look at the position even if I did not necessarily think I would take the position. I went for the interview, fell in love with the potential of the job, and ultimately spent seven happy years there, during which we had a commuter marriage. When I returned to Boston, I first took a job in academic administration as chief operating officer (COO) and vice president for research (VPR) at Whitehead in Cambridge with the opportunity to work with two dynamic women: Susan Lindquist as director and Maxine Singer as chair of the board. When Susan decided to return to research full time, I joined a start-up company—but that is another story.

L. Villa-Komaroff

BOX 2. Ten Dos and Don'ts

1. Do learn how to read a financial spread sheet and manage a budget.
2. Do learn how your institution works: Who are the key figures? What are the administrative offices and what do they do?
3. Do get to know departmental secretaries—they are a rich source of information on the inner workings of a department.
4. Do try administrative work before committing to it; every job has difficult aspects and it's important to enjoy most of the day-to-day that a job entails.
5. Do apply for jobs that are like those you think you might want.
6. Do not disregard a position without investigating it.
7. Do seek advice from people who are in positions similar to those you wish to consider.
8. Do think of your skills, not your specialty.
9. Do read literature on management and academic institutions.
10. Do not consider your PhD a degree that limits your job options.

running a laboratory in a research-intensive institution such as the one that you have trained in, consider your interests, aptitudes, and the skills you have acquired, not the specialization that is reflected in your thesis.

WWW RESOURCES

<http://www.amanet.org/> Seminars offered by the American Management Association.

<http://carnegieclassifications.iu.edu/> The Carnegie Classification of Institutions of Higher Education (n.d.). About Carnegie Classification. Accessed July 3, 2017. Note: This database includes institutions I eliminated from the OPE database.

<https://ope.ed.gov/accreditation/> U.S. Department of Education databases on accreditation file, File name: Accreditation_04_2017 downloaded April 3, 2017. Note: The database lists 43,790 programs and institutions. All programs in a given institution were consolidated, and then seminaries, high schools, and specialized programs such as beauty schools and aviation were eliminated.

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The Gene Link logo, featuring three stylized DNA double helix segments in blue and green.

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