Finding a career that best fits your needs can sometimes be overwhelming. Thus, to help you navigate through the multiple career paths available out there, NIH held its 6th Annual Career Symposium on May 14, 2013. This event featured an extraordinary panel of speakers that shared their experiences and journeys to find their dream job. Also, it provided a unique opportunity for fellows to learn about bench and non-bench career options and to network with scientists working in different career paths.

Sessions covered a wide range of careers including academics, industry, science policy, science education, science administration, and science communication, among others. This year, we were very excited to introduce two new sessions: one about careers in bioinformatics and another about careers in epidemiology and behavioral sciences. To inform you about all the opportunities available to you, we asked an exceptional group of NIH graduate students and postdoctoral fellows to cover and write about the career sessions presented at the event. As a result, we produced this newsletter in which you will find short synopses of each of the panel sessions. We hope that this newsletter helps you gather all the information you need to prepare for your next career steps!

Enjoy!

2013 NIH Career Symposium Planning Committee
Editorial Board

Natasha Lugo-Escobar, PhD
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“GO GLOCAL”!
Advice from Keynote Speaker Allen Leshner, PhD

“Go Global!” Those were the words Dr. Allen Leshner, Chief Executive Officer of the American Association for the Advancement of Science (AAAS), used to describe how scientists should think about the scientific endeavor. We not only need to think about the small details in research, but also about how research will affect society both locally and globally.

According to a recent poll, scientists are one of the most well respected professions. The public agrees that science should be funded, but in order for this to happen, scientists not only need to do great science but also need to be effective businessmen and businesswomen, as well as excellent communicators. Scientists need to learn how to communicate science to the general public to make sure they understand what we do. Unfortunately, still today, children have a misconception of what scientists look like. They picture Dr. Bunsen Honeydew or Beaker from the “Muppets”: that they all have crazy hair or are bald, all are males with glasses, and white lab coats! But we are a diverse population with roles from bench to non-bench, male and female, and who work in private (i.e. industry) and public sectors (i.e. government).

Dr. Leshner pointed out that scientists are not tied to the bench anymore. In fact, he was a very successful bench scientist and joked that his former mentor went into “mourning” when he decided to leave the bench for science policy. Fortunately, his mentor came out of “mourning” when he realized that leaving the bench was not the end of the world for a scientist! There are many career paths in industry, government (both intramural and extramural), and nonprofits. Dr. Leshner has followed each of these careers at some point in his life! If you want to explore these many career paths, Science Careers has a nifty little tool called MyIDP (My Individual Development Plan) that can map out the milestones that need to be met for over 20 different scientific career paths. But overall, Dr. Leshner mentioned that “each of these career paths require strong scientific credentials necessary for success.”

Funding often came up during the keynote. Even though research funding is currently constrained, there is a push towards improved funding opportunities. For example, President Obama ignored the 2013 sequestration and built the 2014 science budget from the 2012 budget. Also, Dr. Leshner recently wrote the editorial “Just Give Them Grants,” where he made the claim that funding decisions should move towards supporting younger investigators. In fact, now more than ever it is easier to fund transformative, high-impact, and high-risk projects. This is due to so many leaps and bounds in science and technology during the last 2 decades. But high-risk, high-impact projects do not come without consequences. We deal with scientific misconduct, improper human subject research, and unethical animal treatment that, even though rare, are amongst the issues that the public hears about in the news. “For science to prosper, the science-society relationship must stay positive.” Fortunately there is positive publicity in science from programs such as NASA. Again, communication is key. Scientists need to be more transparent in the public eye. We study global and societal issues; why not make press releases instead of just publishing articles? The average person does not read scientific journals. They watch the news or listen to the radio. More and more scientists should look into volunteering in public outreach programs to communicate and make connections with society.

As Dr. Leshner says, “Do great science. Help spread great science. Help bring science and society close together!” So get out there and “Go Glocal!”

Shu Hui Chen is a Postdoctoral Fellow in the Laboratory of Clinical Infectious Diseases within the NIAID. Under the guidance of Dr. Peter R. Williamson, her research focuses on the opportunistic pathogen, Cryptococcus neoformans (Cn). She is a member of the steering committee of the fellow driven NIH Global Health Interest Group and the basic science representative to the Fellows Committee for NIAID. She has chaired the Fellows Committee Service and Outreach Subcommittee, since its induction in 2010.
Academia: Being a Competitive Applicant

Finding a faculty position in academia can be daunting, even in times of ample scientific funding. Given the current funding difficulties and dwindling number of tenure-track positions, how can you stand out to be competitive for an academic career? Although no single formula guarantees success, Eric Poeschla, MD from Mayo Clinic, Maria Rubio, MD/PhD from University of Pittsburgh, and Wei-Hua Wu, PhD from Georgia Regents University, offered constructive advice. The recurrent themes throughout this panel discussion included publishing well, writing successful grant/fellowship applications, demonstrating independence, and finding a good match.

Solid Publications:
One of the most critical aspects of a strong academic application entails a solid publication record. However, according to Dr. Poeschla, a Science, Cell or Nature paper may not be necessary as long as the science is sound and it opens up new opportunities for future research. Nevertheless, having publications in relatively high impact factor journals does not guarantee a successful application as there are other key factors that are important as well.

Apply to Positions with Funding:
Due to the tight funding situation, applying for academic positions with a grant already in hand is now the norm. As explained by the panelists, the university department takes a risk when hiring a new faculty member by investing start-up funds and resources, so they want to see indications of successful grant applications. Even a high score on an initial grant may suffice, according to Dr. Eric Poeschla. NIH grants, including K99, K22, and R21, offer great options for acquiring initial funding. Dr. Wei-Hua Wu also mentioned that numerous private foundations, such as the American Cancer Society (ACS) and the Leukemia/Lymphoma Foundation, offer funding opportunities for new investigators.

Establish Independence:
A successful application also involves establishing independence from your postdoctoral advisor. Dr. Maria Rubio stressed the importance of demonstrating your own thoughts and ideas in your research proposal and interview. The panelists recommended discussing early on with your advisor what components of your project you can take with you and, then, developing a research plan that distinguishes you from your mentor. The job talk during an interview is essentially a research plan for developing an R01 grant application, according to Dr. Wei-Hua Wu. Thus, you need to have a clear idea of potential new avenues of research for your proposed project. In summary, an academic search committee wants to hire mature scientists with independent thoughts, creative ideas, and long-term research goals in mind.

Find a Good Match:
Identifying positions that match your skill sets and project goals may take considerable effort, but is critical. All panelists emphasized “Do your homework!” This means to first ensure you are a good match for the academic position to which you are applying. This may involve contacting someone in the department to learn more about the position and the type of candidate they want; then tailor your application accordingly. Be sure to research other faculty members in the department and identify ways to tie your research into their interests. For example, relate the applicability of a specific technology or methodology you can bring to the department that may benefit the research goals of others. Dr. Poeschla added: “You are always ‘on’ during an interview.” You want to be confident and distinguish yourself as a valuable asset to the department, since many other strong applicants are likely vying for the same job.

Attaining a tenure-track position in academia may take a little bit of luck, a lot of persistence, and a carefully tailored application, but following the suggestions discussed above will set you on the path for success.

Morgan O’Hayre is an IRTA Postdoctoral Fellow in J. Silvio Gutkind’s lab at NIDCR. Her graduate work at UCSD involved characterizing the roles of chemokines in cancer and she now works on elucidating functions of G-protein coupled receptors in diseases including cancer and asthma.
Academia: Surviving the First Few Years and Tenure

Yes, you can survive! Becoming a tenured academic professor in a research university can be challenging, but with the right approach you can do it. This panel focused on the process of earning tenure and what it takes to secure your success.

Evaluating a candidate on teaching, research, and service is the gold standard academia uses for tenure promotion. A tenure track position is your opportunity to prove you can succeed in all aspects of academia. Indeed, this is a period in which time-management and multi-tasking skills are crucial. Tenure track candidates often have difficulty saying “no” when asked to serve on committees, or teach new classes. Be realistic, prioritize, decline politely, and/or collaborate when feasible. The pressure to be productive can be eased by choosing tasks wisely and having a dedicated committee to guide you.

Having effective prioritization and time management skills are also vital to your personal life. Linda Werling, PhD, a Professor at The George Washington University, explained that early in her career she gave up many Saturdays but, with tremendous support and guidance, she did not sacrifice much. Many institutions allow you to “stop the tenure clock” for family or military commitments. The tenure process is better described as a “delay of things” as opposed to “a sacrifice,” remarked Antonio Baines, PhD, a recently tenured Assistant Professor at North Carolina Central University. If you can appreciate the big picture, you will see it as simply postponing things for a better, more secure future.

The panelists offered practical advice for those applying for or beginning tenure track positions. Check the tenure retention rate at the institution and learn why other individuals were not awarded tenure. Also, with so few tenure track positions available, you might consider starting with a research track and then transferring to tenure track, although this cannot always be done at the same university.

Now, once you find a tenure track position, consider the package offer. Alexxai Kravitz, PhD, an Investigator at NIDDK, emphasized that you should understand the costs to set up a lab and what you need to be successful. Negotiate resources and remember that some things can go wrong (e.g., your promised lab space remains unavailable). Although negotiation is important, you must be reasonable, warned Matthew Sachs, PhD, a Professor at Texas A&M University. Most institutions have other highly qualified, less insistent applicants.

Once you start your lab, it is important to hire the right people. Dr. Kravitz believes it is best to hire someone with a common research vision and similar skill set who will need little supervision. Dr. Sachs advised to take references seriously and, if possible, review applicants’ personnel records from human resources. These documents can reveal issues not mentioned in a recommendation letter. When hiring students, be sure to consider who covers their tuition and what other benefits and responsibilities might come with mentoring a graduate student.

Besides having the resources and people to support your promotion for tenure, knowing what they expect from you is critical. Understand your faculty code and do everything you’re expected to do. Meet frequently with your chair and dean of faculty, as they will keep you on track. And finally, don’t ask for an early decision. Attaining tenure typically takes about 7 years and you need that time to develop your skills, notes Dr. Werling.

Although the tenure track process can be challenging, the panelists agree it is very rewarding. Scientists already possess much of the determination and skill needed to succeed in academia. If your goal is to become a tenured professor, embrace the right attitude and go for it! Yes, you can survive!

Carrie House is a first year Postdoctoral Fellow in the Medical Oncology Branch of the National Cancer Institute working in the laboratory of Christina Annunziata, MD, PhD. After receiving a BS in Biology from George Mason University, she completed a postbaccalaureate fellowship at NIDDK. She earned her PhD in Molecular Medicine at The George Washington University under the guidance of Dr. Norman Lee.
Do you dream of a job where you can teach and do research? Then, why not work in a primarily undergraduate institution (PUI)? The panelists, tenure-track Assistant Professors Henry Adler, PhD; Mawadda Al-Naeeli, PhD; William Heuett, PhD; Benedict Kolber, PhD; and John Weldon, PhD, talked about teaching and research opportunities at PUIs. Their recommendations: keep an open mind (look for different institutions), cast a wide net (be willing to travel further if needed), and be prepared to adjust your work-life balance. Moreover, the panelists recommended to start looking by the third year of your postdoctoral training, so you have enough time to prepare your applications as well as to find job openings, conduct interviews, and negotiate job packages. Panelists stressed the importance of tailoring the complete application packet to each institution’s mission and vision.

Most primarily undergraduate institutions emphasize teaching; therefore, they expect the applicants to have a clear written statement describing their teaching styles, expectations, and how students will be evaluated. Since NIH is not a teaching institution, Dr. Mawadda Al-Naeeli commented that she volunteered to teach by developing a team-taught course for the Foundation for Advanced Education in the Sciences (FAES). Likewise, Dr. William Heuett suggested looking within your institute and the NIH at large for teaching opportunities. In fact, if you trained an undergraduate, a fellow colleague, or a post baccalaureate student, you have taught! All panelists, former NIH postdocs, agreed that workshops offered by the Office of Intramural Training & Education (OITE), like “Scientists Teaching Science” were a great asset to help them develop their teaching philosophies and teaching styles.

Now, what about research at primarily undergraduate institutions? What about laboratory space, equipment, and support money for your research? Many institutions have startup money ($20K to $300K). Dr. John Weldon stated that grants are not necessary but highly favorable. In fact, one of the benefits of being at a primarily undergraduate institution is that you have a hard contract, which means you can supplement your income with grants. However, at Dr. Adler’s institute, there is a bigger push to emphasize research for which you need to find support. Fortunately, support can be found by collaborating with other colleagues or laboratories. Dr. Al-Naeeli kept close ties with former mentors and colleagues to foster collaborations and to continue working on high impact research. Dr. Kolber’s university provides investigators with space for animals. Actually, one can combine teaching and research by having undergraduate students conduct question-driven laboratory courses. If your institute is large enough, you may also have graduate students. Dr. Heuett stated that you can work in other research fields such as educational research. Yes! Education is also a science! He also mentioned that there are short-term grants that are available for summer research. All panelists agreed that you should publish a series of smaller papers instead of one large paper to keep up with publication demands (2-3 for tenure). In addition, collaborations with research institutes like the NIH or larger universities can offset the space and monetary hurdles.

In summary, being a successful professor and researcher at a PUI means that you not only need to be passionate about teaching but also able to manage your lab to keep up with cutting-edge science. Learn how to prioritize, develop time management skills, and keep an open mind, as you never know where the science might take you.

Shu Hui Chen is a Postdoctoral Fellow in the Laboratory of Clinical Infectious Diseases within the NIAID. Under the guidance of Dr. Peter R. Williamson, her research focuses on the opportunistic pathogen, Cryocotococcus neoformans (Cn). She is a member of the steering committee of the fellow driven NIH Global Health Interest Group and the basic science representative to the Fellows Committee for NIAID. She has chaired the Fellows Committee Service and Outreach Subcommittee, since its induction in 2010.
Careers at the Bench (Non-Industry)

Do you want to stay at the bench but do not want an industry or a tenure-track academic position? The “Careers at the Bench” panel discussed a wide array of opportunities in laboratory positions outside of academia and industry.

Heidi Hoard-Fruchey, PhD is a Principal Investigator and runs the microarray core at the military-run USAMRICD. Focusing on host-poxvirus interaction, Victoria A. Olson, PhD works in public health research at the CDC. Martin P. Playford, PhD, is a Staff Scientist at the NIH. Working for the non-profit Stowers Institute for Medical Research, Michael Washburn, PhD is a Principal Investigator who manages a lab utilizing advanced proteomics technology. Kanika Pulliam, PhD manages a core facility shared by Howard Hughes Medical Institute and Morehouse College. Although the title of the panel suggests that these scientists are regularly at the bench, Dr. Hoard-Fruchey and Dr. Washburn admit that they rarely see the bench. More often, they manage people who work at the bench and as Dr. Washburn put it, “I get all the credit for things that I don’t deserve…they do all the work.”

A major theme throughout the panel was management, which encompasses hiring, training, designing experiments, trouble shooting, presenting, and communicating with both scientists and non-scientists. Additionally, the panelists emphasized independence, communication, and adaptability as essential skills for their positions. Dr. Heidi Hoard-Fruchey served as a prime example of adaptability; she became the head of the microarray core, without ever having done a microarray!

A major plus for non-industry and non-academic bench positions is a typical 9 to 5 pm work schedule with occasional work on weekends. This is quite a change from the typical academic philosophy where success is often equated with number of hours worked. However, this is not universal; Dr. Michael Washburn noted that his work schedule is similar to the typical academic work hours. However, he still has a more flexible work schedule, and is able to work compressed schedules or telework.

A great benefit of this career is the fact that you can dedicate more time towards your research since you are not required to teach. Though, there are still opportunities for formal teaching or less formal mentoring. For example, Dr. Washburn is an Associate Professor at the University of Kansas Medical School and other panelists mentor post-bacs and post-docs in their laboratory. Another plus in these tough times for funding is that they don’t need to write grants to secure financial support.

Rather than securing funding, the panelists cited managing people and personalities as their major source of stress. Other drawbacks include restriction of research to the mission of the institute: Dr. Olson’s research must relate to public health, Dr. Hoard-Fruchey’s must fit the USAMRICD mission, etc. Working at government agencies also involves navigating the proverbial red tape. Likewise, staff scientist positions offer limited career progression and are in jeopardy when a principal investigator retires.

If you’ve read this far, you’ve probably decided that you’re interested in a non-academic, non-industry bench career, but how do you find a job?

We have heard it multiples time: Networking! Many of the panelists got their positions by connecting with people outside their lab, but within their department or institute. Post docs, internships, and ORISE fellowships provide an opportunity to gather the skills needed for these positions and meet people in these organizations, which can lead to permanent positions. In addition, panelists suggested using resources such as LinkedIn and ResearchGate to find connections and positions. Search your network, USA jobs.com, and the ORISE fellowship page for a good work-life balance bench science career!

Kaitlyn Morabito is a PhD candidate in Georgetown University-NIH Graduate Partnership Program. She currently enjoys studying cellular immunity to Respiratory Synticial Virus in the Viral Pathogenesis Laboratory in the Vaccine Research Center in NIAID.
Careers in Bioinformatics

Bioinformatics involves answering key biological questions using state of the art computational technologies. It is an evolving scientific field and an attractive career option. In its first year in the Career Symposium, this panel featured three scientists having over 10 to 20 years of experience leading and shaping a variety of bioinformatics projects in industry, academic, and government settings. The discussion offered several important tips on preparing for a career in bioinformatics.

Meet the Panelists:

The panelists included Sean Conlan, PhD, a Staff Scientist at the National Human Genome Research Institute (NHGRI); Joe Delaney, PhD, a Curation Scientist at NextBio; and Paul Rejto, PhD, the Director of Computational Biology at Pfizer Inc. Dr. Conlan has a background in medical biochemistry, and is currently directing the bioinformatics analysis for exploring the human skin microbiome. Dr. Delaney comes from an immunology background, and is currently involved in designing solutions for mining and curating public genome data. Dr. Rejto has a background in chemistry, and is currently leading a team that designs computational tools for identifying predictive markers for developing new oncology therapies.

What Makes Bioinformatics Unique?

Dr. Rejto underlined the key difference between bioinformatics and other data-intensive fields. In other fields, there are a large number of well-defined data points. In biomedical sciences, while the number of data points is limited, each point is highly complex and uncertain. One of the subtle tasks, entailing deep biological understanding, is to reduce the data to relevant pieces of information. Dr. Delaney added that curation challenges and huge data heterogeneity associated with biological data are some other factors that make existing off-the-shelf tools unsuitable for biological data analysis.

What Skills Would Get Me Hired?

Despite working in different settings, the panelists agreed on specific skills they seek while recruiting new candidates. The foremost skill is the candidate’s ability to understand, describe, and solve a given scientific problem. Another important skill is the candidate’s training in the secondary area: biological sciences candidates are assessed by their scripting and tool usage skills; computer science/statistics candidates are assessed by their domain knowledge and experience working with pharmacists or biologists. Moreover, candidates demonstrating not only good interpersonal skills but also the ability to learn new skills and stay up-to-date are preferred.

Is PhD/Postdoc Required to Pursue a Bioinformatics Career?

Some common questions were whether one should seek a position directly after a master’s degree or continue to get a PhD, and whether postdoctoral experience is required. Since it is difficult to anticipate the job market, the panel strongly recommended that the choice be based on your own interests (e.g. algorithm designer, team leader, principal investigator (PI), bench scientist, writing, administration), and where you are most likely to earn those skills. Most bioinformatics organizations and laboratories offer a wide range of options for candidates with a variety of academic qualifications. Those who cannot afford an advanced degree might consider other alternatives, e.g. NIH Bioinformatics Interest Group and NIH FAES graduate school.

What to Expect in the Near Future?

The pharmaceutical industry is turning into an information industry, every oncology patient is being sequenced, and PIs obtain data even before the scientific problem is conceptualized. This makes for an exciting time for bioinformatics creating a high demand for computational and curation skills, and as Dr. Conlan nicely said “for every conclusion, 100 others could be drawn from the same data set.”

If you have a background in biology, computation, or related fields, and are willing to learn from the other side and promote collaboration, you might consider a career in bioinformatics. Most importantly, if Dr. Rejto’s comment, “bioinformatics - where the most interesting problems are yet to be solved!” gives you an adrenaline rush, then bioinformatics is the career for you!

Ritu Khare is a Postdoctoral Fellow at the National Center for Biotechnology Information, National Library of Medicine, NIH. She is working in the Biomedical Text Mining group under the supervision of Dr. Zhiyong Lu.
We know that there is a wide range of career opportunities for PhDs. This year, in an effort to keep expanding career options for PhDs, a diverse panel on careers in epidemiology and behavioral sciences was incorporated to the Career Symposium.

The first panelist, Laura P. Forsythe, PhD, MPH, works as a Program Officer for the Patient-Centered Outcomes Research Institute (PCORI). PCORI is a nonprofit institution that serves to examine the relative health outcomes, clinical effectiveness and appropriateness of different medical treatments by evaluating existing studies and conducting their own studies. Their findings serve to inform health care policy, such as when Medicare (among others) decides what procedures to cover. PCORI awards grants ($88.6 million over the last three years) to fund patient-centered comparative clinical effectiveness research projects. As a program officer, Dr. Forsythe’s main responsibilities include evaluating programs and funded research, supporting intramural survey research functions, and overseeing externally funded projects. The attributes of successful PCORI employees include big picture thinking, teamwork, communication skills, and a strong background in research methodologies.

The second panelist was Robert M. Kaplan, PhD, the Director of the Office of Behavioral and Social Sciences Research (OBSSR) at the NIH. The role of the OBSSR is to stimulate behavioral and social sciences research throughout the NIH and to integrate these areas of research with other areas of the NIH health research enterprise. Dr. Kaplan’s responsibility as Director is to ensure the role of the OBSSR is completed efficiently and effectively. In addition to the ubiquitous skills of leadership and communication, his position requires a unique skill set that includes an understanding of the basic science and research methodologies underlying behavioral and social sciences research and an understanding of how people from different backgrounds and expertises view and approach the mission of the OBSSR.

Kristen Keating, PhD, the third panelist, is a Study Manager for Westat, an employee-owned corporation that provides research services to the U.S. government, local governments, and businesses. Westat’s primary research service is statistical survey research but they also provide custom research and program evaluation studies across a broad array of subject areas such as computer systems technology, biomedical science, health information technology, and clinical trials. The predominate responsibilities of a study manager are writing procedure manuals, training and supervising field data collectors, designing surveys and biospecimen data collection forms, and organizing scientific working groups. This position requires flexibility, openness to new experiences, and the ability to learn quickly since the projects usually vary widely in their scope.

Lastly, Michelle Odden, PhD, is an Assistant Professor of Epidemiology at Oregon State University (OSU), a Tier 1 Research University that offers masters and doctorate degrees in a wide variety of science disciplines. Dr. Odden conducts epidemiological research and is the principal investigator of two grants. Her responsibilities are typical of most Tier 1 research institutions and include publishing novel findings, obtaining grant funding and mentoring masters and doctoral students (she currently advises 6 masters’ students). In addition, she teaches one 3-credit course and one 1-credit seminar per semester and serves on three masters and three doctoral thesis committees. Her position requires a strong research and grant writing background along with people management, teaching, and organizational skills.
How does a medical doctor become a clinician scientist? Does having an MD mean you are stuck in the clinic and will never touch a pipette after leaving medical school? These were just a few of the topics discussed by the panel on career options for clinician scientists.

The panel was composed by Beth Bellacuso, MD/PhD, the Director of Clinical Research & Operations at Meridian Medical Technologies, a Pfizer company; Compton Benjamin*, MD/PhD, the Clinical Director of Urologic Oncology at George Washington University Hospital; Lawrence Kirschner, MD/PhD, a Professor at Ohio State University; and Jay Slater, MD, the Director of the Division of Bacterial Parasitic and Allergenic Products at US FDA. Their diverse career roles reflect equally diverse paths to their current positions and the numerous options available to clinicians at various stages of their career development.

Though many of the panelists are doctors twice over, having an MD alone is sufficient for a career path that involves research. So, when does a clinician with an interest in research need to get that laboratory experience and publication record to be competitive: during medical school, residency, or fellowship? Not many medical doctors enter into residency with a first author publication; those who do are very competitive for “short track” research residencies. By large, fellowships are the more common period to delve into research. If you have already identified a research fellowship program that suits your career goals, apply for residency at the same institution to increase the likelihood of getting that fellowship. But, how many publications do you need to be competitive for an academic position? It is important that you have at least three first-author research publications (sorry, case reports don’t count) on your CV, though seven publications are the average when applying for an NIH "K" award.

Individuals who are determined to get both an MD and a PhD are in high demand as clinician scientists. Career options for MD/PhDs include openings in the pharmaceutical industry, where clinicians are involved in clinical trials, reviewing communications for medical accuracy, and more research-intensive roles in drug development. There are also the more traditional roles of working in academia balancing both clinical and research duties. The panelists all cautioned, however, that any clinician who seeks out an academic position with both clinic and research responsibilities, should find out the expectations of their prospective employer with regard to time spent in the clinic versus the laboratory.

For those clinicians who may already be headed along the path to a clinician scientist faculty position, the panel has advice for you as well. Perhaps you were (or are being) groomed for a faculty position by your mentor and are now considering an alternative career in industry or government regulation? As is the case with pure science PhDs, it is much easier to move out of academia into these careers than into academia for clinician scientists. If you have been working solely in the clinic and now want to move into research or vice versa, what obstacles might you encounter? Again, the emphasis comes down to publications; these are highly valued by academia and the research community and it will be critical to maintain an active publication record on the side while in an industry or pure clinical career.

Regardless of your career choice, the panelists encouraged physicians early in their careers to maintain some level of clinic involvement and connection to their patients. Trust me, when your cloning fails for the thirteenth time, it is helpful to remember who your basic science is helping.

*Dr. Benjamin was inadvertently listed as Benjamin Compton in the panelist biographies. His full profile is available from GW’s website.

Megan S. Kane recently completed her PhD in Human Genetics at Johns Hopkins University School of Medicine and is an incoming postdoctoral fellow at NHGRI’s Undiagnosed Diseases Program. Her brief intermission from the laboratory has been spent as a Communications Intern with the biomedical research advocacy group Research! America.
A career as an entrepreneur can be exciting, fulfilling, and extremely lucrative. However, the expert panel also warned that this type of career is not for the faint of heart; you must be willing to take a risk, work long hours, and deal with a bit of chaos. As this career entails building a successful business from an idea, an entrepreneur must be the inventor, the communicator, the manager, the CEO, and the janitor all at the same time. Though challenging, a successful entrepreneurial career is obtainable, as evidenced by the four panelists that shared their experiences and wisdom during the entrepreneurship session.

While all of the panelists’ jobs involve scientific business development, the paths they followed and their current positions differ greatly. Sherri Bale, PhD, FACMG, co-founded GeneDX, a company offering genetic testing for patients with rare disorders, after working as a board-certified medical geneticist at the NIH for 16 years. During this time, she saw an increasing demand for this service within her own field and saved a small amount of money for start-up expenses. After 6 years, a public company acquired GeneDX and promoted Dr. Bale to her current position of Managing Director. In contrast, Ben Dubin-Thaler, PhD, founded his educational non-profit organization, BioBus, immediately after finishing graduate school. Fueled by his passion for science education, he created the BioBus mobile science lab to bring PhD level science to kids who would likely not experience it otherwise. Todd Chappell, MBA, is currently the Entrepreneur-in-Residence at the Office of Technology Transfer at NIH and BioHealth Innovation, Inc., where he assists in identifying and evaluating new technology proposals. Mr. Chappell acquired this job after overseeing early-stage therapeutic product development at pharmaceutical companies for over 10 years. Though he has a similar educational background as Mr. Chappell, Stephen Auvil, MS, MBA, began by working in technology transfer. Today, Mr. Auvil is the Senior Vice President of Technology Transfer and Commercialization at the Maryland Technology Development Corporation (TEDCO), which fosters the growth of technology by providing seed money for start-up companies. In this position, he oversees all of TEDCO’s funding programs, develops new programs, and makes policy decisions.

In response to several of the attendees’ questions, the panel outlined the first steps you should take once you have a good idea for a business or product. First, evaluate your potential product objectively. Research the market to find out what products are already available, whether your idea is unique or substantially improved from what is currently available, if people will spend money on your product, and if there is any evidence that the product will be successful. In addition to convincing yourself of the product’s marketability, the answers to these questions will help you convince potential investors to finance your venture. Dr. Bale added, “You can tell who is going to fail by their presentation to potential investors— they haven’t thought about their market.” Second, it is critical to build a team of people that possess expertise in areas with which you are less familiar. This may be especially important for scientists who are knowledgeable in the laboratory industry and market, but less so in business planning and product development. Finally, the panelists stressed the importance of networking as a key factor for entrepreneurial success. Networking may help you find members of your business team, future customers, as well as seed investors or venture capital groups. Emphasizing this, Mr. Chappell pointed out, “You don’t find venture capital, venture capital finds you.”

Unlike many other jobs, there are no prerequisites for becoming an entrepreneur. As a result, there is nothing to prevent those who are interested from pursuing this career path. All you really need is a marketable idea and the drive to succeed!

Elizabeth Burke is a Postdoctoral Fellow in the NIH Undiagnosed Diseases Program (UDP). She is investigating the molecular pathogenesis of undiagnosed neurological and developmental disorders through the use of zebrafish as a model system.
Have you found yourself wondering what type of career would allow you to stay at the forefront of scientific discovery without actually doing experiments? For those wanting to utilize their PhD and scientific experience away from the bench, it is worth considering a career in patent law, technology transfer, or scientific consulting.

This panel included experts from diverse career paths in technology licensing, consulting, intellectual property law, and patents. The panelists shared the reasons why they had chosen their particular position over others, talked about their experiences striving for work-life balance, and provided advice for individuals looking to transition into these fields.

Kathryn Callahan, PhD, a Senior Management Consultant at a large consulting firm chose a career in consulting because she appreciates the analytical aspect of scientific research and enjoys working in a collaborative environment. Working on a variety of projects allows her to constantly learn from and network with her peers, which enables her to continually “build her brand.” Work-life balance is very specific to the firm as some require travel, but she chose hers because of the 40-hour work week and the family-friendly environment. She recommended using LinkedIn and networking events to establish an in-house referral for the firm that one is interested in.

Aditi P. Martin, PhD, a Technology Licensing Associate at a major university, enjoys dabbling in a variety of topics including marketing, licensing, working with royalties, and patent law. The breadth of knowledge she is acquiring, together with staying current by attending scientific conferences, will open many future opportunities for her. Dr. Martin was in part attracted to this position because of the 40 hour/5 days work schedule and flexibility to telework from home. To introduce oneself to this career, she recommended interning at a technology transfer office and taking some basic courses. She also recommended looking into organizations such as AUTM (Association of University Technology Managers) and LES (Licensing Executives Society) for additional training and networking opportunities.

M. Shane Smith, PhD is a Technical Specialist at a major intellectual property (IP) law firm. He chose his career in patent law because it offered more security and a higher salary compared to an academic professorship, and because he really enjoys writing about scientific topics in an argumentative manner. Dr. Smith admits that the billable hour requirement per year can be tough and that it is necessary to advocate for oneself to have adequate work flow to both meet the billable hour requirement and to take vacations. He recommended learning about IP law from basic patent textbooks so that you can “talk the talk” and distinguish yourself from other job candidates. He also suggested either taking the Patent Bar Exam or starting law school as ways to join a law firm as either a patent agent or a student associate.

Sean Barron, PhD, a Patent Examiner at the United States Patent and Trademark Office (UPTO), chose his career because he enjoys reading and evaluating scientific literature. Through informational interviews, he found that patent examiners benefit from good salaries and job security. He explained that work-life balance can be challenging for early career patent examiners until they build enough experience to manage their docket efficiently and meet their production requirement. Dr. Barron recommends applicants to highlight a wide range of knowledge on their resume/CV because examiners are hired for “breadth and not depth.” He also advised creating an alert for “patent examiner” on www.usajobs.gov and actively learning about the field.

As the panelists explained, each of these careers allows someone trained as a bench scientist to be involved in cutting-edge research and be up to date on scientific literature in a non-traditional way.

Cory Lago graduated from the University of Texas at Austin with a PhD in Cell and Molecular Biology in 2009 and then came to the NIH. She has been a Postdoctoral IRTA Fellow at NHLBI for four years studying p53 mutations found in Li-Fraumeni syndrome and how they alter mitochondrial metabolism. She plans to stay at NIH for a final fifth year after which she’ll pursue a career in technology transfer or patent law.
As scientists, when we hear the term “Drug Discovery”, we picture the hours of work in the laboratory required to screen, identify, test, and re-test exclusive compounds before confidently deeming them worthy of the market. We may also imagine the monetary and technical resources that make it possible. But drug discovery does not end there. On the contrary, that is just the beginning. Launching a drug involves a tenable marketing strategy based on reliable and accurate market research. It involves licensing, product management, and much more. But surely, we, as scientists cannot contribute much to these, so called, “commercial” aspects, right? Wrong! This is precisely what the panelists at this session were drawing our attention to.

The panelists, all of whom started out as graduate students and post-doctoral fellows, represented various stages in the drug discovery pipeline. Ann Field, PhD is a Project Manager at MedImmune who co-leads multiple drug production teams simultaneously. Kathrina Quinn, PhD is a Research Analyst involved in studying market trends all over the globe to assist companies in informed decision making. Derek Francis, PhD is an Associate Director at Synapse Medical Communications whose job is to help various pharmaceutical companies launch their product by developing a potent marketing strategy. Finally, Rana Al-Hallaq, PhD is a Business Development Manager at Forest Laboratories who helps companies or academia commercialize and license drugs that they discovered.

So what would be the first step to transition into these positions? It is very important to demonstrate to your potential employer that you are really serious about transitioning. As diverse as they are, the panelists concurred that finding extra time to acquire additional training during their post-doctoral research gave them an edge over competitors. “It really made all the difference to my resume,” said Dr. Quinn, referring to a Biomedical Business Development course offered by NIH, which she had taken. Doing an internship or volunteering at a company also significantly boosts one’s chances of employment there, as was the case with Dr. Field. Longer training opportunities such as a full business degree (like an MBA) can be a plus in some cases, but not a necessity. As Dr. Francis explains, “a scientist can always learn the business side of affairs while the reverse is much harder.” Finally, the importance of networking in raising the odds of encountering job opportunities was reiterated.

The initial period of employment in the new position would be a steep learning curve. But this is not a huge cause of concern, says Dr. Al-Hallaq. “As PhDs, (sic) we can adapt and learn very fast. We have successfully switched between research projects in the past and it is not something we cannot manage.” Most of the training is provided on the job although sometimes a formal training session or two may be required.

While exciting, such a transition is not without its share of hurdles. According to Dr. Field, convincing potential employers to give you a chance to transition is hard enough. There is also the tricky proposition of working and communicating with people without a scientific background. In addition, the work tends to be fast paced. While we are used to setting the timescale for our own experiments in our labs, the company sets deadlines that can be challenging to meet at the best of times.

Thus, being the “science person” in the commercialization team of a drug company is yet another career away from the bench that significantly contributes towards launching a new drug.

Gautam Shenoy’s obsessive love for Immunology has brought him to the Laboratory of Molecular Biology and Immunology at the National Institute on Aging. He is currently a Postdoctoral Fellow studying the molecular regulation of immunoglobulin diversification.
Have you ever wondered if you qualify for a career in scientific support? All you need is to have some level of knowledge in the field, to speak intelligently, and to find someone who gives you a chance.

A Scientific Writer, Allison Bierly, PhD from Qiagen, Inc. and two Field Application Specialists (FAS), Andreas Antonio Larrea, PhD from Pacific Biosciences and Jeffrey Knight, PhD from NuGEN Technologies, shared their experiences about working in scientific support. Dr. Bierly writes for internal clients and her duties range from product descriptions to web content. Drs. Larrea and Knight set up equipment and/or software for external users.

All three panelists made a transition after a postdoctoral fellowship at NIH. Only two years ago, Dr. Knight was introducing panelists at a career symposium, whereas Dr. Bierly was writing for the NIH Catalyst. The panelists encouraged current fellows to volunteer with OITE and FelCom, and emphasized that using OITE resources helped them find their niche in the world outside academia.

In contrast to many other career paths, lack of publications from postdoctoral work is not a barrier for a job in scientific support. “If you can demonstrate that you presented your work at meetings and were expanding your professional skills, that is all that is necessary” said Dr. Larrea. Indeed, due to the extensive interaction with people required in these types of positions, experience delivering oral presentations is valued higher than written publications. This holds true even for a scientific writer because of the need to communicate with diverse groups within the company. The panelists advised current fellows to use their time at NIH efficiently, and encourage them to take initiative and cultivate management, writing, and communication skills, which are essential for any position in industry.

In the modern world of communication and connections, networking cannot be emphasized enough. The panelists encouraged current fellows “to reach out to people” and try contacting those directly involved in the hiring process. Dr. Larrea, speaking from personal experience, mentioned that a conversation with someone from the company could lead to an interview, even if you lack specific “hands-on” experience. To find people that can help with the career transition, Dr. Knight encouraged fellows to contact colleagues they already know and ask to be introduced to those who work in interesting places. Reflecting on his experience he mentioned, “I would contact anybody who would talk to me.”

Scientific support positions can differ significantly depending on the company size and location. In a small organization, you might enjoy doing “a bit of everything”, but the lack of defined roles for company employees can be a challenge. Depending on the type of position, travel time varies significantly. For example, Dr. Bierly works in internal support, thus, doesn’t travel at all, whereas Drs. Larrea and Knight provide support to external groups and are traveling most of the time. Nevertheless, 70% of the time traveling can mean different things depending on the geographical locations of clients. When the clients are local, you are likely to return home every night.

One of the postdoctoral fellows in the audience cautiously asked if FAS positions could be repetitive and boring. But Drs. Larrea and Knight haven’t found them boring yet. “There’s overlap [in job routine],” said Dr. Knight, “but you find something new every day.” Dr. Larrea added with a laugh, “the moment you put equipment to use, the lab finds new and completely unexpected applications.”

Panelists agreed that in pursuing a career path the most important thing is to know what you find exciting. Once you determined that, take action, learn about opportunities, get involved, gain confidence, and reach towards your goals!

Anastasia Aksyuk, PhD is a Postdoctoral Fellow in the Laboratory of Structural Biology Research at the NIAMS. She is using X-ray crystallography and cryo-electron microscopy to unravel the mysteries of Herpes Simplex Virus capsid assembly.
Industry: Research and Development

One of the many alternatives to a tenure-track academic research career is to enter into industry in the research and development (R&D) sector. This sector involves a multitude of potential job options bound to suite almost anyone’s interests.

The four panelists had very diverse careers and research interests. Zain Bengali, PhD (a former post-doctoral fellow in the NIAD) is a Research Scientist for Intrexon Corporation; Jack Higgins, PhD (a former NCI post-doctoral fellow) is the Executive Vice President of Translation Research at Molecular Templates; Betina Lew, PhD is a Toxicologist at Procter and Gamble; and Gianluca Pegoraro, PhD (also formally at the NCI) is a Research Scientist at Perkin Elmer. Although the initial intent of this session was to describe the sector and diversity of available jobs, it quickly became clear that the true interest of the audience was to know how to obtain a job in this sector.

Each panelist took a different path to their current position; however, one key piece of advice was mentioned time and time again – networking. Specifically, the panelists stressed the importance of informational interviews and making personal connections. When expressly asked how to balance internet-based job searches with making personal connections, the panelists answered that a balance was necessary. Although having a personal connection helps tremendously, you usually still need to find a job to apply for. Hence, they advised to find a company that aligns with your interests and make a connection with the hiring manager, someone from LinkedIn, etc. In particular, let them know you are interested in learning more about the company. This is important even if there are currently no job postings, as your connection will likely remember you when an opening does become available.

The other key piece of advice was that, for individuals with a PhD, scientific skills are expected. PhD scientists come pre-loaded with a certain skill set; what you need to do is make sure you can identify your value beyond this. Avoid letting academic achievements overshadow other valuable experiences. This was particularly important for Dr. Lew, who had no solid background directly linked to toxicology. To overcome this potential obstacle, she joined a professional toxicology society in order to both showcase her interest and gain valuable connections. In addition to job skills, it is important to be a good fit for the company. To emphasize this, Dr. Higgins specifically asks anyone he interviews why they are interested in working for his company in particular.

Lastly, the panelists addressed the question on how to know if academics or industry is right for you. This question set the panelists apart with a majority stating that they just knew they wanted to go into industry. On the other hand, Dr. Lew stated that you don’t always know what you want, thus it is ok to look into both options and let opportunity be the deciding factor. However, they all agreed that once you enter into industry, it is very challenging to migrate back into the world of academic research—especially without publications.

The panelists provided valuable insights on what it takes to find a job in the R&D sector. In the end, the consensus was that it comes down to you: Can you make the commitment to look for jobs that are a good fit? Can you connect to people in the company and highlight your attributes? If so, then the only thing between you and a great industry job is time.

Sarah Herman, PhD is currently a Postdoctoral Fellow working in the laboratory of Dr. Adrian Wiestner at the National Heart Lung and Blood Institute (NHLBI). She is currently studying pharmaceutical interventions into chronic lymphocytic leukemia.
Do you love science but feel like you never want to lift a pipette again? Then, you may consider all of the work that goes into supporting a PI’s lab to try to envision yourself working with different stakeholders to support those efforts, advises Dianne McFadden, PhD, the Associate Director of the Northeast Biodefense Center at Columbia University. The “Careers in Science Administration Panel” was comprised of five scientists who, for reasons ranging from concerns about work-life balance to excitement about the “big picture”, decided to leave the bench and seek other ways to work in science.

The speakers worked on different aspects of science administration, such as overseeing grants and the review process, working to administer and advance research objectives within universities, and facilitating research for the military. Other common tasks among the panelists were administering grants and budgets, organizing reviews of projects ranging from multilab science centers to R01 grant applications, and addressing the problems that scientists, investors, and policy directors encounter so the science can get done. Some of the panelists, like Stephanie Morris, PhD, a Program Officer at NCI, continue to use their technical knowledge to manage projects within their portfolio.

Moreover, careers in science administration can offer diversity of job responsibilities and mobility between sectors. The panelists discussed career moves between universities and nonprofits, or between grant review and administration, and within each job they had many responsibilities.

All of these careers involve bringing together different groups of people who have an interest in the same overall science goals. For example, Dwayne Taliaferro, PhD, a Science Officer at Battelle, routinely deals with both scientists and military personnel and has to help them successfully interface since they sometimes approach things differently. “It’s essential to be able to communicate without jargon and negotiating skills come in very handy,” claims Shiv Prasad, PhD, Scientific Review Officer from the Center for Scientific Review.

How do you get there? The panelists networked in different ways. Dr. Morris learned of her opening through informational interviews, though she still had to leap the “hurdle” of a USAjobs application. Ginny Cox Delaney, PhD, an Organizational Consultant at the University of California found the path she wanted to pursue after talking with friends whose own careers inspired her to consider science investment in universities. While preparing to make the leap, Dr. Delaney advises to “do the job you want” by participating in extracurricular activities and taking on projects in the lab that demonstrate you can do the needed tasks in your desired career. Dr. Morris reminded the audience that although many of us have useful project management skills from our work at the bench, we need to learn the terminology and make sure these tasks are clearly demonstrated in our resumes.

Careers in science administration offer a wide variety of ways to support science. If the variety of work appeals to you and if you like to bring people together for a common cause as well as to help good science get done, a career in science administration might be right path for you.

Jessica Lamb, PhD is a Postdoctoral Fellow in the Section on Auditory Mechanics in NIDCD. As a biophysicist, she studies the mechanical mechanism for frequency discrimination in hearing, the cochlear traveling wave. Outside of the lab, she spends most of her time mothering two beautiful girls, and she loves to read and write.
Careers in Science Education

Are you interested in teaching? Would you like to start a science education program to engage the public? Do you want to help postdocs or grad students develop and acquire what they need to succeed?

This year’s the Science Education panel consisted of two traditional educators, Jeanne Deslich, PhD, a Science Teacher at the private K-12 Maret School, and Johns Hopkins University Lecturer, Kathryn Tifft, PhD. It also included two non-traditional educators, Julie Edmonds, PhD, the co-Director at the Carnegie Academy for Science Education, and Ben Dubin-Thaler, PhD who started his own “mobile science lab” the “BioBus”. Finally, James Gould, PhD is the Director of Postdoctoral Fellows at Harvard Medical School and helps fellows get the training and information they need as they prepare for life after their postdoc. The advice all of the panelists emphasized was the importance of being able to get people excited about science, and to have the ability to work well in a team.

When asked about the necessity of doing a postdoctoral fellowship, the consensus was that they were generally useful, although not required at the high school level. A postdoc can provide the opportunity to gain additional skills and to take advantage of non-research opportunities available. If you are interested in a formal teaching position, guest lecturing and journal clubs are a good place to start. However, Dr. Tifft was adamant that to really be prepared and competitive, it is much better to have taught a full course so that you have experience planning and developing curriculum.

If you are interested in alternative science education programs, then start working on your grant writing skills! Most or all of the finances for alternative programs come from private and public grants. Indeed, Drs. Dubin-Thaler and Edmonds recommended applying to as many local small grants as possible, after developing a plan for a program. Local granting agencies will be more in tune with what can be accomplished for the community, and with enough of them, a program can be started. Also be sure to collect data on the program’s impact, since these data will be invaluable when you are ready to apply to larger foundations or federal granting agencies.

What about the practical concerns of getting into science education? The panelists were clear, salaries vary with the institution and location, but expect ~$10,000 less than what you would have in a tenure track line of work. For alternative education, the range is a bit more variable, but will also be lower than tenure-track positions. As for job security, a year-to-year contract can be common and may not sound secure to those of us accustomed to the idea of eventual tenure. However, Drs. Tifft and Deslich assured that job turnover is generally low. Dr. Deslich advised that “making your-self invaluable” is the key to job security.

In this era of striving to improve STEM education, these panelists exemplified a new approach to science education. They talked about collecting and analyzing data on the effectiveness of their teaching and their programs to determine what works and what doesn’t. Using the analytical and critical thinking skills that scientists develop, we can introduce more effective tools of how we teach science and train scientists.

It was clear from listening to the panelists that science education wasn’t just a job for them. These careers are for passionate people trying to improve the education of the public and the next generation of scientists.

Carol Taylor-Burds, PhD is a Postdoctoral Fellow at the National Institute of Neurological Disorders and Stroke. She studies the cellular physiology of Gonadotropin-releasing hormone neurons in the laboratory of Dr. Susan Wray.
In the scientific arena, it is important to be creative, perseverant, analytical, critical, and resourceful. In addition to all of those skills, it is necessary to communicate your science to very diverse audiences. But, what if you are interested in communicating other scientist’s findings instead of your own? How would this kind of job be like? Would it be an exciting job?

All the panelists agreed that the type of tasks they tackle at their jobs is different everyday. Sophie Bolick, PhD, a Medical Writer at MedThink SciComworks, can be writing about infectious diseases such as the flu one day, and about the most recent findings in oncology the next. “My desk can be full of papers every day,” Dr. Bolick said. She added that “this can be a little challenging but it is also exciting as it makes my days a continuous learning experience.” Vanessa McMains, PhD, a Media Relations Representative at Johns Hopkins School of Medicine, agreed that her days were very diverse. Dr. McMains is dedicated to promote basic science research at the university environment by writing press releases, using multimedia, reaching out to the public through social media, and even sometimes escorting visitors into the University’s hospital. She added that her work-days can be very miscellaneous and they definitively require good management skills.

Writing about diverse subjects is an important part of the job in scientific communications. It can be challenging at the beginning, for example, if you are a science journalist writing about topics that you barely know. However, you will become an expert with practice. Sandeep Ravindran, PhD, a Science Writer at the Proceedings of the National Academy of Sciences (PNAS), encouraged participants to volunteer to write and edit. He and the other panelists also recommended doing short internships such as the one offered by the AAAS in massive communications, or the NCI’s Health Communications Fellowship, among others.

“Science Communications is not only about writing,” added Ranjini Prithviraj, PhD, a Managing Editor at the American Chemical Society (ACS). Her job is to manage the day-to-day activities of the ACS journal and represent it at conferences. She oversees the high quality content of the ACS journal and ensures that is published consistently and on time. As a managing editor, she works with people with different backgrounds at her office, in conferences, or through the phone. She added that having good management and people skills are pivotal to be successful in the field.

The panelists had a common denominator in the way they found their jobs: through networking and by having a steady writing interest. All of them took the challenge to write while they were postdocs and/or graduate students by volunteering as writers or editors in their institutions. Additionally, all of them recognized that opportunities come by through networking, and, indeed, two of them found their jobs through their LinkedIn connections. They also recommended finding the time to do as many informational interviews as possible, in person or by phone.

The panelists agreed that an exciting portion of their jobs is that they are learning much more while they are writing. Moreover, they mentioned that they found a better life-work balance than when they were postdocs. Working hours are predictable and not the crazy hours working at the lab: No feeding cells on Christmas day!

If you get excited about writing and editing, you enjoy learning about different scientific topics, and would like to have a better life-work balance, this would be an exciting area to explore and grow in your career.

Tania Lombo, PhD is a Research Fellow in the Office of Global Research at NIAID. She did her postdoc with NCI-Frederick in Retrovirology, and she was a Communications Intern at the NIH Catalyst. Now, she is using her scientific training, analytical, management, and communications skills to contribute to the Global Health efforts on infectious diseases and cancer at NIH.
Careers in Science Policy

Science policy careers meet at the intersection of science and the public. This career path is ideal for scientists wanting to get away from the bench, who enjoy communicating science to the public, and would like to use their scientific knowledge to influence decision-making. Science policy careers span the spectrum of job sectors including federal and state governments, universities, industry, and scientific societies. If you have an advanced degree in science and have developed ‘soft skills’ like excellent communication and critical thinking, you may want to consider a career in science policy.

The panel was a great example of the diverse careers available under science policy and each offered a unique perspective on how to transition into this field. Sandeep Dayal, PhD is a Health Science Policy Analyst at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). His position involves providing information to policy-makers and making scientific discoveries funded by NIDDK understandable to non-science audiences. As an NIH postdoctoral fellow, he developed many non-bench skills such as non-technical writing, leadership skills, and networking that readied him for his current position.

Anne Deschamps, PhD is a Senior Science Policy Analyst at the Federation of American Societies for Experimental Biology (FASEB). She manages policy committees and develops policy statements requested by specific areas of the government. As an NIH postdoctoral fellow, she obtained a six-month fellowship in FASEB’s Office of Public Affairs that led to her current position.

Amanda Arnold, MSc took a somewhat non-traditional pathway to her current job as a Senior Policy Advisor for MIT. She obtained a master’s degree in science and technology policy and after graduating, she obtained legislative experience by working on Capitol Hill. Currently, she works to encourage lawmakers to support NIH funding and facilitates relationships between the faculty at MIT and key members of Congress.

Daryl Pritchard, PhD is the Director of Policy Research at the National Pharmaceutical Council. Previously, he had worked in various policy positions and he credits the network he built over the years as vital to obtaining his current position. However, his transition from the bench into science policy started with the Genetics and Public Policy Fellowship, which he described as “the best decision I’ve made in my career.”

What are the necessary skills needed in science policy? The unanimous answer was non-technical writing and effective communication skills. All panelists recommended gaining experience in non-technical writing. Dr. Pritchard suggested getting involved in graduate school or postdoctoral organizations. Writing for one’s local school or current organization’s newsletter is also an excellent way to practice science writing for non-scientific audiences. Similarly, Dr. Deschamps suggested seeking writing opportunities within scientific organizations, especially those that have a public affairs office. Ms. Arnold, who currently writes a blog on science policy, recommended blogging as a good way to develop writing skills and showcase one’s interest in current policy issues.

What is the best way to transition from the bench to a career in science policy? Panelists highly recommended applying for one of the numerous science policy fellowships. The most versatile and coveted fellowship is the American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellowship. Fellowships are designed to train scientists in policy work, create an invaluable network of policy analysts, and often lead to a permanent job opportunity. If you are an NIH postdoctoral fellow, another option is to obtain a detail within one of the policy offices at an NIH institute.

With a career in science policy, scientists can use their knowledge and expertise to influence the trajectory of scientific research. Developing key skills and applying for science and technology fellowships are excellent ways to nurture a budding policy career.

Tara Burke, PhD is a Postdoctoral Fellow in the laboratory of Dr. David Clark in the National Institute of Child Health and Human Development (NICHD). Her research focuses on understanding nucleosome structure and positioning in yeast. She received her PhD at the University of Virginia where she studied epigenetic regulation of gene transcription.