

Introduction

Welcome from Eric Staeva-Vieira

Eric Staeva-Vieira: Good evening everyone. Thank you for coming to this event. This is our second career seminar for the Science Alliance. I want to introduce myself first. My name is Eric Staeva-Vieira, and I am the new program manager for the Science Alliance. I am sure I will get to meet all of you in the coming year, and hopefully I will hear from you comments about how we are doing, because this program is meant for you. If you can give me your comments and let us know how we are doing that would be great.

First, I would like to introduce the CEO of the New York Academy, Ellis Rubenstein. He will say a few words about what we are doing here. Ellis?

Welcome from Ellis Rubenstein

Ellis Rubenstein: Good afternoon. Thanks, Eric. I won’t take much time from this event because it is more important for you to learn about IP issues than to hear from me. I imagine some of you did not come to our first-ever event a month ago at the NYU Medical Center. This is going to be a movable feast that goes around the city on different topics, and we are very glad to see you coming to this one.

I want to mention that, as some of you may know, I was editor for a decade of Science magazine. While there, we created Science’s Next Wave, which some of you have hopefully used. If you have not, please go to www.nextwave.org, because it is a very valuable career Web site, giving mentoring for graduate students and postdocs. It is globally useful. While we were at Next Wave thinking about what would be valuable to graduate students and postdocs, it became fairly clear that all of you could profit from and would enjoy career mentoring that your professors perhaps do not have the time to do for you. When we came up here to the Academy and thought about how we could rejuvenate the Academy, and bring young people back into this 186-year-old academy that Thomas Jefferson and Charles Darwin and Einstein were members of, we thought that perhaps one of the most exciting ways to do that would be to create career issues for you, events and networking opportunities. As you probably know, we now have an alliance that goes all the way from Cold Spring Harbor in the East to UMDNJ in the South. Soon Princeton is going to join us, and Yale is joining us in the North. We have the opportunity for all of you to network
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every month, and we will give you the opportunity to network on our Web site on a regular basis as we build the Web site. It is still young and Eric is going to do exciting things over the next months for you.

Finally, I just want to mention that as a substrate for this meeting you might think of the fact that there are not only the group of you that are here who are going to profit from this, but thanks to our alliance with Columbia's Digital Knowledge Ventures group, which are among the pioneers in creating distance-learning experiments and opportunities, we are going to try to create a digital record of this event. We already have a very interesting client, if you might call it that, for the record, which is the Max Planck Gesellschaft, the famous institute in Germany that is a huge, as you know, employer of postdocs. The president of the Max Planck thought that this was a very dynamic program and has asked us to see if we can provide as collaborators ideas and actual events like this for their postdocs. That is one way for you to realize that this is part of a global family of activities, and you are going to be eventually linked to young people all over through these kinds of activities.

Two other things I will mention quickly. One is that we have discovered that other countries, in fact the entire European Commission, is interested in this, in the sense of having an opportunity to bring their job opportunities and study opportunities before you. We are going to have a very exciting event for graduate students and postdocs from the European Commission in December. If you keep your eye on the Web site you will hear more about it. The Chinese are also interested in trying to convince some of the best and brightest of their Chinese-born scientists to come home, and they are going to presumably want to give you opportunities that might tempt some of you to come back. I think this is a nice collaboration.

Finally, I want to mention that in the audience is a small team from *Nature*—the magazine of course, the famous journal *Nature*. They are the folks that work on *Nature* Jobs. We are likely to have a collaboration with them so that you have the best information on jobs available through *Nature*. They intended to bring some materials, but they have gotten lost somewhere, but I am sure they are around and if the *Nature* folks can raise their hands, there they are over here. If you are interested in talking to *Nature*, feel free after this, during the reception. I am sure they would be happy to. It gives us another opportunity to bring some interesting information to you.

Having said that much, I am going to turn the podium over to Eric again. I am going to be here during the reception period, and I would be happy to talk to any of you if you have questions about the program. We look forward to having you join us every month. Thanks.
NYAS Web Resources

Eric Staeva-Vieira: Ellis alluded to the Web site, so I want to point you to our backdrop here. You can get to that through our home page at www.nyas.org and link to the Science Alliance Web site from there, our home page. I would recommend you all visit it and take a look at it. It will be going through some changes in the next few months.

One thing I would like to point out is the Academy E-Briefings, on the bottom. Today will be the launch of the interviewing Beyond the Ivory Tower workshop that we had at NYU. Now you can get information about that seminar, if you were not able to attend or attended and missed some of the information. We have that up and available for you, so please visit the site and see how it is. You will go through the mock interview, see what the comments were, and we have also provided a lot of new resources from our partner sites.

Without further ado, I would like to start tonight. First I would like to thank a few people who helped organize and put this together. Dean Rich Kiesen and staff at the Columbia University Health Science Center were our collaborators here on this program. We also have to thank Peter Renee and his staff at Alfred Lerner Hall for providing us the facilities, and the DKV staff for filming this event and putting together our next e-briefing.

With that I would like to introduce our panelists here for you and get onto the issues of IP and IP careers.

I would like to start by having each one of our panelists describe a little bit about themselves and their development in this career option that they have chosen. We will start with Rahul.
Speaker Introductions
Rahul Aras

Rahul Aras: My name is Rahul Aras, I work at the Cold Spring Harbor Lab Office of Technology Transfer as a licensing associate. I guess we just have a couple of minutes to explain what we do, so I will summarize as much as I can and I will focus on IP because technology transfer is a diverse field.

As far as IP goes, our focus is to protect the University intellectual property through patents. The usual procedure involves scientists disclosing inventions to us, then we assess the commercial potential of those inventions, and determine what the best path to take is, as far as filing for patents, and then we call of one these guys and they will tell you what they do.

Once the patents are filed, we go through a process of marketing and commercializing them through licenses. That basically summarized a lot of things in a sentence, but the thing to keep in mind about the field is it opens avenues to a lot of different areas. There is a focus on intellectual properties, since that is basically the currency we work with, but there are also leads to business development, venture capital, and other areas that all stem from the concept of taking intellectual property and commercializing it.

So how did I get here? I do not know. I did my Ph.D. at NYU and I just finished up last year. In the midst of my Ph.D. I had an idea that I wanted to, as most of you probably do, move away from the bench somewhat, and I started to look into different career options that were available. NYU has a nice internship program through the Office of Technology Transfer, and so I joined that, I think in my second or third year. It was a great experience, because, like I said, it gave me exposure to a lot of different areas. It put me in communication with lawyers and business-development people at pharmaceutical companies. Not only was I working with them, I was networking with them to get an idea of what fields were interesting.

Upon graduating, I then with an open mind looked at a lot of different job opportunities that were available. I ended up at the Cold Spring Harbor Lab Technology Transfer Office for among different reasons. It was a small office that afforded a lot of opportunity, and I wanted to give myself options to keep learning and developing my career.

I think if there is one thing that was important to me throughout the whole process,
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it was getting started early. I get a lot of calls from friends who tell me that they graduated last week and now they are thinking about going to law school, and I tell them, "Well, it is going to be a year or two procedure then, because there is preparation that takes place in these things and the job market in this area is becoming more competitive. You need to have some idea of how to process works and some background." I guess everyone here is on a good start since they are here and they are trying to get some information, I guess that is a view of what I do.

Anna Lövquist

Anna Lövquist: I hope everyone can hear me. My name is Anna Lövquist—actually I am a Lövquist in my original language. I am originally from Sweden. I have made a couple of switches in my life. I got my Ph.D. degree in Sweden, and then I got the offer of doing a postdoc here in New York at Sloan-Kettering. After two years, I felt like academia was not a place for me to stay. I was in nuclear medicine, which is not really the kind of job where you can get a job in a pharmaceutical firm or something like that. I talked to the father of a friend of mine who worked in law who had heard that some law firms hired people like me, disillusioned scientists. I interviewed at a law firm called Darby and Darby, and that is where I have been now for four years. I am a scientific advisor. If you work at a law firm you will sooner or later be required to take this patent-bar exam, as it is called—it is something for which you only need a technical background to sit. It will give you the license or the authority to prosecute patent applications before the governmental office, the U.S. Patent and Trademark Office.

If you are a foreigner, like me, and you do not have a green card—that is a permanent work permit—this might be trickier than you might think, so I am going to give you advice now for those of you who have not married an American. My patent law firm did not have a problem with me being a foreigner; they are used to dealing with all kinds of lawyers, and immigration lawyers are one kind of them. In the original visa it has to say that, upon passing the patent bar you are supposed to prosecute patents before the U.S. Patent and Trademark Office. That little sentence is going to save your firm I would say four to five thousand dollars, and it is going to save you a couple of years before you can sit for the patent-bar exam. The Patent Office will only allow you to sit for the patent-bar exam if it says in your visa that upon passing it you will prosecute patent applications. That slowed me down.
Once you have taken that patent-bar exam, you cannot call yourself a patent agent. You only get a limited recognition to prosecute applications, to prepare applications for the particular place that is sponsoring your visa. Being a foreigner in patent law is tricky, but at least for me I still think is worth it. I am happy doing what I do.

As for what I do during the day, I mostly work with preparing patent applications and then prosecuting these applications—that is, to communicate with the Patent Office, to argue that this invention and this patent is the best thing since sliced bread. Another part of what we do is get involved in all kinds of projects working with the attorneys on diverse things such as evaluating patent portfolios and companies, or more business-oriented projects. This takes up some of my time.

Richard Bork

Richard Bork: Hi. I got my Ph.D. in 1988 from Vanderbilt University, and then I went out to California for several years and worked at UCLA as a postdoc. Like Anna, I saw the light, so to speak, or at least a change in my future. I moved back east to New York, where I started working at another law firm here in Manhattan, Morgan and Finnegan, which is where Ken is working now. I worked there as a scientific advisor by day and went to law school at night at Fordham University up at Lincoln Center. I graduated from there in 1997 and continued to work at Morgan for several years as an associate before I went to my present position at a company called Novo Nordisk Pharmaceuticals, Inc., which is the U.S. affiliate of the Danish company Novo Nordisk.

This is a midsize-to-small company that is primarily known for its drugs and devices in the diabetes field. The department that I work in here in the U.S. is rather small—there are five patent attorneys—and the way we are set up at Novo is that we are assigned specific project areas in which you handle everything from the initial patent application filings, when the early R&D and discovery is being done, through what we call "freedom-to-operate analysis." As the project moves along and you get a clearer idea of where this product is going, you start evaluating patents that other companies hold and you make sure that you believe that you are able to continue with your product without infringing somebody else's patent, and having that act as a potential block to marketing.
Once the product is approved and you get regulatory approval, you are responsible for any licensing issues that may come up during the course of the project; you are also responsible for handling any litigations in terms of managing outside counsel. That set-up is a very satisfying one because I find that you get a lot of involvement, not just with the research people, but you also are involved a lot with the business people, even with the marketing folks, and people in the licensing division. You have the real opportunity to get your hands into a lot of different areas within the company and get exposed to a lot of different areas.

Another advantage that is perhaps unique to the situation I am in is that since it is a U.S.-based company for a Danish affiliate, or for a European-based parent corporation, is that there is the opportunity to travel. I am able to go to Denmark probably four or five times a year, so there is a fairly constant communication with the people in the parent company in Denmark.

Donna Rounds

Donna Rounds: My name is Donna Rounds and I am currently an associate director at Science and Technology Ventures here at Columbia University. It is the technology transfer and licensing arm, as well as the venture and start-up arm at Columbia University.

I got here because when I was finishing up my Ph.D. at Yale University, I realized that nearly everything I did or started to do could now be done by a machine, and it was a bit of a surprise to me. I started looking around and I started networking. I would meet one person either at a patent law firm or at a pharmaceutical company, I would get a name, I would work my way through, and I met lots and lots of people.

At one point one person called me back. This was at the time the CEO of a company called Cadus Pharmaceuticals, which exists in a very small way now with its intellectual assets owned by a different company. He asked me to look into a particular project. I looked into that project and we managed to start a company around it, a little company called Physiome Sciences. I was at Physiome Sciences for seven years. At the beginning it was me in an office with brim burn, that is, a person who wears many, many different hats doing everything, and I bootstrapped my way up into learning things. I took the patent bar, I did lots of things, worked with lots of attorneys and learned how to do things. After seven years and we raised seventy million dollars, and we had hired seventy people.
I left and joined a company called British Technology Group. British Technology Group is specifically an intellectual property development and commercialization firm. What they do is not only start up companies, they also look at very early stage and mid-stage technologies, they evaluate them, they develop them, and then they commercialize them. I was basically on the buy side there.

I was there for about a year and a half, almost two years, and then my son was going to go into kindergarten and I decided it was time to stay in New York City and not travel so much. I happily joined Science and Technology Ventures and, as was explained earlier, we are involved in protecting the intellectual property of the University, looking to do start-ups, helping professors evaluate what their technology is, what their technology is worth. I think it is a valuable thing that universities can do, thankfully due to the Bayh-Dole Act of 1979 and 1980, which gave universities that right.

Kenneth Sonnenfeld

Kenneth Sonnenfeld: I am Ken Sonnenfeld, and I am a partner at Morgan and Finnegan, which is an intellectual property firm here in Manhattan of about a hundred professionals, which includes attorneys and scientific advisors, who typically are patent agents. My career began back at Columbia; I got my Ph.D. in the department of pharmacology uptown. I then did a postdoc at the Roche Institute of Molecular Biology. After that I went to Mount Sinai School of Medicine and became a research assistant professor in the neurology department, doing basic research on neuronal development.

I had always had an interest in law and science and how they come together, and while still at Sinai I actually started law school at night. With my graduate student, it was sort of an interesting give-and-take. Around five-thirty I would say, "Gotta go, gotta go to class," and then we would go over the experiment the next day, which did not always work out for either one of us.

Then I also realized that taking as long as it had for me to go through graduate school, postdoctoral training, and four years at Mount Sinai, if I was really going to change careers it was better off to be in that career. So I started working at a law firm where I became a patent agent, and then when I graduated law school, I came to Morgan and Finnegan where I have been since 1990.
As a patent attorney it has been a lot of fun, because some of the academic questions that you dealt with as a scientist—for instance, I used to look at how tightly a hormone is bound to a receptor—looking at intellectual property, we had a real interest in that, if someone had a patent which gives someone a right to exclude others from practicing the invention. We were looking at a product that was on the market in all sorts of drug stores, to see how tightly the antibodies bound to the hormones in a pregnancy kit. It was fun to actually get to some real-world questions in the patent for intellectual property in a field that, as a scientist, were interesting and were important, and you wrote about them and helped describe the mechanism. It is also fun to see the real-world application of that.

As a lawyer I have been involved in various litigations, including the litigation against American Cyanamid, where Estelle was, involving a pediatric vaccine. I have been involved in litigation representing Novo Nordisk, involving the expression of growth factor and the patents asserted by Germentac. I am also involved in patent prosecution, which is procurement of patents and licensing and providing counseling to our clients in terms of infringement issues—how strong their patents are, do they cover someone else's product, or are their products at risk for infringing someone else's patent.

All of these questions are interesting and important to the movement of the pharmaceutical and biotech companies, and it is fun to be a part of that. I do not know anyone who looks back and says, "Oh, I wish I was back at the bench, which was fun." We have had a good time with this career also.

Estelle Tsevdos

Estelle Tsevdos: My name is Estelle Tsevdos. I am a partner at Kenyon and Kenyon. I had a very diverse way of getting to the position I am at now. I got a Ph.D. in pharmacology, but as I was going through that program I decided about a year before I defended my dissertation that I thought it would be a good idea if people in science and people in law got together so they could understand each other. I applied to law school early, as was suggested, but I did not know that at the time. I finished a couple of postdocs during the summers while I was continuing law school, and then I graduated from law school, interviewing at Proctor & Gamble, which is one of the very few companies in this country who will hire attorneys, patent attorneys, straight out of law school. There are very few, if any others, who will do that.
I went to Proctor & Gamble and ended up in the foods division doing cake mixes and muffin mixes and oils, and I said, "Well, I got my Ph.D. in pharmacology." I decided to leave and try to get into a pharmaceutically based company. I interviewed at American Cyanamid Company, and they said, "How would you like to do biotechnology?" And I said, "Oh, yes, I am very interested in biotechnology. What is that?" When I accepted the position there I saw that it was—in the old days, this is really giving away my age—physiological biochemistry.

I went there and I did work and loved it, loved the company. Letterly Pharmaceuticals was the pharmaceutical portion of that company; it had an agricultural division in animal health. I decided that I needed to build my background in litigation because in-house attorneys do not actually do litigation; they oversee it, they are very important. I did that role, and I prevented litigation for the client that I was servicing for eleven years, but I wanted to do actual patent litigation. I had done medical malpractice and tort litigation, but I wanted to do patent litigation. Kenyon and Kenyon recruited me to be a partner there. I did it backwards, people. I went from industry to private practice. Some of the questions you may have will relate to the unique opportunity to compare the two kinds of practices.

I did go to Kenyon, got involved in very extensive litigation on acellular pertussis vaccines, some cosmetics, some growth hormones. A wonderful, wonderful experience.

What do I do? I think people have suggested it all along, I educate. I educate judges, I educate juries, I educate scientists, I educate businesspeople in other corporations, I educate investors. I have to teach and train and make people understand science, values, and values of intellectual property. That is what so exciting, being able to see that your communications and your skills in communication can make a difference in understanding and describing science. Thank you.
Types of Jobs in IP

Question from Eric Staeva-Vieira

Eric Staeva-Vieira: Thank you very much. I want to sum up a few things I think we have heard here. First, we are talking about intellectual property, and I think you get a good sense of what it is now; we are talking about patents. You heard some of the descriptions of what it is, and we are talking about a protection. In the lab it takes a lot of work to get something done and something understood and to turn that into a real product. You want to be able to have protection, and that is I think what this group is talking about in the aspect of intellectual property.

One thing I really liked was the aspect of getting to the real-world application. A lot of times as scientists in the laboratory we see the small picture, but I think they are giving you a perspective that this career lets you expand on that and really look at the big, global picture on where these discoveries that are happening the lab can they be used for health care, for agriculture. I think that is what this career option brings to you. If you have that vision, that you want to get out and see the real world, I think this sort of career is really a fascinating one.

We also heard a few things, about different types of positions. We heard about tech-transfer specialists, scientific advisors, patent analysts, patent agents, patent lawyers, and litigators, and I think they quickly went over that. I want to ask the panelists quickly if you can sort of describe what are the differences here. What can you do as a scientific advisor that you cannot do as a patent litigator? What does that entail, what is your job role? So we can get a sense of the educational requirements, do you need to know law to do these various positions? If someone can speak to us on some of those issues.

In Law Firms

Estelle Tsevdos: I am not sure what the litigator cannot do if he or she has the scientific background. However, it is probably more cost-effective to have someone who is less expensive to go over and review technology that may be needed for potential investors, for instance. Very important. We call it due diligence. This happens all the time. Either a company wants to get started, a company needs to raise more funds, or there is a potential merger or acquisition, or there is a potential litigation. In all those situations the technology has to be evaluated.
Our litigators and our other attorneys obviously can do that, but we also try to do the most cost-effective job for the client, so we often have scientifically-trained people who are interns in our firm, in particular legal interns wanting to go to law school or in law school who help us out in those situations.

We also have prosecution and preparation of patent applications. Again, the litigators who are members of the patent bar can do that, assuming that is what they wish to do, to have a variety of work flow. Then we have some attorneys who prefer to do that and not do litigation. This is very important because any entity, whether it is a small inventor, a large company, or a start-up company, has a pot of gold in its intellectual property, and it has to be protected. Not only does it have to be protected, it has to be free to develop and sell a product so it can make money. Profit is a good thing here. Our counselors, our attorneys who do not like to do the litigation will be involved in many of those evaluations as well.

**Richard Bork:** At our firm, Morgan Finnegan, we hire Ph.D.s who are called scientific advisors, and it is their choice whether or not they want to go to law school. They are expected to become patent agents, which, as Anna said earlier, is someone who takes the patent bar and is administered by the U.S. Patent and Trademark Office. When they pass that, they are able to represent clients before the Patent Office—that is called prosecution—and to draft applications, to correspond with the examiners to eventually get issuance of the patent.

The patent agents or scientific advisors also assist us, like at Kenyon and Kenyon, in various matters, be they due-diligence matters, be they litigation matters, opinion matters, and, in many ways, in similar tasks as the associates. One has to keep in mind that law firms, as corporations, are also businesses, and typically the client is charged based on the amount of time the professional has put into that matter. Different professionals have different billing rates, so my billing rate is a lot more than a scientific advisor’s. It is not economically that helpful for me to draft an application if a scientific advisor could do that just as well as I. One has to look at the economics of the law firm practice to see what gives the best product to the client at a reasonable cost.
In Academia

Eric Staeva-Vieira: Maybe Rahul or Donna can talk about the perspective coming from academia, because you are both working in tech transfer at academia. How does that differ from the goals that a law firm would have, or are they similar?

Donna Rounds: The goals of a tech-transfer office are to fundamentally protect the intellectual property of the University. We work very closely with law firms to develop patents, to do prior art searches. Not often do we do freedom-to-operate searches, but we do do some of that as well, and that is where you really want to look in and see if there is additional intellectual property that may come into play with the intellectual property that you are seeking to license or to commercialize. It is not opposing in any way; we work very much hand-in-hand, and we appreciate the law firms who recognize that our funds, too, are limited. Even though Columbia University has a very large patent budget, it does like to be judicious about how it spends that budget.

Rahul Aras: I think one thing to consider also is that in technology transfer we are the first door that the scientist opens. We have a somewhat closer connection to the initial science that is going on. I am sure that lawyers have to stay in close touch with that, too, but it is something that I have enjoyed. I cannot prosecute patents, I cannot sit in front of a judge or a jury, but we do work closely with the lawyers on these topics, and also act as more of a liaison between the scientists and the lawyers because, as the lawyers can tell you, a lot of times this is—and it is been mentioned—an educational process for the scientists. It is a steep learning curve when you have to get a patent filed in the matter of weeks and then prosecute it and move forward with a lot of the decisions. We help sometimes translate these things, because my billable hours are a lot cheaper than theirs. It acts as kind of a door to help translate academics into the legal.

Donna Rounds: We do not have in-house patent attorneys, we use a number of law firms outside. Everybody in our office, and there are about six associate directors in our office, is overwhelmed with the amount of work that is out there. People are producing so much that it just takes so much to start researching it and understanding what it is. You are appreciative of law firms that have the scientific advisors and the understanding to help us out.

Kenneth Sonnenfeld: One thing I may add in terms of the distinction between the scientific advisors and the lawyers is that, in order to render a legal opinion on intel-
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In order to give an opinion on intellectual-property matters you have to be a lawyer. In order to give an opinion on infringement, whether or not someone's product is infringing a patent, or is that patent valid or likely to be held invalid, requires an attorney who can give the legal opinion and analyze the law in order to render that opinion. Yes, we do work with scientific advisors to help understand the technology. In the reality of it, a patent agent who has been working in the field for several years has a lot of good insight into these issues, but at the end of the day it has to be an attorney who actually renders that opinion either in a legal document to the client or is involved in litigation.

**Donna Rounds:** Do you know what infringement is, do you want a definition? When you get a patent that is not a positive right, it is a negative right. That means you can exclude others from making, using, and selling your invention, but that does not necessarily give you the right to make, use, or sell that invention, because somebody else may have a more encompassing patent under which you fall. Just because you get a patent does mean that you are entitled to market something.

Infringement is a very serious issue. As Ken said, a lawyer has to render an opinion at the end of the day to the client, and there are legal ramifications. If you do not have what is considered a well-reasoned and objective opinion, if a jury or a judge finds that the client is guilty of patent infringement, they could pay treble damages for willful infringement. That is why these opinions are very carefully reviewed with very, very competent scientific advisors, but are reviewed with the people who know the law maybe more carefully, and rendered to the client in that matter. There is a legal basis for doing it that way.

**Staying Close to Science**

**Eric Staeva-Vieira:** You can tell me if I am getting this correct, but I have a sense, and this is for our audience, that if you want to stay more towards the science end and really enjoy the science end but are sort of interested in patents, you would want to stay more toward a science advisor position, but if you want to go towards the legal side you would want to go towards a law degree. I am trying to get a sense of whether, if people love the connection to science, would a science advisor position be better for them?

**Anna Lövquist:** I still love science, even though I sit in a law firm, and you deal with cutting-edge science every day. You also deal with transgenic chickens and chewing gums, too, but there are a lot of interesting things that pass my desk.
I think at law firms the usual route for a Ph.D. is to start out as a scientific advisor, then take the patent-bar exam so you become a patent agent. Then most of the Ph.D.s at the firm I work for take advantage of the sponsoring program that the firm has and go to law school during the night; you work full-time but you go part-time to law school for four years. Then you are stellar—you have a law degree, you have a Ph.D., and that is a very good bargaining position, I would say, for a good salary.

That is it. I am not going to law school. It is not a requirement that you do that, at least not where I work. Like I said, I am still more into the science part of it than legal part, but at the same time the legal side is interesting.

**Donna Rounds:** Patent attorneys have to have a scientific background; if they are going to sit for the patent bar and they are attorneys they must have a certain requirement of scientific background. If they are doing patent litigation they have to have a mind that allows them to understand the various technologies that they are using. They are exposed to science on a daily basis. Whether one decides to go down the legal path or to stay in the scientific path as a scientific advisor, one will be exposed in dealing with science on a daily basis.

**Kenneth Sonnenfeld:** To elaborate on that, I do not think that when you become a lawyer as opposed to a scientific advisor that you really leave the science behind. I think it is really a pretty integral part of what you do as a patent attorney. For example, if you are now a lawyer and you are taking or defending a deposition, you have to be familiar with the rules of evidence and the legal requirements and so forth. But to effectively take or defend that deposition, if it is a case involving a pharmaceutical or a biotech product and perhaps it is a deposition of an expert, a professor at X University, you really do need to know the science and have an understanding of the technology to really be able to effectively carry out that legal task. I would say that just by the nature of doing more legal work with a law degree I do not think you ever really leave the science behind at all. It is always integrated and part of what you do.

**Kenneth Sonnenfeld:** I think in Estelle’s introduction she was talking about communication. I think one of the most important aspects of this career as a lawyer is to be able to communicate the scientific facts and then put that in the legal framework. In order to do that you really do have to understand the science. Whether or not it is involved in litigation, opinion, or even in licensing matters, you need to know the underlying technology that is the focus of whatever matter you are dealing with. As an attorney I have learned much more than I ever expected about protein expres-
sion, PCR, microchip arrays, whatever else, catheters. As a scientist I was involved in nerve-growth factor and cell development. I would have stayed in that niche probably as a career. As a lawyer in IP and biotech and pharmaceuticals, I have been exposed to, and had to learn to a fair amount of detail in, a much broader area of science than I would have had staying as a scientist. That part, frankly, is enjoyable, but at the end of the day, our work product is some form of communication, either through a written document or through an oral argument someplace.

Richard Bork: One other thing I would touch on is something that Ken raised. When you go from being a scientist working on your thesis or your postdoc, you are usually working on a very specific project. A hallmark of what I think everybody does, to some extent, is you really become a little bit more of a generalist. You do get exposed to a lot of different technologies and a lot of different areas that you probably never even thought you would see when you were doing your thesis.

I think that is probably even more true at a law firm. I think when you go into a company it tends to narrow a little bit in the sense that the company may have certain areas they focus on, but even where I am the focus to a large degree is diabetes, but that is such a large metabolic syndrome—it has cardiovascular implications, not just the classical blood-sugar issues. Even there you are touching on a lot of different research areas on a day-to-day basis.

Skills Required for IP
Question from Eric Staeva-Vieira

Eric Staeva-Vieira: With that recap on what they have just said, we are discussing a lot about skills. Estelle brought up the issue of due diligence, and what that comes down to is research. Everyone in this room understands the idea of research and what it takes to get the job done and where to find information.

They also discussed ideas of communication. Every one of you have probably given posters, have given oral presentations in front of a small committee or a large committee at a conference. I think a lot of times our work in the laboratory is very reductionist and pinpoint, but they bring up the idea of a generalist. If you have that perception of being a generalist, if you like many different topics, I think these are some of the skills that they are addressing.

I just want to bring it back to the panelists and discuss what other skills are neces-
sary for someone who has a Ph.D. Do they need to start researching about this profession, do they need to start reading about patents, maybe looking at patents? I think maybe that is a good idea to start familiarizing yourself with what it actually is. Are these the kind of skills they should be thinking about when they are processing in their minds about this type of career? Also, where do they get this kind of information? When should they think about taking the patent-bar exam?

**Hands-on Experience**

**Kenneth Sonnenfeld:** My personal opinion is I think the best type of experience you can get is hands-on. If there is a way for you to do an internship, for example, in the tech-transfer office, if they have that available; if there is a way for you to perhaps get a job somewhere at a law firm—some law firms hire part-time, I think outside of New York. I think that is really the best way to get an idea of whether you are really going to like it or not. I think you can read books until you turn blue, and it is really not going to give you a clear indication. In my own personal experience, when I decided to make the switch from science to law, a main factor in my deciding to go to work during the day and go to school at night was that I wanted to get an idea really early on about whether I like this. Was this something I was going to be happy in? I did not want to go through four years of night school, come out, go get a job, and after a year say to myself, "What am I doing? I should've stopped a long time ago."

My personal opinion would be to try and get hands-on experience as early as you can, and I think at a lot of places you can get internships. We have them at our company as well; we currently have a summer intern right now who is working in the patent department, so I think those types of positions are available. The Internet is a fabulous tool for that type of thing.

**Donna Rounds:** I would add that our office also has internships; we have two interns this summer. When I first started out I was willing to work for free and willing to do whatever it took to learn as much as I possibly could about the field of intellectual property, about licensing, about starting up a company. Until we raised our first angel round of funding, I worked for over a year with no pay, which is sometimes hard to do but I managed to do that.

I think internships and networking and as much hands-on experience as you can get is critically important. Also, there are plenty of places where you can study for the
Careers in Intellectual Property

A Science Alliance Seminar, July 29, 2003

There is the Practicing Law Institute in New York City, there are Caten’s videotapes. A lot of that doesn’t necessarily hit home until you actually start practicing it, but to start familiarizing yourself, there are plenty of things on the Internet and courses around New York City where you can do that, and lots of internships available in New York City as well.

Areas of Competence

Estelle Tsevdos: I would like to address some of the skills that you should see if you have in your position or can develop in terms of becoming an attorney and an agent. I think you have to love science, you have to really love science. Just because you are getting Ph.D.s in science does not necessarily mean you love it. You have to like and enjoy and communicate with people. Basically most of us left the lab, the bench, because we really like to be with people, although some of us were automated off. Whatever you are going to do in patent law, as a patent agent or a patent attorney you are going to be dealing with a lot of different people. I think it is important to know that you will be doing that and that you will enjoy that.

Not every client is an angel, but you have to know how to draw out the information that you have to get from a client in order to do the job. Quite frankly, you do not know if the invention that you are working on is going to be the cure for cancer or for diabetes or it is going to be a computer that is going to allow handicapped people better access or whatever. You do not know. That is the thrill of it, that is really the thrill of it. We are involved with the cutting edge of technology. We really do not know whether what we have in hand is going to develop into something that is earth-shattering. Doing the best job on every application, on every assignment that you are getting is important.

In terms of studying for the patent bar, as was mentioned, there are many videotapes and courses. I would recommend you do that, because it is a strenuous exam. It is not merely a registration type of situation, it is pretty strenuous. The only thing I would say is most people who have on-hands experience—and I am all for that—usually do not do well on the patent bar because the Patent Office grades the way it wants to see things. The people who have on-hands experience are pushing the limits to get things through the Patent Office, so it is not always a compatible situation. Bear that in mind when you are going through and getting your experience.
I believe that the legal-internship programs that have been mentioned—that I know that Ken’s firm has, that we have, which is more limited to people who want to go to law school, have already applied to law school, or are going to be in the process of applying to law school—are situations that did not exist maybe twenty years ago. I would take full advantage of going onto the Internet and learning about the various firms and what their programs are, because all the firms that have those kinds of programs advertise and market that they have those kinds of programs. It is a much more sophisticated and easier process than it was years ago.

Richard Bork: I think Estelle is also, but I am on the recruiting committee from our firm, so I can tell you some of the things that we look for when we look at CVs and resumes and interview candidates. Some of these things include that the candidate have and be able to demonstrate a real competence in whatever area they are involved in, in what their Ph.D. or graduate degree is in. As you come into this career, and particularly in this career, you are always going to be in a learning situation, always going to be learning new technologies. What you know coming into the firm a year from now may not be precisely what you are using, because you are going to have to learn something else. But we want to feel comfortable with the fact that you have learned a technology, you have mastered that, and based on that the odds are pretty good that you can learn something else.

A lot of us are looking at minimizing the risk when you hire someone; is this person going to be a good risk in terms of understanding, being able to catch on, understand the technology, understand the law, and understand the issues that we have to deal with?

Also a person who comes in to an interview and can be articulate and respond to questions well, can ask questions of us and really seem interested, who has done their homework, they know what the career is that they are getting involved with, makes an important impression. Someone who is kind of spacey and does not quite know what they are doing is does not get quite as far.

That person should demonstrate that this really is a career that they want to stay with and, as the panelists have said before, if they have already had an internship or passed the Patent Bar, or have some work experience or some background to say that they know what intellectual property is about, that this is what they want to do and this is why they are coming to our firm and so they are going to stay if we hire them. These are all some of the considerations that we look at in deciding whether or not to give someone an interview or give them an offer.
Knowing Strengths and Weaknesses

Rahul Aras: Just add to that, I think it is important, as everyone said, not to go in blindly. As we all sit under the umbrella of intellectual property—a litigator, a patent prosecutor, someone working in-house and someone doing licensing—while we all have similar skills, we have very different days, and those go from job responsibilities to lifestyle issues to parts of the job we may like or not like.

I actually do not have my patent-bar exam, I do not need to sit for it. That is possibly an advantage of being in technology transfer. If there is a patent that someone is infringing, I cannot deal with those things myself, that is the negative of it. These are all things that you need to educate yourself about. Having just gone through this, I know that when you look away from the bench you basically just see these big sections—intellectual property, business, pharmaceuticals. Within those are nuances that are analogous to neurobiology or microbiology, and within those you will have likings and strengths and weaknesses. The only way to know what you are going to be good at, what you are going to enjoy, is to really talk to people in the field, get an idea of what they do, what they like about their job, what they do not, and if that falls in line with the expectations.

Communication

Anna Lövquist: Many have emphasized here on the panel that communication is something that you need to love to go into this field, apart from science. I would say you need to love to write, because that is basically how I spend my days, I write. You learn two new languages, patentese and legalese, which are a little bit different from ordinary English. It is also something to consider if you are a foreigner, that usually you may not master the language as well as Americans do, but I would not say that should stop you from thinking about this career. A couple of foreigners work at the same place as I do, and patent lawyers are very good teachers of how to write.

I am a bad example because I had never even laid eyes on a patent before I started at the firm I am working at now. But if you want to do that, the U.S. Patent and Trademark Office has a Web site, www.uspto.gov, or you can browse around. They have some links to fun patents and weird patents and other things like that, but also biotech patents. If you just search around a little bit you will find them.
Lifestyle and Salaries
Question from Eric Staeva-Vieira

Eric Staeva-Vieira: I think that was a fantastic array of skills that we should think about if we have those or, if we do not, we should enhance. I think writing is the perfect example of where, as scientists, we probably do not have as much experience writing and communicating in that form. We do a lot of oral presentations, but that a great comment as suggestion. If you want general interviewing skills, go to our Web site Interviewing Beyond the Ivory Tower and that will give you a lot of those suggestions about interviewing skills and doing your research.

One thing Rahul brought up is lifestyle issues, and I think a big question here and one thing you talk about is getting law degree. That is a lot of money. I think we are all concerned about money, being students and postdocs on our stipends. Do law firms actually pay for you to go to law school, and can we get a rundown of the starting salaries for these various positions?

Funding Tuition

Estelle Tsevdos: Our law firm will pay for an intern to go to law school, but it has to be an intern who has already either applied for law school or is in the process of applying for law school. We will pay the tuition and we also will pay for the intern to work at our law firm. The starting salaries range, depending on experience, for an intern between $75,000 and $115,000 a year.

Once a person graduates from law school, if the person is good, and we have evaluated the person throughout these four years, they will receive an offer to become an associate, which are people in the law firm who are not the partners, and will get credit for a couple of the years that that person was an intern for us. It is basically a two-for-one kind of situation. For four years, that person would still be a first-year associate but would get the salary of a second- or third-year associate. Associates’ salaries range from about $125,000 to $215,000 a year, depending on the years of experience. It is pretty lucrative, but it also is a difficult road to go down.

Quite frankly, the argument that you are going to spend four years in law school and it is four more years is not a good argument, because the four years are going to go by anyway. You are not going to stop the clock, they are going to go by. So if you decide that you want to go to law school, you might as well do it. I went through
eleven years of higher education. My parents thought I was crazy, but I did go through eleven years of higher education. When I got my first offer at Proctor & Gamble, my friends who finished high school were making $10 an hour bagging groceries and I was making $24,000 a year. I am old so that is a long time ago. But they are still making $10 or $12 an hour and I am not making $24,000 a year. That time is going to go by. It is an investment in yourself, in a potential career. Obviously, beyond the associate salaries are partners' salaries which are higher than that.

There is a lot of time that is spent in the law-firm environment. I am not going to rosy-color that for you. When an intern is going through law school, obviously the intern gets time—at least in our firm, and Ken you can talk about your firm—to study for exams and to prepare for class, because there is a lot of preparation, but we have a certain criterion for hours that the intern must bill in order to maintain this good status.

Once one becomes an associate in a law firm, is finished with all that, taken the bar, passed the bar, then people put in a lot of time. Associates do work hard, because it is hard work to learn this area of the law. It is a very complicated area. It is fantastic, it is wonderful, but it is complicated and it takes time to learn it. It takes, I believe in order to be a good prosecuting, counseling attorney, at least five years to learn it, no matter what kind of experience you have had prior to that, because you are exposed to various issues.

When you decide to do this, and you are working somewhere—whether it is at Kenyon and Kenyon or Morgan Finnegan or wherever—make sure you enjoy that environment and you enjoy the people with whom you work, because you are going to be spending a lot of time at work.

You can become a counseling-type attorney or a prosecuting attorney, where you may have a little bit more personal time. Litigators, unfortunately, do not have as much luxury with their personal time because the time is controlled more often by the courts and the opposing parties. That is where you get a lot more invested in terms of your personal time.

Kenneth Sonnenfeld: Our firm is very similar in many ways to Kenyon and Kenyon. We also pay for the scientific advisors to go to law school, although, as I said before, we do not require that they go. If a person wants to remain as a scientific advisor they are free to do that. The salary ranges again are very similar to Kenyon and Kenyon in the sense that as we go after the same pool of candidates we kind of have to be similar. It is the same range.
If you decide to go to law school as I did, and you go at night and you are working full-time during the day, it is hard. I had a family and I went to Fordham at night, and the first year is Monday through Thursday. I lived out in Queens and so typically did not get home before 9:30 or 11 every night, and then weekends you either study or you crammed a lot at the end of the semester, which is typically what I did, which sometimes works and sometimes does not.

It is grueling but as Estelle said, it eventually is over and you are done with it. Then you become an associate and you work hard still, and the hours are not that different, but it is much more focused because you are not worrying about exams, you are just working for your career, which for me was a breath of fresh air, and also still a lot of fun.

Firms do require a minimum amount of billing that they expect the associates to do. Typically it may be around 2,000 hours per year, but for the associates who are really working hard, or if you are on a litigation and things happen and you have got to be there, you may bill a lot more than that.

It is a service-oriented career and business, so if your client calls you—as I had a new client call two weeks ago at four o’clock on a Friday saying that they wanted to do a deal on Monday, could we review the technology—I was not about to say no. That is what I did that weekend, and that Saturday night we had a telephone conference call at seven o’clock in the evening.

You do what you have to do, and you have to kind of roll with it. Typically, most of the time it is appreciated by the clients and it is a career that I think is rewarding and does pay off after a while.

Salaries

**Eric Staeva-Vieira:** Can we get a sense of salaries in the pharmaceutical or the tech-transfer offices?

**Richard Bork:** I will speak to the pharmaceutical. First off, I think a little while ago there was more of a stereotype that pharmaceutical was nine to five. I think it is definitely less hours than a law firm, but I think that nine to five has come and gone. You do work, in my experience at least, less hours but you still work some pretty long days. I think the salary, at least for my personal situation I experienced,
you do make less in-house than you do at an outside firm typically. In my situation, I think it was about a 15 percent cut when I went in-house. But that is just salary. If you go in-house at many companies you have access to stock options or the way they fund their pension plans and retirement plans is a total package.

I think at the end of the day, at least in my situation, I would say that you come out comparable to where you would be as an associate. I think where the distinction comes into play is partner salaries versus in-house. I think that is where the separation really comes in. That said, you are not going to be running for food stamps working in-house either. You are making what, coming from a scientific background, is honestly quite a bit of money.

I said before we had this panel that the first year I got back my tax statement and looked at it, I realized that I had more taxes withheld than I earned my last year as a postdoc. That was a very sobering moment. It was right between the eyes. It made me realize what everything was about.

I just wanted to touch briefly on law school at night. Obviously if you go to a law firm—I went that route as well—and you get your school paid for, which is a great thing (who wants to get more debt at this point in your life?), you do get the experience. But I also felt, at least for me personally, that a couple of things I got out of it that really held me in good stead when I went into the law firm as an associate was the concept that you are really forced to put a premium on time management. You do not have any spare time, you know, you work from eight to five, and at five-thirty you go to school. As Ken said, you get home at ten or eleven at night. You are not reading the paper on the train, you are reading some law book. It really puts an emphasis on that, and I think that is something that is very valuable when you go and work in a law firm and even to some degree in a company afterwards.

The other thing is that I think it also teaches you the ability to do the best job you can, but it teaches you that you have to let go at certain points in time. You really are under a time constraint. What I mean by that is when you are a law firm, a client is not going to want to see an application that took 200 hours to draft. They want a very good application but they also want it done in a timely fashion and done well. That forces you to do a good job but at some point to let it go and know that you have done a good job and just move on to the next task at hand.

Estelle Tsevdos: That is an excellent point on time management. I am sorry, I already spoke, but I feel very strongly about that, I am glad you raised it. I think
everybody should take a time-management course, especially attorneys, because some attorneys take two-hour lunches, and they go out and have a drink with the gang at six o’clock and so they are twiddling around. Maybe to them it is not that important to set a schedule so that they have other things in their lives, but it is important to me. I have a family, I want to be with that family, and I suspect that the best course that any young attorneys can take is a time-management course. If you are thinking of going down that route, take a time-management course. Not all of the steps in that course are going to apply to everything you do, but there will be steps that will, and it will help you structure your life so that you have the components in your life that make you content. So thank you for raising that point.

Donna Rounds: To the salaries with regard to a technology-transfer office. In a non-profit organization such as Columbia University it is quite a bit less than it is in the private sector. When I moved from industry to the tech-transfer office, it was a surprise in terms of the drop in salary, but nonetheless it is worth getting out of bed for in the morning. There are a variety of different positions in a tech-transfer office, from a market analyst position to licensing associates to associate directors to directors, senior directors, etc. The salaries on the low end for the starting positions can be anywhere from a high postdoc salary up into probably $70,000-$80,000. For licensing associates and associate directors, depending upon where you are in the country, it can go from anywhere from $85,000-$150,000.

They are not unreasonable salaries. I moved specifically for lifestyle reasons because of my family. Working in industry is grueling, especially if you want to do a good job. There is lots of competition out there for everything, and so working many hours and traveling 80 percent of your time is not unusual.

Rahul Aras: To add to that a little, the law firms are all in the same ballpark. One thing to consider is, when I was looking for jobs I got offers for nearly the same position that differed in $30,000-$35,000 ranges. There are wide varieties.

As to the lifestyle, it was actually a major consideration for me. Truth is going to come out. I actually took my LSAT and was preparing to go to law school, and then I realized I had spent four years of my life where I never came home before eleven-thirty and I wanted a year or two to myself to consider things and determine if I wanted to do that. I know a partner at Darby and Darby and he had a very candid discussion with me, and he was saying that he appreciates the fact he did it now, but it was very difficult, and it puts burdens on relationships and families and friendships. I finished by Ph.D. and realized that I did not talk to any of my friends any-
more, and it was because no one answer the phone at eleven forty-five when I got home.

I think everyone here will admit that, wherever you want to go, it is a long process, it takes time, so it is always wise to step back and make a decision based on what the next step is going to be. I think all the positions pay in a fashion that is nice, to say the least, compared to a postdoc. I am not making an associate's salary, but also I have not looked for food stamps in a while. I think you can step back, have a comfortable lifestyle and also enjoy what you are doing.

**Audience Questions**

**Foregoing a Postdoc**

**Eric Staeva-Vieira:** On those wise words, I would like to turn it over to you, because I have had all my questions answered. I think it is time for you, the audience, to participate and get some of your concerns addressed that I may not have covered in what I have put together. There are two microphones in either aisle. You can make your way up to those and please speak into the mike so everyone can hear you. First question.

**Woman:** I am wondering if there is any disadvantage in going into a career in IP without having postdoctoral research experience, if you go straight into it.

**Donna Rounds:** No, I do not see a disadvantage, quite frankly.

**Kenneth Sonnenfeld:** In fact, I think that it does take a while to get the expertise in IP, so I think you are better off starting off a career that you are going to be spending your life with. I do not think the postdoctoral fellowship is going to really help you that much in terms of the career in IP.

**Woman:** In evaluating your competence as a scientist, if you have only the publications that you have made during your Ph.D. training.

**Kenneth Sonnenfeld:** Assuming that your background as an undergrad and grad student is a strong background, that is usually sufficient.

**Estelle Tsevdos:** I did my summer postdocs, quite frankly because I did not know any better. Now life has become more sophisticated. We did not have programs like this...
back in the Dark Ages. I just did it because I thought, "Gee, summer jobs." I enjoyed doing it, but I really think that if you are interested in intellectual property it will do you well to get into those kinds of positions and jobs sooner rather than later.

**Woman:** Estelle, as ancient as you claim to be, you look fabulous.

**Estelle Tsevdos:** I won't tell you my age, then. Thank you.

### Patent Agents vs. Attorneys

**Eric Staeva-Vieira:** Second question.

**Man:** I would like to start by thanking the panel for showing up and talking to us. I have a small technical question. I think I heard Ken speak about a patent agent and Richard talk about a patent attorney. I would like to know if there is any difference, and more specifically to something that Estelle had said about the prosecution of patents in front of the USPTO versus prosecution of infringement and the acquisition of damages. Do those two proceedings happen in front of different courts?

**Man:** Do you want to take the first question?

**Kenneth Sonnenfeld:** In terms of the patent agent / patent attorney, the patent agent is someone who has passed the exam administrated by the Patent Office, so they can represent a client before the Patent Office to get a patent. A patent attorney is someone who has done that but has also gone to law school and passed the bar and is an attorney.

**Estelle Tsevdos:** Patent agents or patent attorneys who are prosecuting patent applications do so before the United States Patent and Trademark Office. It is a give and take: you submit a patent application, the examiners reject it, you try to convince the examiners why this is a wonderful invention, and that is patent prosecution. There are certain other procedures that occur before the Patent Office. When two inventors believe that they have invented the same invention there is a procedure called an interference, where the Patent Office determines who is really the first inventor, because in the United States the first inventor is entitled to a patent. In the rest of the world it is the first person to file the patent application who is entitled to the patent.
As an attorney, one has to practice before a judge and jury, so you have to be a member of the bar. In New York that means you have to go to law school and you have to pass the New York bar. Infringement situations, the trespassing on rights that I was talking about, is a situation where you are in front of a judge and/or jury, so you have to be an attorney. An attorney can still prosecute patent applications, as Ken said, but in order to litigate in a court you must be an attorney.

**IP, Sport of Kings**

**Man:** It pains me very deeply, I cannot remember where I read it, but I have read that intellectual property is the sport of kings. I would like to know why this would be written and who it would apply to, and also to follow up on that, where can I read about trends in your industry? Donna spoke to the increased volume of work in front of her office these days; I would like to also ask if you see any trends in your industry and what are the resources where one can find that out? Thank you.

**Donna Rounds:** It could be that they say that it is the sport of kings because to actually file a patent application—to write a patent application, to file it, to pay the maintenance fees—is tens of thousands of dollars. It is not inexpensive. There are companies that have millions and millions of dollars of budgets. Columbia University has several million dollars of budget for patent prosecution and maintenance. It is a very expensive game, especially if you go beyond the United States and into the rest of the world.

**Kenneth Sonnenfeld:** Patent litigation is one of the more expensive types of litigation, so it is easy to spend millions and millions of dollars on the litigation because of the technology involved, you have to use experts. It is not the run-of-the-mill litigation. In order to either assert a patent or defend against one, if it is an important patent, it is easily millions of dollars in many cases.

**Estelle Tsevdos:** And two to maybe seven years of litigation.

**Donna Rounds:** It is important because patents are worth a lot of money. People want to have the best patent they can for their technology because they can be worth hundred of millions or billions of dollars.
**Following IP Trends**

**Eric Staeva-Vieira:** Can we just go on to that question about the trends, because I was interested in the trends in the industry?

**Donna Rounds:** There are a couple of good Web sites that you can look at. There is www.corante.com, which is like a daily news site. There are lots of trends. If you go into Google and type "intellectual property and trends," I am sure you are going to come up with something good, but there are lots of places to look. There are a lot of biotechnology Web sites, I am sure. This Web site right here (www.nyas.org) will tell you all about the trends worth looking into and probably has good links.

**Estelle Tsevdos:** I would also look at the law firms. I know our law firm does articles every month on trends or evaluating some cases come down. I am sure yours does as well. All the law firms do it. You could even go on the various law firms’ sites or the USPTO also has a journal. You might want to look at that.

Most of the trends would be in the trade-association kind of journals, in terms of what they are thinking in terms of filing. The USPTO and the Web sites for law firms will have some steps that people should take depending on what the courts have done with a certain case.

**Rahul Aras:** As far as trends in the sciences go, I make it a point to always keep in touch with what's going on in *Nature-Biotechnology*. There are other journals, like *The Scientist*. It is fairly general but it gives you ideas of what is going on. There is another publication called *Bio World Today*. We get it on a daily basis. It gives you ideas of what deals are going on with different companies, and that keeps you on a very topical level aware of what is happening.

**When to Start School**

**Woman:** I was wondering what are some advantages and disadvantages, besides obvious ones such as money and time involved, of going to law school directly after graduating with a Ph.D.

**Estelle Tsevdos:** I think the advantages are the time frame, being able to utilize and
keep up with your science as you are going through law school. But many, many people have gone through law school after they finish a scientific career or they are in the middle of it. People have midlife crises and they decide to go to law school, and they become very, very happy people. I am not sure I see an advantage or a disadvantage. I think it depends on the individual.

Kenneth Sonnenfeld: At one point our firm used to require a year lag in between the time we would hire someone as a scientific advisor and when we would pay for them to go to law school. Partly that was for us both to get to know each other, to make sure that the person really wanted to stay in this career and was going to be there. We have since not required that, partly because someone who is changing careers has already spent a fair amount of time in the previous career and you want to get them started as quickly as they can, if they want to do that. Again, we do not push someone one way or the other, and it is really a personal decision in terms of where they are in their life and how it fits into what they are doing. If they want to become an attorney, then the sooner they get on with that it is usually to their advantage. Again, you have to see where they are in their life.

Rahul Aras: It is also difficult to coordinate as a negative. I have seen this through a couple of my friends. I know personally studying for the LSAT, the LSAT is a difficult exam. A lot of people think just having the Ph.D. is going to get you into law school. It does not. You have to perform very well on the LSAT and you have to have excellent GPAs from undergrad if you want to compete at the top law schools. You have to study for the LSAT, so that means finding blocks of three or four hours at a time once or twice a week for an extended period to take the exam. Coordinating getting in is difficult. I have a friend who actually got into a number of different law schools and then he started looking jobs, and the economy is difficult right now and people are not hiring scientific advisors the way they used to.

Despite being in law school, he is having a difficult time finding jobs. Then the kicker is he had a committee meeting in June and they told him he was going to have to stay another six months, despite already being in. These things are sometimes difficult to dovetail with one another, as opposed to possibly graduating and then starting to think of your considerations.
Doctorate vs. Master’s

Man: How important is a doctorate versus a master’s in biomedical engineering or chemistry or genetics, in some sort of scientific field? Do you get no respect whatsoever?

Donna Rounds: We talked about that before the panel.

Man: Before it even started, that was one of the topics we discussed. I think I can speak for the right side of the table in saying that I think the feeling was that from a standpoint of perception, a perception when you go to meet with clients or when you go to meet with the scientists that you are dealing with, I think a Ph.D. does stand you in better stead than a master’s.

At the end of the day, there are patent attorneys who are very, very good who do not have either a master’s or a Ph.D. They have a bachelor’s degree. Substantively you can argue that it does not make a difference, but from the standpoint of perception, of getting your foot in the door when you are going to meet a scientist or when you go to meet with the scientists that you are dealing with, I think a Ph.D. does stand you in better stead than a master’s.

Man: I think the key is perception, however, because we are going through the process of hiring someone right now and we are only looking at Ph.D. candidates for that reason. When they have to sit across from a scientist, whether warranted or not, that scientist puts certain value in that Ph.D. degree and looks at them as a peer and will talk to them at a different level than somebody who comes in with a master’s degree. Even though that person with the master’s degree might have great experience and be very knowledgeable in the field, it is just a communication barrier sometimes.

Kenneth Sonnenfeld: From a recruiting standpoint, in terms of scientific advisors, because there are so many Ph.D.s looking to change careers, looking for jobs, the person who only has a master’s is not going to be nearly as competitive as a person with a Ph.D. For someone who is graduating law school and who has done really well in law school, a person who has a master’s and was great in law school compared with someone with a Ph.D. who has not done so well in law school, the person with a master’s may have a much better opportunity of getting a job with a law firm.
think it partly depends on where you are coming into the career. We hire a lot of lawyers out of law school who have just bachelor's and do not have an advanced degree, but the master's can help and the Ph.D. can also help. On the other hand, if we are looking to hire a scientific advisor then I think a Ph.D. is mandatory.

**IP Career Ladders**

**Eric Staeva-Vieira:** I want to give time for you to meet the panelists, so we only have time for one more question. You are on.

**Man:** Thanks. So I actually have two questions but—

**Eric Staeva-Vieira:** Just one.

**Man:** The question that I want to ask is how is the environment in a law firm, an intellectual-property law firm, compared to that in academia where traditionally a professor comes in at the assistant level and, in the course of five or seven years, is expected to rise to the level of full professor and receive tenure or they move on to a different university? In intellectual-property law firms is that promotion environment in place, where associates are expected to reach partner or else move on?

**Estelle Tsevdos:** Yes, associates are expected to make partnership or they may be able to go into positions that are either called senior associates or of counsel or counsel. These are positions where people’s experience and talents are appreciated, but for whatever reasons—and they may be personal reasons or whatever reasons—that individual is not seeking to be a partner or has not been deemed to have the qualifications to join the partnership. There are other avenues to go down, it does not mean you are out of a law firm if you are not made a partner. You can go into those slots, at least at our firm, and I will let Ken address his firm.

Then there are some people who are valued, but they are not even offered the counsel or of counsel or senior associate titles, but they may be asked to continue as associates. That probably is a temporary situation for a year or two, to allow that associate, who is very much valued, to have time to see if there are changes in his or her career. That may mean that the associate may go to another law firm, the associate may go in-house to a corporation, or may do other career paths that may be more suited to the individual.
The partnership consideration is usually taken in about the eighth year. That is an average. Some places have contract partners—they are not equity partners and so they may be a little earlier or a little later, but usually the average is that you are an associate for eight years.

An associate is expected to develop his or her skills over those eight years, and so a more senior associate will have more responsibilities and will oversee and supervise more junior associates. It is a lock-step process in the associate line, and then there are paths you can take at the law firm to determine where you want to end up in that law firm.

Kenneth Sonnenfeld: Again, our firm is relatively similar. I think one thing is to recognize is that typically an incoming class of first-year associates is a diverse group of people. For whatever reason, by the time it comes around to that eighth or tenth year for becoming partner, many of those people who started as first-year associates are not there anymore, and it has nothing to do with the fact that they were not going to make partner if they had stayed. For a variety of reasons—career choices, personal reasons—they may have decided that they want to do something else, they want to go in-house, they feel they want a different environment, they hear there is another firm that sounds more attractive, or a very pushy headhunter got them and got them to go someplace else. All those types of things happen, so that by the time someone is at a firm for eight to nine years the likelihood of partnership is relatively good. I think our firm and most other firms, if it seems like it is not going to work out for whatever reason, try and let that person know much earlier on that they may be better off in a different type of practice. They may be a good lawyer but the skills for a law firm-type practice may not be that well-demonstrated, or they may have skills that are better off in-house, something like that.

Those sorts of issues, you try and work out earlier. Typically by the time eight or ten years come around it is not such a surprise if someone is going to make partner.

Eric Staeva-Vieira: I think we should thank the panel for their wonderful advice.