

How to Build a Career in International Research

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Working in a western university begins with a PhD program, which is an essential first step towards a career in academia.

Rector of Moscow's New Economic School (NES) Ruben Enikolopov, Professor of the Massachusetts Institute of Technology Anna Mikusheva, as well as recent NES graduate Artemii Korolkov, who has enrolled in an economics PhD program at the University of Pennsylvania, and joint NES-HSE bachelor program graduate Anna Shchetkina, who has entered into quantitative marketing PhD program at the Wharton School of the University of Pennsylvania, all share their thoughts on how best to prepare to apply, how to choose a program and university, how research work is carried out in a foreign university and how to build a career after graduation.

What is the value of an international PhD program?

Ruben Enikolopov How do standard PhD programs work? During the first two years in any top international program, you'll learn from some of the world's leading academics who are

pushing forward the boundaries of scientific knowledge. You will only start conducting your own research work after two solid years of studying and exams. For the remaining three–four years, under the guidance of these academics, you will put forward your own ideas that test the limits of what we know. You can only get a feel for these limits in a foreign PhD program. An additional, but not always obvious, benefit of these programs is that you will be able to network with people, your classmates could become your co–authors or advisors. You will build social capital.

Anna Mikusheva Attending an international university gives you tremendous social experience. You will enjoy being surrounded by amazing, intelligent and talented people who are passionate about making the world a better place. I did not really experience this diversity in Russia while I studied at Moscow State University, even though I have great respect and love for this place. At Moscow State we were all pretty similar, because we had roughly the same life experience. America, on the other hand, is a melting pot, and this is especially evident in its universities. People with different opinions and backgrounds from different countries go there to study. For the first couple of years I was left speechless by the broad spectrum of their ideas. Everyone was so unlike one another that it was impossible to predict who would say what. This life experience is one of the things that made me think of staying in academia just because it was nice to be in this environment.

Anna Shchetkina During my bachelor's, my goal was simple: I needed to pick my courses, do my homework, pass my exams and get good grades. After five years of studying for a PhD, after which I hope to become a professor, I'll have to write papers that will advance the knowledge of the whole world. No one teaches you this during your bachelor's degree. A PhD program will give me this unique opportunity, to have people share their experience and tell me what I need to do to create something genuinely new instead of simply regurgitating someone else's work.

Artemii Korolkov My main hope regarding a PhD abroad is to conduct my own independent research. While studying at a bachelor's or a master's program it's quite difficult to work on the same thing for a long time without getting distracted by other things. A PhD gives you this opportunity and that's why most people do a doctorate.

Ruben Enikolopov I would like to warn graduates that starting independent research activities does not happen so quickly and painlessly. For the first two years, students, of course, are already beginning to put forward new ideas, but still devote more time to their studies. PhD students even have something called "third year depression," where courses come to an end and they have to come up with new ideas on their own and that's very difficult. It passes for most people when they stick to something and eventually break down this wall.

Anna Mikusheva I agree with Ruben, I think he is talking about patience and grit. We always want to get results quickly. While working in academia, I was surprised to learn how much time it takes to produce anything worthy. If you set yourself a goal and achieve it on the first try, it probably means the problem was too easy and there's no point in writing a paper about it. If you solve the problem on the fourth attempt, for example, then it's more promising but still potentially not too interesting. You can work for months, sometimes years on genuinely interesting questions, but when you find the solution, it will be a thing of beauty. Like many, I also became depressed in my third year, it's a really difficult time in any PhD program. It

stems partially from the fact that we expect to be successful very quickly. You need to understand that scientific research takes a long time and time also defines how deeply you can delve into something.

How to prepare to apply for an international PhD program

Artemii Korolkov There are technical requirements, you need to prove your knowledge of English by taking an internationally recognized test, for most programs you also need a sufficient GRE General scores in math. However, recommendation letters from your professors are the most important thing. You need to communicate and work with your recommenders for quite a long time to get them. I would recommend that you start off by arranging to get these recommendations, and only then sitting your exams, writing cover letters and selecting a university.

Anna Shchetkina Yes, getting recommendation letters really does take a long time. It took three years for me to get mine, I worked with my professor as a research and teaching assistant. However, the thing that surprised me the most in the application process, was how much time I spent having interviews with universities. I had finished submitting all my paperwork by December, and I had interviews with foreign universities from January until March, all of which I had to prepare for. Once the school has taken a decision and sends you an offer letter, there are going to be even more conversations, because now you get to know your professors and discuss your interests and projects with them. This final stage of the enrollment process is crucial for your further study at that university.

Ruben Enikolopov Getting the recommendation letters is the key element of the application process. Your professors take into account all the aspects of the students' work, including their skills as research assistants. But the most important thing is how students carry out their own research. Thesis papers are still in progress in the autumn or beginning of winter when recommendation letters are usually written. However, students are already preparing to write them, and professors usually describe how well this is going in the recommendation letter. In these letters, it's not enough simply to say that a student is very intelligent, asks good questions and gets decent grades. There need to be specific examples, for instance, "she is embarking upon her research work, look at this great idea she has and the superb way she is developing it." Students should start working on their degree thesis as soon as possible to give their professors something to write about.

Now for a bit of cynical advice: at least one letter should be from a professor whose published work is well-respected enough to make his recommendation stand out to those who read it. If your letters are written by professors who do not publish at the international level or young academics who are yet to establish themselves, it could reduce your chances of getting in.

Anna Mikusheva University admission officers want to know who can and will conduct research and you need to prove you fit this criterion. This can be reflected in your CV, recommendation or cover letters. You need to outline your track record. Students normally describe their projects, present published articles and speeches for conferences. It is very important to describe your experience as a professor's research assistant, if any. Many students have internships at government agencies involved in economic policy. If you have the opportunity during your internship to demonstrate your depth of thought and ability to

focus on a single important issue, you should definitely bring this to the university's attention. When choosing who should write you recommendation letters, think about what this person can add to what you've already put in your application. By the way, your recommendation letter doesn't always have to be written by your professor. If you have conducted policy research in the Central Bank, for example, it would look better if your adviser there gave you a reference than a professor you only took one course with. Predoctoral fellowships are also becoming more popular, these are research positions people take up before their PhD in order to gain research experience and good references.

How to choose a program and university

Anna Mikusheva If we're talking about economics programs, it's important to note that there is a hierarchy of schools. You should have a decent understanding of which universities are ranked best and how they got there. When applying, you'll normally take this into consideration and know where you want to go.

How do PhD programs differ from one another? First of all, by their students. As Ruben has already said, you'll be studying, co-authoring articles and communicating with these people your entire professional life. Most universities publish information on their websites about what their graduates do. If you really want a career in academia, you should aim at a highly ranked university, because these are where future academics are born.

The second difference - how many areas of economics are researched at the university, or how diverse the expertise of its professors is. Most of the top schools cover almost all branches of Economics well. This is very important because more than half of students change their specialization within Economics during their PhD. This is what I did, when after just a year and a half of studying I switched my focus from Micro Theory to Econometrics. If a PhD program gives you the opportunity to change your course, then it'll be pretty seamless. However, universities further down the rankings might not have active research faculty in some fields of Economics. It's more difficult to study what you want if your choice is limited.

Ruben Enikolopov If you choose to go to a university outside the top-10, you really need to understand how the specifics of that institution could affect your studies. It's very useful to talk to professors who know the nuances of different universities, because you can't always find this out from the information they publish on their websites. For example, it could turn out that the renowned academic you'd like to study under no longer works with students.

In recent years, some PhD programs in European universities have become much stronger. They may not reach the level of top-10 American universities, but they're already very competitive.

Anna Shchetkina In marketing, there is also a specific list of top-10 universities you need to go to in order to get a good job in the future. I applied to all these universities, without giving much thought to where exactly I wanted to go. It was only when I received offer letters and was having interviews with universities, that my research supervisor who knows the ins and

outs of these institutions really helped by giving me an idea of which schools taught which areas. For example, all branches of economics are represented more or less equally in leading universities, but the situation with marketing is a bit different. A top university could have a marketing program, but you may only be able to specialize in one area. So not every university will cover the specific field you want to study.

Artemy Korolkov People normally apply to quite a few universities. Anna applied to 10, I applied to 13. This is the average; some even send applications to 20 universities or more. When you get your offer letters and it's time to make a choice, you can always contact students and professors in these programs. This is what I did and they always replied quickly and gave detailed answers to all my questions.

Which skills are necessary to study on an international PhD program

Ruben Enikolopov First of all, you should have a desire to do research. You can always change your mind and work in the private sector after your PhD program, but you need to have this strong motivation at the start. Secondly, to do science, you must be stubborn and, to a certain extent, mentally resilient. Nothing works out the first time you try it. When you become a professor, things only get worse, because you will send articles to scientific journals and they will constantly be rejected. You will always be getting knocked back and this is both painful and unpleasant. You need to learn to pick yourself up and keep moving forward, and this is impossible if you don't enjoy what you do. In economics, the research cycle takes years from the initial ideas until the final paper is published. The only thing that can keep you going all that time is enjoying the process. Towards the end of your PhD course, you'll learn how to keep trying new ideas, reject the boring ones and push ahead with the ones you like. You'll also learn how to communicate well with people and get feedback on your work to improve it. You'll learn how to present your work in a way that's interesting to others. This is the social aspect of science you'll be instilled with during your PhD program.

Anna Mikusheva I completely agree with Ruben, determination and a positive attitude are very important. You will be constantly reminded of this. I would also like to say that you don't need a university degree in economics to enroll in an economics PhD program. We're always getting students who never studied economics before their PhD, instead having a background in mathematics, computer science or physics. If you're not an economist, it's very important to have a solid foundation in mathematics, and an interest in economics. Be ready, a PhD program will change your attitude to life and your understanding of the world. I would say that, in general, economists are quite cynical and rational people. Maybe it's because we understand the idea of stimuli too literally and strongly believe in the idea of the market. During the PhD program, we start thinking differently, there's even a saying "to think like an economist." It's hard to describe, you just need to experience it. Even if you enter the program as a mathematician, you'll come out as an economist.

How PhD research work is organized

Anna Mikusheva During the first years of study, students master the foundational courses that help them understand what economics is and where its frontiers lie. Then they normally start working as research assistants, helping their professors conduct research. These tasks can vary, for example, I used to check the proofs in my professors' academic articles. I also

tried to rewrite some of them more succinctly. This is how you learn to do research. It is learning by doing. Even students with a decent knowledge of mathematics write poor (hard to read and understand) proofs in econometrics when they do it for the first time. But you'll make a huge leap forward when you write your first papers under the supervision of a professor. Some students co-author a paper with their advisers. It is very beneficial to go together through the process of writing and publishing a paper. I had this great experience and had my first paper published when I was a student. Your research supervisor keeps you sane when you get your first critical reviews, tells you how to reply to them and how to communicate with the editor. Adviser's support is crucial in pushing you to keep working on your topic knowing that your work has been criticized. On a PhD program you're taught grit and persistence, then you will keep learning it yourself as you go on.

Ruben Enikolopov I agree, the most useful thing a PhD course can give you is the experience of writing a paper with your advisor, as well as observing how they do research and work on an academic paper if you're a research assistant. When students read papers that have been published, they look perfect. It seems like the author just woke up, had some coffee, came up with an ingenious idea, quickly jotted it down and voila! In fact, it's a very long and laborious process. Frequently, you'll start off with one idea and try to develop it, then in the process it can change or you can get completely different results to what you were expecting.

I was lucky. I wrote my first papers jointly with my research supervisor from NES and I gained invaluable experience thanks to her. If you're a research assistant, you can ask your professor for advice on how to go about writing a paper. If you plan on continuing your work in academia, you will have to write your main piece of research, your job market paper. It's what you need to "sell" yourself when applying for a professor's job. You can take note of how senior students write them. Learning through doing is especially important here. You can't write your paper using bullet points: first do this, then do that. The ability to write a research paper is something that can't be taught, you can only learn this through experience and by example. The more cases you see, the better. There are many seminars in PhD programs where students and graduates discuss their raw ideas. Watching how these works evolve is also a very useful experience that can teach you a lot.

The career benefits of doing a PhD

Anna Mikusheva Our graduates have three paths into employment. Some of them lead to academia. They either do a post-doctorate or embark on a tenure track: they become assistant professor, associate professor and then get tenure (a permanent contract with a university) and become full professors. This is the standard academic career path.

The second direction involves working in various government agencies, such as the Central Bank, Federal Reserve, International Monetary Fund, Justice Department etc., all of which are in need of economists. There you will be able to carry out the research that underlies policy decisions.

The third type of career is working in the private sector. People normally choose investment banking or consulting. There are also more and more opportunities cropping up at tech companies like Amazon and Uber. They need economists to assess supply and demand, as well as explain how best to distribute resources.

Ruben Enikolopov Yes, in recent years powerful research centres have emerged in tech companies. People who work for the likes of Amazon and Microsoft basically become academics. Yes, they deal with issues these companies are interested in, but at the same time, they publish papers and can go back to university afterwards. Although it's normally a one-way path going from academia to the private sector, you can't really go back. The difference between working at a university and a big tech research centre is that in the former you will teach while conducting your research. In tech companies, you will take part in applied projects, but you'll spend a large portion of your time carrying out academic research. We can call this the fourth, niche career path. This is only possible in the top tech companies, but research departments could continue to spring up in private companies.

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