"Having a PhD Is Seen as a Strong Asset When Being Considered for Hire as an Intellectual Property Attorney"

Anastasia Greenberg

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Abstract In this interview, we hear about Anastasia Greenberg's path in pursuing a law degree after a PhD in systems neuroscience. Differences in intellectual property (IP) law in Canada and the USA are discussed, as well as the value of "soft skills," particularly communication. Practicing IP law can be surprisingly liberating and provide freedom to champion innovative projects that you believe in. A PhD at some IP firms is a requirement for being hired due to the technical and scientific nature of the work. Anastasia ends by discussing how both academic and alternative career paths are risky endeavors—a PhD is only the beginning.

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Chris: Can you introduce yourself and tell me a bit about your current position?

Anastasia: My name is Anastasia Greenberg, and I am currently an associate attorney in the Intellectual Property Department in the Boston office of a "big law" firm. Our department consists of attorneys with "hard-science" backgrounds, many of us holding graduate-level degrees in fields such as chemistry, biology, electrical engineering, computer science, and the like. As a team, we work on intellectual property matters for our STEM-focused clients that include large companies such as big pharma and tech giants, startup companies, nonprofit organizations, and universities.

In my role, I engage in diverse sets of intellectual property tasks. I support clients with something we call "patent prosecution," which essentially involves writing new patents and making revisions as needed to obtain issued patents at the United States Patent and Trademark Office ("USPTO") and internationally as well. This work involves meeting with scientists and engineers to learn about the field of work and the inventions at hand, writing the patent (which is technically a patent application until it becomes a granted patent) including preparing figures, and corresponding with examiners at the USPTO when they issue rejections (e.g., conducting formal examiner interviews during which I present arguments as to why the invention claimed in the patent is useful and novel, while listening to the examiner's perspective and answering any questions the examiner may have to).

I also support clients with diligence work, which includes comparing existing patents owned by a competitor to a client's current or future technology to identify whether there is significant overlap and, if so, working on a strategy to support the client with challenging the validity of the competitor's patents, determining whether there are strong arguments that the client's technology does not infringe the patents, and/or supporting the client in finding ways to "design around" the patents to improve their technology and shift their focus away from their competition. Another aspect of my role is to perform landscape and competitive intelligence analyses, which involve searching and analyzing the patent and scientific literature within the client's technical field to identify "white spaces" where the client could focus new research and development efforts to differentiate themselves from their competitors through meaningful innovation.

Another major aspect of my work is patent litigation. In some cases, patent rights are disputed in court. Patent litigation is very complex from both a legal and scientific standpoint. It involves, for example, working with scientific/technical experts to understand the technology at issue inside and out, conducting expert depositions (i.e., obtaining sworn evidence), making sense of vast amounts of scientific/technical documents that will be presented as evidence, conducting legal research, preparing formal written arguments that are to be filed with a court or administrative body such as the US Patent Trial and Appeal Board, presenting on the litigation strategy to the client, and preparing for oral court hearings including holding formal "mock trials."

In terms of the specific scientific and technological areas that I work in, I currently have a diverse practice within the general life sciences space. About half of my work currently focuses on therapeutics. Therapeutics, biology in the biologics category such as nucleic acids, peptides, antibodies, large proteins, as well as drug delivery systems. The other half of my work is in the medical device space including molecular diagnostic systems and implantable heart repair devices. Engaging in such a diverse array of fields means that I am constantly learning on the job and no 2 days are the same. I am a lifelong learner, and my current role helps to feed my desire to constantly challenge myself intellectually and professionally.

What was the focus of your PhD?

I completed a PhD in neuroscience between 2011 and 2016 at the University of Alberta in Edmonton, Canada. My research was in the field of systems neuroscience and the neurobiology of learning and memory. More specifically, I investigated the role of brain activity during slow-wave sleep in "memory consolidation," which is the process by which memories become strengthened for long-term storage. My work was data analysis heavy involving signal processing analyses. My field was extremely interdisciplinary as it required a deep understanding of molecular/cellular physiology, as well as network-level physiology, the former falling within the biological field and the latter falling more within the fields of physics and electrical engineering. It is thanks to this interdisciplinary training that in my role today I am able to comfortably traverse both life sciences and technology/engineering-focused work (such as in the medical device space).

As you were finishing your PhD, what were you thinking about your career plans?

Near the end of my PhD, I first thought about pursuing a postdoctoral position. I initially started my PhD with the hopes of becoming a professor and a full-time researcher. However, I began having doubts about the academic career path for

various reasons, and I became curious about careers outside of academia. I had a chat with a friend one night at a cafe who was also a PhD student at the same university, and he suggested that I consider a career in patent law. My initial reaction was that I would not be able to survive another 3 years of additional education. However, that friend ended up planting the seed that night, and eventually I decided that I would apply to law school. I began law school about a month and a half after I defended my dissertation.

Can you tell us a bit about what day-to-day life is like in your current position?

Although every day is different, my typical day starts with logging onto my computer to check my emails (of which there are usually way too many). I then look at my work calendar to see what meetings are scheduled for the day, and I also review my to-do tasks, which I usually keep in a living Word document that I update daily. My "quiet" work tasks for the day include perhaps doing some research on a specific scientific or legal issue; revising patent application drafts, memos, or formal written documents after receiving feedback from more senior team members; corresponding by email with team members such as other attorneys, paralegals, or my legal assistant or with clients; reading patents or scientific papers to prepare specific analyses; and preparing PowerPoint presentations for either internal or external (client) audiences depending on the issue at hand.

My independent work requiring concentration and quiet time is balanced by more social aspects of my job. I typically have at least 2 hours worth of internal meetings on any given day with other team members. At such meetings, we discuss updates on our work on the given client project, plans for building out our strategy, and next steps, and we will make collective decisions on key issues. In any given week, I will meet with many different individuals across different internal teams since we build each team for each client project based on relevant technical expertise and availability. On some days, perhaps 2 to 3 days out of the week, I will also have client meetings. Before the pandemic, clients would sometimes come to our office for meetings in which case we would book conference rooms or we would sometimes visit our clients at their place of work, for example, on-site at their biotechnology company. At client meetings, clients will typically prepare presentations to update us on their research and development results and future plans, or we will prepare a presentation to, for example, teach them about key patents that their competitors own and collectively make decisions on potential solutions.

In the middle of a typical workday, I head down a few floors of our office building to eat lunch at our firm's cafeteria, which has a fresh menu that changes daily. Some days we have a training or networking event during lunch.

What do you like most about your work?

There are many things that I like about my work: the independence that I am afforded, the high-level intellectual work that I am expected to constantly produce, the collaborative nature of my work, the ability to be mentored by team members who are at the top of their games, the ability to act as a mentor to others, the diversity of tasks that I engage in, and the career/job security that I have.

However, if I am asked to choose just one favorite part of my work, it is hands down the variety of scientific topics that I get to work on. I am constantly learning and working on new areas of science and technology. As an undergraduate student, I chose to study science because I loved science broadly, and I thrived on learning new topics and selecting a diverse course load for each academic semester. When I entered the latter years of my PhD program, I realized just how specialized I was becoming and how little I actually knew about other areas of science outside of my niche field. Now, I am able to once again indulge in a large buffet of scientific and technological offerings.

And what do you like least about your work?

Life is full of double-edged swords. My favorite part of my work—the diversity of scientific topics that I work on—inherently births the least favorite part of my work: my lack of direct contribution to research and innovation. Since I support clients working in diverse areas of research and development, my clients are the experts in their respective niche fields, and I am a generalist who does not contribute to their research in a hands-on way. Of course, the advice that I provide affects the course of my clients' research and development and business outcomes in a tangible way, but I do not participate in the undertaking of the research efforts themselves.

However, there are ways within the career path of an IP attorney to get closer to the science. For example, some IP attorneys choose to work in-house at a company or research institute, instead of at a law firm. Most IP attorneys who choose such a path usually transition from a law firm environment into a company after several years of experience working at a law firm. This is because law firms are seen as stepping stones to other career paths given their strong records in training junior attorneys. In-house IP attorneys work closely with the research and development team and can become an integral part of the innovation efforts. In this manner, an in-house IP attorney lives and breathes a niche technical field, much like an academic scientist would. I have also seen some IP attorneys pursue less traditional roles, such as taking up a position as an executive of a startup or more established company, or at a venture capital firm that invests in life sciences companies. Such roles can open up a variety of creative ways to use skills acquired through obtaining both a PhD and law degree.

How do you think having a PhD has helped you succeed in your current position?

Having a PhD is seen as a strong asset when being considered for hire as an IP attorney. At some intellectual property boutique firms (but definitely not all), a PhD is a minimum requirement for hire. Scientific and technical training is critical for my career path. I read technical documents and deal with technical issues on a daily basis. That is the heart of my work. If I do not understand my client's science/technology, I cannot write a patent application, I cannot provide advice on how to differentiate from a competitor's technology or why a competitor may be infringing my client's patents, and I cannot build a position on how my client's technology could be adapted or implemented in ways that are novel. All of the legal issues and arguments that I deal with are based on a scientific and technical understanding of the subject matter that I work on, and the subject matter is always a scientific/technical matter. That is not to say that there aren't brilliant IP attorneys who do not hold a PhD; however, since this interview is meant to highlight career paths for PhD graduates, I would emphasize that a PhD is not going to be wasted in an IP career path.

If someone currently finishing their PhD was considering a position similar to yours, how might they decide if it would be a good fit?

The role of an IP attorney is heavily focused on "soft skills" such as strong communication skills, in addition to the scientific "hard skills." Someone who is thinking about a career in IP should consider whether they are interested in completely leaving the bench behind to work in a leadership and support role for scientists and engineers. In my work, I have to do a lot of reading, writing, and speaking, whereas during my time in academia, those tasks took a back seat to lab work and data analysis. Personally, I knew that I preferred a role where I could learn, think, and speak about science without getting my hands dirty, if you will. On the other hand, some people really enjoy hands-on scientific work, and for those people, I would recommend a career as a scientist or engineer at a company as an alternative career to academia; these are the very scientists and engineers who I have the pleasure of learning from and working with as their company's IP attorney.

If someone was interested in pursuing a similar career path, what would you suggest they do to better prepare themselves?

The best first step is to reach out to currently practicing IP attorneys in your jurisdiction of choice (i.e., the country in which you plan to work) and ask them questions about their career path and everyday life on the job. Since you are thinking about entering a communication-focused profession, it is excellent practice to start networking as early as possible. You can try to reach out to current IP attorneys on social media platforms such as LinkedIn, attend relevant events at your current educational institution (e.g., check to see if there are open events at your local law school focused on IP), and even find IP attorney profiles on law firm websites and email them directly. In the professional world, it is customary to connect with new individuals. A stranger is a professional contact you haven't yet made.

The next thing to do would be to assess the status of the IP market in your own country. Since patents are not equally distributed across the world, some countries with a larger proportion of local patent application filings may naturally have more opportunities for IP attorneys. In addition, the IP market in a given country may be biased toward a specific technical field, depending on the dominant local industries. You will be able to get a sense of some of these issues through engaging with your new professional contacts.

Following an initial market pulse check, the next logical step would be to figure out the concrete milestones that you need to achieve before being qualified for hire as an IP professional. In the US, a common path for IP attorneys with PhD degrees is to start working as a patent agent at a law firm (either a general practice firm with an IP department or an IP boutique firm). This is a highly advantageous path as it allows one to try out IP law straight out of a PhD program without having to commit to the pursuit of a law degree. Many firms will allow someone to work as a patent agent for a year or two before asking them to apply to law school. Many firms will also pay the tuition for the patent agent who will typically work a reduced hours schedule at the firm while attending an evening law program. After completing the law degree, the patent agent would write the bar examination in their state and become an IP attorney (or patent attorney).

On the other hand, in Canada, it is almost unheard of to be hired as a patent agent and have an employer pay for a person to attend law school on a part-time/evening basis (at least I have never come across such an example). Instead, a person who finishes a PhD and wants to become an IP attorney would attend law school on a full-time basis and apply for employment at the same time as the rest of their law school cohort. The advantage of this path is that you don't need to juggle a

high-pressure job and a high-pressure academic program simultaneously. It allows you to focus on your legal studies while getting to know employment options through formal employment recruitment that takes place at law schools. Given that I completed my legal education in Canada, this is the path that I pursued. I accepted the offer with my current firm over a year before graduation, which is unlike PhD programs where you likely won't have an idea of your next steps until much closer to graduation.

I completed my law degree in Canada but was to sit for the bar examinations in the US. This is another point for you to consider—depending on your jurisdiction, your employment options will differ as different countries have different rules on transferability of law degrees.

A lot of people like academia because they feel it gives them an opportunity to work on a topic that they deeply care about. Do you think this is also true in your current position?

Yes, definitely. This is one of the largest misconceptions about the academia/non-academia dichotomy. I too fell prey to the unchecked assumption that academia equals intellectual freedom while a career outside of academia equals "sell your soul for money." This could not be further from the truth. For example, even though I am a junior attorney, I get to choose my projects. I have a practice manager who is responsible for ensuring that my practice includes all of the types of work that I want to be building my practice around and as little as possible of that which I am not interested in pursuing. To some degree, there are limits on the options, which are set based on the work that is currently available and where there may be pressing needs. That being said, I have a lot of control over my career on a daily basis. Nobody breathes down my neck, and I define the shape and form of the final work product that I deliver to a client, with invaluable input from more senior team members.

I feel more liberated and have more agency now than I did as a graduate student. As a graduate student, I had one boss, my supervisor. Now, I no longer have one boss, and instead I am a part of many teams, working in a collaborative manner.

Even though as a professor you can work on a topic that you deeply care about, your freedom gives way at least to some degree to constraints such as whether you can get a certain project funded, whether you have the right graduate students to undertake a certain project, the current appetite of academic journals for particular types of research, and most importantly whether you will make tenure.

In addition to being able to work on a wide variety of topics that I care deeply about within my standard everyday work, I still have the freedom to contribute to academic scholarship and community outreach as well. Some IP attorneys juggle client work with writing scholarly articles, teaching university courses, organizing

conferences, supporting junior attorneys through mentorship programs, leading professional societies and associations, and participating as members of a host of boards and committees.

Based on your journey, what advice or suggestions do you want to pass on to someone who's currently finishing their PhD?

My suggestion would be to ask yourself what factors you considered and what steps you have taken to evaluate your career options. In my personal experience, I found that most PhD students have only ever received career advice from their supervisor(s) and other academics. It makes little sense to receive advice solely from someone who has never built a career outside of the academic system, so it is important to cast a wider net when asking for advice. Also, consider that if you yourself have never had a career outside of academia, whether you're naturally gravitating toward what is familiar to you. You owe it to yourself to apply the same kind of systematic methodology to choosing your career path that you apply to your scientific research.

When it comes to scientific research, if you take big risks, you are more likely to fail. However, if you don't take big risks, you won't arrive at groundbreaking discoveries. The same logic applies to your career choice. You are just at the beginning of that journey when you've completed your PhD.

Thank you for telling us about your career path and perspectives, Anastasia!

The content of this interview reflects my own views and does not reflect the views of any organization with which I am currently, or have previously been, associated with.