

# THE BOEHLY CENTER

FOR EXCELLENCE IN FINANCE

CAREERS IN FINANCE PODCAST

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## EPISODE 18: PH.D. RESEARCH

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### Jeffrey Rich

Welcome to Careers in Finance, presented by the Boehly Center for Excellence in Finance at William & Mary's Raymond A. Mason School of Business. This podcast will explore various areas of the financial services industry, career paths in finance, and other practical insights that will help students better understand and prepare for professional success in the field of finance. Be sure to subscribe to the podcast and catch future episodes as we explore the field of finance. And now your host, Jad Howell.

### Jad Howell

Welcome everyone to another episode of Careers in Finance. Today we'll focus on Ph. D.s and research in that particular industry and focus. And I'm pleased to introduce you to the who's who this afternoon. We have with us Ellen Longman, who is a Senior Research Analyst at the New York Federal Reserve. Ellen, welcome. Josh Hurwitz who is an economics Ph.D. student and teaching fellow at Harvard University. Josh, welcome. And last but not least, Professor Julie Agnew, the Richard C. Kraemer Term Professor of Business here at the Mason School of Business. So we welcome each of you and are so pleased that you've taken a moment to join us and to help our student listeners learn about how to pursue a Ph.D. and what that career path might look like for them. Well, why don't we begin with Ellen this afternoon? Ellen, can you share with us a career sketch thus far and where you're presently at in your pursuit of a Ph.D.?

### Ellen Longman

So I'd like to just start by saying that anything I say here represents my own views and not those of the Federal Reserve System or the Federal Reserve Bank of New York. Yeah, of course. So I came into William & Mary as a finance major, and I initially pursued investment banking when I got there. That seemed like the most intense learning challenge that I could get when I looked at the various careers presented at FA, and I did that for my first two summers at Wells Fargo and then at Credit Suisse. And while it was a super intense learning experience I was missing, there's always kind of one further question that I wanted to ask, and I felt like assignments would kind of get pulled away from me and finished before I had the chance to think deeply about it. And I had done some research assistant work for Professor Guthrie in the business school, and I just realized that was what I really loved and what made me like finance. So I went back, and I actually designed a second major that I called mathematical economics that was through the Math Department. So I graduated with BS BBA, and that basically was like a math degree, but with some of the high up, more abstract classes pulled out and a bunch of econometrics put in its place. And then, after graduation in December of 2019, I began working at the New York Federal Reserve Bank in what they call a pre-doctoral program. So I'm going to spend two years total, one year left at this point, working for various economists there, helping them with their academic research to kind of learn how that trade is done, and I'll be applying in the fall.

Jad Howell

Terrific. That's a wonderful opportunity. It sounds like you currently have and very intentional as well to put you on that Ph.D. track. Josh, how about yourself?

Josh Hurwitz

Yes. So my journey, I would say, started in around 2008, when I was a junior at William & Mary. I was also a finance major, and I found myself in the initial business classes just being really inspired by some of the professors that I had. And also, it was just a really interesting time to be taking economics classes. It was right during the Great Recession.

Jad Howell

Right.

Josh Hurwitz

So there's economic collapse going on all around us, and I found myself just being really intellectually curious about that and wondering what a career would look like, where you're trying to answer some of the questions that everyone was trying to answer at that time. So that very quickly, I found myself in Professor Agnew's office, and I could actually say that looking at the past decade or so after that, that was basically the starting point for everything that came next. She was really my mentor at William & Mary in terms of carving out a path for my remaining time there but also giving me my first exposure to academic research. So I had the opportunity to be a research assistant for Professor Agnew. And then that led me to my first internship before my senior year at the Center for Retirement Research at Boston College. So we have been working on some retirement-related research that I became very passionate about. And then, I got to continue pursuing that at the Center for Retirement Research, where I ended up taking my first research position post, William & Mary. So I worked there for three years, and I got to do a lot of research on the public pension crisis that emerged during the Great Recession. There's a lot of questions about how our government is going to continue funding these pensions that now have these huge funding shortfalls. And so I got to work on policy research in that area, really fell in love with it. And three years in, I applied for the first time the Ph.D. program because, at that point, I really knew that's what I wanted to do, and we can talk about this more. But I actually ran into quite a bit of failure my first time around some of the target schools that I was really after. I wasn't able to get into. But luckily, I was able to do some networking and use the connections that I had to end up getting a research position at the National Bureau of Economic Research, where I got to work with a team of Harvard and Yale economists. And so I did that for two more years. I was able to get a publication as a co-author and get some new experience to add to my resume. And after that, the second time around, I was able to get into the Harvard Economics Ph.D. program, where I'm currently in my 6th year. I'm defending my thesis in ten days. It's the end of a very long journey on that front. And then after that, I'll be moving back down to Virginia. I'll be working in DC at the American Roads and Transportation Builders Association. So doing a lot of research on public infrastructure is a great time for that right now.

Jad Howell

It absolutely is.

## Josh Hurwitz

The infrastructure bill is going through. And I'm also, during this process, I fell in love with the teaching side of academia. So I have a lecturer position at Tufts that I'll be doing on the side.

## Jad Howell

That's exciting. Well, congratulations. It sounds like you've come so far, and you're at this inflection point of your career now where you're entering the private sector and basically yield the harvest of all that hard work. So congratulations.

## Josh Hurwitz

Thank you.

## Jad Howell

Professor Agnew, would you like to give us a sketch of your career path and where you're at presently?

## Julie Agnew

Sure. I have to say it's really fun to be on this podcast with these superstars. I think that they're going to have a big impact on academia, and their research is going to really influence a lot of future decision-making. So my background is I also went to William & Mary, my brother has his Ph.D. in engineering, and my dad has his Ph.D. in mathematics. So it's kind of the family business to go get your Ph.D. From watching what they did, I saw that it was a really interesting career path. So when I was in school, I knew that I wanted to do that. I was also lucky that I was able to work with Professor John Strong on some of his research while I was here, and I knew that I really had the bug. I did want to get some practical work experience. So instead of going straight into a Ph.D. program, I took a few years off, and I worked in investment banking and equity research. And then, the time came to apply to Ph.D. programs and pursue that dream. So I did that. And in the back of my mind, one of my hopes had always been to be able to come back to William & Mary. And I just was incredibly lucky that there happened to be visiting position open when I was about ready to graduate. So I took that position, and then I've been here ever since, so that was 2001. So it's now 20 years that I've been here, and then I've just been spending my time doing research in the area of behavioral finance and how people make mainly retirement decisions.

## Jad Howell

That's excellent. I think Professor Agnew is an institution in and of herself. I remember her as a rock star professor back in 2004 and five when I was at Mason School of Business. So certainly, you've had an incredible impact on many of us. Josh, to you, as I mentioned earlier, kind of an inflection point, and you've made good progress. It sounds like you had considerable work experience even prior to applying to the Ph.D. program there at Harvard. What surprises have you encountered throughout this experience, this educational experience thus far? For good and bad, that might be a benefit to our student listeners.

## Josh Hurwitz

Yeah, absolutely. So I can start on the good side. And what I would say is that if you're interested in this path, William & Mary is actually an amazing place to be. And the main reason that I say that is that a huge part of having a successful path in research is having mentors and people who are willing to invest in you. And in my experience at William & Mary, there were just so many professors who not only were willing to meet with me but actively invested in me as a student and wanted to see me succeed on this path. As I mentioned before, Professor Agnew was the primary figure there. But there are also many other people who were a part of this journey and really wanted to see me succeed. And having been at other universities now where they might have, some might say they have a leg up in the sense that there's a more regimented structured path to funnel students from an undergrad program into a Ph.D. program. The very fact that that is a more structured path means that the average individual student pursuing that path is not going to get as much specialized attention as you might get it at William & Mary. So I do think that that's a big leg up. And if you're a self-starter and you're putting yourself out there on this path, there's going to be people who support you. So that was a good surprise. I would say maybe a bad surprise at some stages is that this process can feel like a roller coaster at times. Research is a roller coaster. So I would say when things go right, when you have a positive breakthrough or research idea, it can be the most rewarding feeling that you've ever had professionally. It can feel incredible. But on the other hand, there's going to be times along this journey where you've been working on something for weeks or months, and then all of a sudden, it completely blows up. The finding that you thought you had is not robust. Or maybe even worse is you go into an adviser's office, and you have this thing you're so excited to present. And within five minutes, they say, yeah, I don't know about this. Why don't you try something else, and then that can be a really defeating feeling. So I would say, just getting used to the fact that inherently that's going to be a part of the process. There's going to be ups and downs. And you have to sort of get used to riding those and not put too much pressure on yourself to only have the ups. You have to prepare for the downs as well.

## Jad Howell

Yeah, that's such a great lesson in life. Not just in a Ph.D. program, but just understanding that there's going to be twists and turns throughout, and you might take it one step back and then only to take two steps forward. So that's great. Thank you, Josh, for sharing that with us. Julie, what about yourself? What surprises have you encountered as a Ph.D.?

## Julie Agnew

I think one really good thing. So, my brother and my father, they both went into consulting, so they didn't go into academia. And so, I was the first one to kind of formally take a career in academia. And it's wonderful in the sense that you're your own entrepreneur, and you're able to decide every day what type of research and interesting questions you want to pursue. So that has been really enjoyable. And I like that with the added benefit. While research is really important, too, I've also really enjoyed the opportunity of having superstar students like the ones that you have on this call that you get to interact with, and you get to watch what they're going to do with their lives. So that's been very fulfilling. On the bad side or the surprising side is when I was a William & Mary student, I thought that professors just thought eat thoughts all day, drank coffee, and it was just this really easy lifestyle. And the fact is a lot of hard work. I had the opportunity, and Ellen can probably speak to it. And Josh has been in this world, too, the working the Wall Street hours. And I think it's equally as challenging and sometimes harder

work to be an academic. And people don't necessarily realize that and oftentimes, too, that you're not just thinking about your research, you have administrative duties, you have other kind of duties. So when you're working on research, oftentimes it's midnight or on the weekends rather than during the day, which I kind of thought was the case. And the last thing is, it's a little bit more subjective. If you're an investment banker, they look at how much money you're bringing in for your deals. And that's more of an objective measure where what you publish that inherently is more of a subjective process. And so that can be challenging, too, because the process is really long. And I know a lot of really great professors that had really great articles that didn't hit before their tenure timeline, so they didn't get to keep their job. And then two years later, all of those great papers kind of hit. So it's a wonderful career path. But the reality is, though, it's a really hard-working career path, too.

### Jad Howell

Thank you for clarifying that. I think that's really helpful. Would you, Julie, mind taking a moment to explain to our listeners the concept of tenure and what's involved to achieve that? I think that would be really helpful.

### Julie Agnew

Okay, well, it varies by institution, but typically what is involved in it is what you've contributed to the academic literature. So oftentimes, they look at the quality of the publications and the number of publications that you've made. They also look at your teaching and some other aspects. But if your research isn't there, you will not get tenure. And typically, it depends on the school. But you might have six years to publish. And if you don't, at that point, when you're evaluated, meet the criteria, then you cannot stay at the institution that you're on. If you do get tenure, then you can stay for as long as you want and forever. So that's a nice thing. But I realize that is a hard point in your life. And I didn't think that I spoke about it too much to my children when I was doing it. But my four-year-old, who was four at the time, I remember we were sitting at dinner, and somebody said the word tenure, and he just went tenure. I hate tenure, and I realized I must be talking about it a little too much. So it's kind of a hard path, but it's wonderful when you're on the other side.

### Jad Howell

Yeah, I can imagine. I've always observed, right. Not being a Ph.D. myself, but observed from afar the intensity of those years preceding, right. To get to that point in time. But then also the great reward that awaits you as you are successful. Why don't we go back, Ellen, to you, maybe describe for our listeners why you are pursuing the path you are. What is it about a Ph.D.? Was there a moment in time you alluded earlier to some of your touchpoints here at William & Mary? But what was it that has made you or compelled you to go down this path in pursuit of a Ph.D.?

### Ellen Longman

It felt like the perfect fit for my personality. Like I'm the kind of person where when I went on vacations, and I was like, five years old, like, everyone else would go to the pool, and I'd have some random obsession. I'd be like, no, what if I found out that there were, like, really small countries in Europe, like Lichtenstein and Luxembourg, and I was obsessed with just, like, comparing and categorizing and learning. I was just that person my whole life. And I feel as

though academia is kind of the closest thing that I can get to being able to find something I'm interested in and just obsess over it and get paid to do that. And then I would kind of add into that. When I was a teaching assistant and research assistant, I felt like being able to sort of perfect blend of all the skills that I had, like, persuasive communication, being able to kind of translate things that seem obscure to more simple language that someone can understand and being able to learn a lot and then share it. And so I just became involved in more experiences like that. And I was just so happy whenever I was interning at the Fed or working there full time. And I was like, I need to just find a way to stay as close to this path as I can.

### Jad Howell

That's great. I mean, just listening to you describe, it's obvious that you're very enthusiastic and excited about this, and seems like it's just right up your alley. So that's great. Thank you for sharing that with us. What about Josh yourself? What was it about this career path that was compelling to you?

### Josh Hurwitz

Yeah, absolutely. So I would say very much like Ellen, I'm also intellectually curious. So rather than just seeing some policy debate or some economic argument that's going on and sort of taking the high-level glance of that, I found myself wanting to dive into these things and really learn things at a deeper level. And so, I quickly found that academic research and that environment is sort of the ideal place to do that. And you're going to be surrounded by a lot of people who have that same motivation. And so it's a great environment for people who are really intellectually curious and sort of independent and autonomous in the way that they approach these types of questions. So that was a big thing that stuck out to me. And then my career path. Before I did the Ph.D., I had the opportunity to work in research organizations that were more policy-focused, so particularly the Center for Retirement Research. So I got a taste of more of the policy side of research. And then, of course, the Ph.D. is mostly academic-focused. And I found myself at the end of this process gravitating more towards the policy research side because I like, sort of the very applied nature of it. The fact that it moves a little faster. There's a lot more need for descriptive sort of fast-paced research rather than the more perfectly-identified causal research that's going to go in journals. And so you can have more of a direct involvement with policy. And that's something that really appealed to me, which has led me back sort of to that side of the research world.

### Jad Howell

I think that's very helpful. One of the things we had hoped to identify for our listeners today was just that understanding that in pursuit of a Ph.D., it doesn't have to take you back into the academic world. That you can, in fact, apply that in a very real-time manner, practically speaking in the private sector. Now, Julie, having said that, I know you have a number of touchpoints within the private sector. Do you want to maybe just compare and contrast? You mentioned earlier that you actually worked for a few years before pursuing your Ph.D. But then, even now, with those touchpoints that you have, can you maybe compare and contrast the differences that you've experienced between academia and the private sector and how you've used your Ph.D. in both instances.

## Julie Agnew

Right. Well, I think that Josh actually made a really good statement when he was saying the world that he's going into is a little bit more fast-paced, and you get the research out quicker. That's one of the interesting things about being in academia is that to publish a paper, it's not that you write the paper, and four months later, it's in the Journal. It can take years. And I believe I did a timeline once. I had one publication. It took about five years to get into the Journal. And that's because you write it to do the research, you submit it, you get a revise and resubmit, then you have to go back and do the research. And so you live with these papers for a very long time. Whereas when I worked in equity research, so that's kind of a nice alignment, something would happen with our stock, and I would stay up all night, and we would have a piece out the next day to all of our clients explaining what was happening with the stock, and then that was done. I didn't have to go back to that. So there's a different kind of duration that you live with these projects. And as a result, too, Josh was talking about the robustness and things like that. When you're doing the academic journals, you have to spend a lot more time with that analysis and making sure everything is perfect. It depends on the speed that you like to work in, and I can see pros and cons to both of them. I actually liked both worlds, so I can't pick one as better than the other.

## Jad Howell

Have you seen, Julie, the use of published findings in the private sector, like, how does it ultimately translate back and be applied? As a researcher which, Josh, you're going to pursue a career path in that regard. But how do you see it come full circle where it's actually being used and applied? Have you been able to observe that happen in your own world?

## Julie Agnew

Absolutely. And it depends on the type of research that you're working on. Some doesn't have direct applications, but the project Josh worked on with me with retirement. A lot of retirement research looks at how can you change plan design to make people behave more optimally? And a lot of the research plans have now adopted. This was not my research, but it was actually the research of people that Josh worked with, this default bias that you see now with automatic enrollment that was completely generated by academic research. So there's a lot of time where the research can actually then be applied in practice. And for me, that's the most exciting type of research where you can see it translated and translated quite quickly. I'm going to a meeting on Thursday where half the conference is practitioners, and half the conference is academics, and we're talking together, and the academics or the practitioners say, hey, we're really interested. We see this happening, but we're not quite sure why, but we don't have the time or the resources to devote to looking into this question in detail. And that's where the academic goes. Well, this is fascinating, and I'll take that on, and I'll look at it, and it's a great synergy between the two groups. It does depend on your research area, and I'm not sure whether the people here can talk about the research they're doing, but there are lots of ties, and that's most satisfying when you see that it doesn't stay in the Ivory tower, but it moves beyond that.

## Jad Howell

Yeah, that's very helpful to understand. We can delve a bit more into that topic. I don't know, though, Ellen. I don't want to breach any confidentiality, but I mean, have you observed within

the Federal Reserve, Ellen, the use of academic research and having seen it be applied in a very practical way, absolutely.

### Ellen Longman

Absolutely. I think it's a big part of the reason why a lot of economists choose the Federal Reserve system over academic positions, because we're able to get people that if you look at their CVs, it's like these economists could have gone and taught at any R1 University, and they chose to come to the New York Fed or Reserve Board, et cetera. And a lot of them say it's precisely because of that. So even though our work is academic in nature and typically gets published in journals, and their promotion system is similar to that of tenure, where they get published in journals. It's almost always got some kind of policy implication and a lot of things like monetary policy, big decisions that the government makes various SEC and finger regulatory decisions are at least strongly informed by things that our group produces.

### Jad Howell

We had Seth Carpenter on one of our podcasts just a few weeks ago and watching him transition through the Fed and then obviously having gotten his Ph.D. at Princeton, and then finally, where he is today, as the research had at UBS, it was apparent to see right how the two really work hand in hand. And throughout an individual's career, you can participate in all aspects of that kind of virtuous cycle. Maybe we could spend a little time right now talking about the admissions process. I know for students, right? Who might have an interest in this particular career getting into Ph.D. programs, especially those? Josh, for example, that you're presently in that's really hard, and admission rates are what, 5% or less in many instances, if it's even that high, I don't know.

### Ellen Longman

1%.

### Jad Howell

1% okay, there you go. Maybe and Josh, you mentioned it at the outset. You alluded to persistence and accepting, perhaps defeat on the first application, but then staying with it. Maybe we'll go back to you, Josh. Can you describe a little bit the process you went through and maybe comment generally on that process as an outside observer coming in? That would be helpful.

### Josh Hurwitz

Yeah, absolutely. So there's a couple of components that Ph.D. admissions are going to be looking for. So the first is just, you know, a strong academic resume. So, you know, it is important to do well in your classes, particularly those that are more catered to the type of program that you want to enter. So if you're doing economics or finance, then you want to do well in your economics and finance classes. I would say Professor Agnew provided this advice for Ellen and myself, but as many, particularly on a quantitative path, like economics, as many math courses as you can take, and econometrics courses and courses that demonstrate that you're comfortable with sort of the quantitative fields. You want to get those on your resume, especially coming from William & Mary, where, like I said before, we don't necessarily have that structured pipeline into some of the top Ph.D. programs. You want to stand out. The first



way you can do that is by taking those classes and doing well in them. The second thing that I would say is showing that you've invested yourself in academic research before you enter a Ph.D. Program. They really want to see that, you know, first of all, what you're getting into. You don't just think you have a curiosity for research, but you've already familiarised yourself with research and preferably have shown that either you've had the opportunity to work with a professor on research or engage in research of your own. So I would say that's another huge piece is having that research experience and then sort of tied into that is when you apply, you're going to need recommendations from typically three advisors or mentors. And so whether we like it or not, that ends up having most people would say I can't directly prove this, but that's going to have an importance on the programs that you're able to get into. And so as much as you can have sort of a solid advisor from William & Mary, if you're a William & Mary student, and then as much as you can try to diversify that. So maybe you spend some time at a research organization after or, you know, at a bank doing private sector work. You want to have a well-rounded sort of group of letter writers who can speak to your character, speak to your work ethic, speak to your potential in a Ph.D. program. So those are the main things. There's extra pieces of this, too, like you have to take entrance exams, either the GRE or the GMAT, and then some of these top places it ends up being a rat race where the typical person is getting close to a perfect score if not a perfect score on the math part. I took the GRE two or three times until I could get to that level. So there's many aspects of this that you can directly influence, but there's also going to be some that are a little less out of your control.

### Jad Howell

I mean, it sounds intense, right. But it sounds like you also need to be very intentional. You can't approach this in a casual way and apply and cross your fingers and hope to get admitted. Ellen, I confess, as he was describing all the things I thought, well, Ellen's doing that. Ellen's doing that. Ellen's doing that. I mean, do you want to maybe talk a little bit about your experience thus far and any additional thoughts to Josh's?

### Ellen Longman

Yeah, I guess I would say I definitely agree about being intentional. I think that trying to go the Ph.D. and professor route is less similar to the sort of government consulting and marketing jobs in the business school and almost more similar to when five-year-olds are like. I'm going to be a ballerina. I'm going to play in the NFL. It's like you can do it. People do it. But you have to be incredibly strategic and kind of sacrifice a lot of normal things to get there. And there's, of course, that probability distribution of like, you might have to take the GRE two or three times because you just happened to get the one question you didn't know. So I haven't done the GRE yet. But yeah, what I focused on for my first year was essentially hanging on during the pandemic while just learning all the new programming languages that I had to learn from my job, the data sets I was working with kind of how to be a really good RA, confirming that I liked research. And then, at the same time, I'm taking a class at Columbia that I needed. And so I just recently finished that up in this spring semester because the Fed has a tuition reimbursement program there. So I sort of strengthened my math background and got good at coding and research. And then this summer, I'm going to focus on studying for the GRE, and then next fall, maybe take another class and get ready to actually write the applications.

## Jad Howell

Wow, I mean, you talk about sacrifice and making sacrifices. Ellen, can you share a few things just for our students that they might be accustomed to enjoying or doing that you've had to sacrifice. I mean, I think it might be helpful for them to hear that.

## Ellen Longman

I guess just the working hours, probably. I would say that if there's something that needs to be done, like investment banking, if someone told you to make a PowerPoint, you knew how long that was going to take. But in research, if you're looking for a cool result, you might have a smaller level. If you're new to coding, you might just have to figure out whether something's even doable with the language you're using, whether it's more efficient in a different way or the more common thing now is just you get to the end, and you have a result, and it looks really cool. And you're like, I could send that because it looks cool. But is it just cool because it's wrong? If it's expected, then you pretty much know what you have when you're done. But that's like then you didn't really find anything. So you just have to kind of be the person who says I'm going to check out one more time. I'm going to prove that this is right one more way. So when you send your output to an economist, you can say here's the result. And here's the five reasons why I think that it's correct. And here's the code, and it's organized, et cetera. That means you're not going to go out on a Friday night, really. Or maybe you do work on a Saturday or something. And during COVID, I guess the opportunity cost is lower.

## Jad Howell

Yeah, the silver lining, I guess, right.

## Ellen Longman

Yeah.

## Josh Hurwitz

Piggyback on that, too. I think our generation, especially, has become so accustomed to instant gratification, and it might not necessarily be in the actual sort of work-life balance on a given day-to-day. It's more also, the mindset of this is not going to be something that happens quickly. This entire process is a marathon. And so there's all these incremental points that you have to hit along the way. But you're going to have to be patient and recognize that this is a process. So it's part of it, too. It's adapting to that sort of mindset and accepting that.

## Jad Howell

That's great, Josh. Very good perspective, Professor Agnew.

## Julie Agnew

Yeah. And I just wanted to say, too, just in terms of the size of the programs, they're much smaller than other graduate school programs that you might apply to. I'll let Josh and Ellen kind of say what the size of their programs were, but the program I went to, I think we had four people in the whole Ph.D. program for finance and the other programs that I was applying to, they were a similar size. So you're competing. You've got people around the world that would like to get these jobs. And in addition, a lot of the people that come from other countries, their toolkit in terms of mathematics and statistics tends to be better than the typical American

student that's in Phi Beta Kappa. And I think that that's true. But let me defer to Josh and Ellen if you could say if that's the case.

### Josh Hurwitz

100%, my program at Harvard is closer to 30 people per class. But as Professor Agnew stated, there's people in my class who were math champions of their entire country. And this is the type of caliber of people that you're going to see. Even with all the work that I did, the crazy journey that I had to get into that program, I had imposter syndrome from day one, just being in the same class as people like this, that's another aspect of this that you just have to be comfortable with. Most of the people that are going into these programs are sort of the type-A people who are used to always being on top and succeeding. And many of us might find that wall where we no longer can outwork people and to compete. You almost have to recognize that you're getting to this level of just incredible talent that you're surrounded with, which can be a challenge. But also, if you look at it, the right way is an amazing opportunity to learn from other people and work with really talented people.

### Ellen Longman

I'd second that. I'm obviously still just in the pre-doctoral stage, and even in my program, I know one of my coworkers is a chess champion in Mongolia. Another former coworker was actually an Olympic athlete in fencing and had, like, a 4.0 math econ somewhere. So these are very impressive people. And honestly, I am happy to even be in the same room as them. And I found that the way that I get around that is I focus on not how can I try to be as good as everyone and everything, but more like, just be happy to be there with them and then think about what really unique questions might be arising from my experiences. What kind of questions am I interested in that other people might not even care about and just kind of like, focus on those things and focus on what you can do and just kind of compete against yourself and use it as a great opportunity for that.

### Josh Hurwitz

I think that's really great point that Ellen made and another thing to tag on. Just so it doesn't seem like we're painting this to be an impossible path. It's not necessarily the case that the people that have the most regimented perfect math background end up doing the best in research. And in fact, in many cases, it's people who sort of think outside the box or are able to approach a question in a different way, but might not be that Grandmaster chess player that are able to succeed in research. So I think it should be sort of something that, you know, going in that you're going to be surrounded by these unbelievable people. But don't let that be what discourages you from approaching this because you might be able to look at problems in a different way and have a lot of value in the process.

### Jad Howell

That's incredibly helpful and great insights. It seems like I've been trying to, as you speak, identify what that one distinguishing characteristic is that allows Josh to be admitted into Harvard and Julie to have accomplished all she has as an academic. And Ellen, of course, you're well on your way. And I can't really identify that one thing. It seems like someone referred to this being a marathon earlier, and it just seems like it's in totality, right. You need to be well-rounded. You need to have had these research experiences beforehand, coupled with

intellectual curiosity, a willingness to sacrifice, and also having developed those technical skills to be successful once you are actually doing the research. And it seems like all those boxes each of you either have or you're continuing to check. And that is what allows you to ultimately be admitted right when the time comes. So I think that's really helpful. I know it has been for me just to learn more about this. We're getting towards the end of our time, and I thought maybe I could ask each of you a final question, and it's really just what parting comments would you give to the student listener who has intentionally turned on this podcast because they have some glimmer of some idea that they want to possibly go down this path? What would be your parting comments? And maybe Ellen will begin with you and Josh, and then we'll end with Julie.

### Ellen Longman

I would say never give up on something you can't go a day without thinking about. I saw that quote on Pinterest somewhere, but it's very relative.

### Jad Howell

That's a good one.

### Ellen Longman

Don't let the odds stop you, or don't obsessive over the rates. Just follow what you really want to do. And it does work out for people. It worked out for Josh and Professor Agnew, and I think it can work out for William & Mary students.

### Jad Howell

That's great. Thank you, Ellen. Josh?

### Josh Hurwitz

Absolutely, I would say the first thing is if you're even somewhat interested in this path, be proactive as we sort of laid out here. This is something that you need to be intentional about, and also, you're at a great place for this path because there's a lot of William & Mary professors who are waiting for a student to come into their office and express interest in this path. So there's a lot of resources available to you. You just need to go out and find those resources. They're not going to come to you. The second, I would say, is if you're prepared to go down this path, just remind yourself that it's a marathon. It's not a sprint. It's going to be something that you're going to have to have some patience in pursuing and some humility and recognize that this is going to be a life investment that's going to take some time. And it's a process. And the third thing that I would say we didn't hit on this much is that there's a lot of different paths that you can take once you have a Ph.D. Especially in a field like economics or finance, you don't have to just be following this one tunnel into academia, which gets harder and harder to move forward. And as you move down that pipeline, once you have a Ph.D., there's a ton of opportunities in research organizations that are sort of academic adjacent, like the Fed, like the IMF, and policy institutions like RAND and AEI. There's also a ton of opportunities in private industry, so for people that want to do data science, there's just a huge amount of opportunity there. There's also lots of opportunities in finance. And so you don't need to feel like you're making sort of an all-or-nothing decision when you start a Ph.D. in one of these fields because there's a lot of opportunity for you outside of just academia.

## Jad Howell

Thank you, Josh. That's most helpful, Professor Agnew.

## Julie Agnew

Okay. Well, I would say at the end of this podcast, and you're still thinking, I wonder if this is for me. Professor Szykman has this word for it, and I forget, but I think she calls it the quirk. It's just a certain thing that what Ellen talked about. What Josh talked about, that you get excited when you learn new things, and there's a joy that comes with that. And I just remember being at William & Mary and picking my classes, and it was so hard because it was like a dessert buffet. And I wanted to take everything. And so, if you feel that way, this could be a really great career for you. And it really does. You have to use the brainpower. But if you're at William & Mary, you already have that. But grit is the thing that you really need to have because it can be hard sometimes. And it is a roller coaster. As you progress through it, though, it's easier to manage the ups and downs. You don't get as excited at the ups. And then if the data doesn't work, you go, oh, that happened before, and something else will occur. And then the last thing is just on what Josh said, go to the Boehly Center. Sign up to be a research assistant for a professor in the research program and try it out. It's always best to try something out before pursuing it full force. And I am so very lucky to have my life. And so, I hope that others can pursue this. And again, everybody should put Ellen and Josh's name, write them down and then just watch what happens over the next 20 years is going to be really exciting.

## Jad Howell

It absolutely will. Obviously, I feel like I'm surrounded by incredibly able and successful individuals right now, and that includes Jeff here with me. But it's been such a treat to hear your various perspectives. And again, I know our student listeners will very much appreciate this podcast recording and the time that you've given today. So thank you so very much for that. And, Ellen, we wish you all the best as you continue down this path. And Josh, in this next phase, and Professor Agnew, we'll see you in class.

## Julie Agnew

Thank you.

## Jad Howell

All right.

## Jeffrey Rich

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