

# An unofficial guidebook for PhD students in economics and education

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This is an *unofficial* guide to surviving and thriving in the Economics and Education PhD at Teachers College. This collects a series of advice that we hope could be useful in making your time at TC as successful as possible. It is a living document and your input is solicited. Please email any suggestions or other input to [eble@tc.columbia.edu](mailto:eble@tc.columbia.edu).

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# Outline of this guide

In this guide, we provide the following pieces of guidance:

1. Advice about surviving in a PhD program
  - a. Overall goals to keep in mind for what to aim to get out of the PhD
  - b. General PhD-specific advice (applicable in all years, to be read early and often)
  - c. A list of web resources
2. TC-specific advice
  - a. Year-specific PhD advice (e.g., what to do in year one, in year two, and so on...)
  - b. A list of resources here at TC to help you on your journey.
3. Firsthand accounts from students

We want to be clear at the outset that this is neither official nor required advice; rather, it is subjective guidance on “best practices” to help students successfully navigate the PhD, get the most out of it, and are well placed, upon completing the PhD, to find a job in the labor market. Be a critical consumer of it (and of all information you come across!) and use only what seems useful.

## General advice

### Overall goals for your time in the PhD

Upon completing your PhD in the economics of education, you should:

- Be able to do statistical analyses with causal inference
- Know the frontier of research on at least two subjects within the field
- Be able to confidently present work to both academic and policy audiences

As a professional, you should aim to use the PhD to:

- Gain skills, knowledge, and experience that will be valued in the labor market
- Learn about the labor market and where you (would like to) fit into it

As a person, you should take advantage of the time in the PhD to:

- Test your interest and skill in different professional fields and topics of interest in order to find a career path that will make you happy / fulfilled
- Build skills to make you a more effective, happy, and healthy human being

## General PhD-specific advice

To be read early and often.

### Invest in yourself

- The PhD is a fantastic time to build skills – you have copious unstructured work time and few time-sensitive deliverables. Use this freedom to invest in key skills that will pay dividends no matter what you do after the PhD. A few skills worth investing in:
  - *Coding*: anyone working in applied economics or statistics needs to know how to code. Learn Stata plus one other language – either python, Matlab, and/or R.
    - *Corollary*: Learning to code means doing a project in that language. Do not simply sit down to “learn” a language, or you risk a high chance of failure. Rather, find a task – for example, learning how to make an animated plot of the returns to education over time using the *ggplot* package in R – and execute it.
  - *Organization / getting organized*. You are going to be asked to do many challenging things – do research, take classes, teach, RA, attend seminars – and you will not succeed if you don’t learn to use your time carefully. Two nice resources for improving your skills related to organization/time management:
    - [“Getting things done” by David Allen](#)
    - [“The Seven Habits of Highly Effective People” by Steven Covey](#)
  - *Presentation skills*: no matter what job you do after the PhD, you will need to learn how to present professional material to diverse audiences. Get lots of practice doing this – in seminars, to peers, to lay audiences. Practice makes perfect. A few key resources on this:
    - [“Pitch Perfect” by Bill McGowan](#) (book)
    - [Some Pointers for Preparing Presentations by Zettlemeyer](#) (PPT slides)

### Your productivity is something you can control

- You are not equally productive all the time. Your biological prime time is the time of day when you are most awake/able to tackle difficult tasks. Use these online resources ([resource 1](#); [resource 2](#)) to figure out when this is, then protect it ferociously for your most important work (e.g., reading, hard papers, coding, writing).
- Protect this time from distractions too! No texting/facebook/etc. Use <https://freedom.to/> to shut off the internet temporarily on your devices. Or just put your phone in airplane mode and turn off your wifi when you’re getting stuff done.
- You work way better with sleep, good nutrition, and exercise. The PhD is a great time to slough off old habits of too much soda/junk food and too little sleep.

### Use this time to figure out what you want to do when you grow up

- This is your chance to try different fields; contrary to popular belief, faculty do not care whether you go into research. **They want you to find a job that makes you happy.** If you are considering non-academic jobs, take a summer or two to do an internship in a

job that interests you to try it out and see if you like it. There is no penalty for trying this early on and deciding you don't like a field and want to do something else.

### Develop expertise in 1-2 fields of interest

- Your PhD is a chance to become a national expert in one or two topics. In writing your dissertation, you will spend a lot of time reading what has already been written. This is an amazing opportunity to learn a lot about something you care about. Choose this topic wisely, based on what excites you – even if your research idea doesn't work, you will have this knowledge as something that you can market when you're looking for jobs
- Once you have picked your fields, stay abreast of topics in the news and current policy debates related to them.
  - Read the news and blogs in education (Inside Higher Ed, Chronicle of Higher Education, Education Next, Ed Week) and economics (The Upshot, Marginal Revolution, ...) and search for other specialized blogs in your field.
  - Consider going to a professional conference in your subject area in addition to academic conferences - this can be a good way to meet people, better understand current issues, and potentially develop relationships that could turn into research collaborations.
  - Set up Google Alerts to notify you when something related to your field is trending (<https://www.google.com/alerts>)
  - Look for related articles in journals and working paper series (details below)

### Keep in mind there are increasing returns to research

- There is a long learning curve to doing research; even assistant professors are still acquiring lots of skills. This means that you should not infer anything about your ability from how difficult the first 2-3 years are.
  - *Corollary:* people generally like things they are good at. It will take you a long time to get good at economics research, so do not infer that you do not like research from the initial (and continuing) difficulty of doing research

### Normalize struggle and failure

- Most ideas fail. Even for Nobel Prize winners. Get used to trying out ideas, having them rejected, and then looking for new ideas to try.
- Read this [advice from David Weil on looking for research ideas](#)

### Treat the PhD like a job

- Set working hours for when you come to the office/library/sit down at your home desk, when you leave, what days you are working and what days you are taking off. Make it regular. Many who drop out of the PhD make the mistake of treating it as a totally unbounded canvas where they can take off for days on end, or work only when they are "really feeling it." This generally leads to failure. The people who most often succeed work steadily and incrementally, putting in their time in a structured fashion no matter

how they are feeling, and taking regular intervals to relax/rejuvenate. This is a marathon, not a sprint, and having good pace is key.

### Keep the future in mind

- In 5-6 years, professors will be writing recommendation letters for you which will play a large role in what job interviews you get. This will contain a (rosy) account of your time at TC and the skills and characteristics you have demonstrated. Make it easy for professors to write a really good letter by being professional, organized, and excited about your work when you meet them.
  - Corollary: the PhD is hard and it is emotionally trying. You can ask your advisors for advice, but do not look to them to be your therapist. See the advice below about getting professional therapy (the lead: think of therapy as preventative care and an investment in yourself).

### Most of the learning happens with you

- Contrary to popular belief, there is no magic PhD fairy dust that gets sprinkled on you that turns you into a PhD-level economist. Rather, over five years you work hard to learn and then practice what scholars in the field do. This involves struggle, asking for help, and a slow road to improvement.
- Do not expect your teachers to “impart” the knowledge on you. At the PhD stage, you are responsible for your own learning, and the professors are here mostly to help guide you towards the right papers and to help you learn how to read them.

### Your main job is research

- The medium-term goal you should be focused on is writing a paper that will answer an interesting question and provide new knowledge to the world (ideally, it will also be of sufficient quality to be published in a good journal).
  - Even if you’re not going into academia, the process of conceiving, writing, and selling this paper is the core of the PhD and you will learn tons of useful skills (coding, writing, presenting) along the way.
- You should take classes in your first few years to learn skills, but you should be pretty much done with classes by the time you start your third year of the PhD.
  - Avoid the temptation to take extra classes, either on subjects that are only marginally relevant to you or as a substitute for the hard but necessary work of starting to come up with research ideas

### You are a seller, not a buyer

- In the PhD you will accumulate skills and knowledge. At the end of it, you will search for jobs. If you plan on getting a job in a field related to your PhD, make sure that the skills and knowledge you acquire are both interesting to you and are likely to be rewarded on the labor market.
- To determine what skills are desirable/likely to be rewarded, look at
  - *Job postings for jobs you are interested in*, and look at what skills/experience they require from applicants

- *The CVs / resumes of people who are in these jobs* (look at LinkedIn for private/government jobs, and CVs posted on people's personal websites for academic jobs). Work backwards from their current job: what did they do before this job? Before that job?
- Once you have figured out what skills successful people in your chosen line of work have and what steps they have taken, sketch a plan of what you need to do to chart your own path to success.

### Advice for international students

- For those of you who are international students, you may be coming from educational systems where you were closely supervised by your professors. Within the US system, the onus is on you to self-organize and reach out to your advisor(s) for guidance as needed.
- If you are unclear about the rules or expectations, ask. Professors assume you know a lot, but you will not be judged for asking for more information/clarification.
- If English is your second (or third, or fourth, ...) language, consider reaching out to peers/fellow students who would be willing to provide you with feedback on your presentation skills.
  - [They Say / I Say by Graf and Birkenstein](#) is a great reference for how to compose academic writing in English
- Maintain regular contact with the [Office of International Services](#) to ensure you have proper documentation and understand your responsibilities and requirements relating to both your visa status and any internship you may pursue while in the US.
- If you need help in putting your CV and Cover Letter together, consider reaching out to [Graduate Writing Center](#) and/or [Career Services](#). They can help with document reviews and even conduct mock interviews with you to help you practice.

### Self-care

Use the PhD as an opportunity to invest in yourself personally as well as professionally. There are two good reasons for this. One, in the production of good research, physical and mental health are complements to your own hard work. Two, the PhD can be very rewarding, but it is also quite challenging, both academically and, for the vast majority of students, personally/emotionally. Below is some advice on how to boost your mental and physical health and prepare for/confront some of these personal challenges you are likely to come upon.

### Seek and build diverse networks and forms of support

- Your faculty advisor(s) and peers in the Program should not be your only source of professional and personal support. Find a peer group beyond the program and reach out to them regularly. Such a group can be found through a common hobby (yoga, pub trivia, pick-up basketball), interest (politics, food, music), home town/country, or through the regularly held graduate student socials.

- Expanding your network beyond your immediate TC community will make you feel more at home and have long-term benefits in your professional and personal future.

### Consider seeking prophylactic (preventative) mental health care

- You should think of talk therapy with a professional psychologist as a way of investing in yourself. There are several good arguments for this. A few of them:
  - *Therapy is a great option to improve your efficacy as a person.* Work with a good therapist can help you feel and perform better. We all have unresolved issues from past experiences, and your time in the PhD is a great opportunity to improve the way that you deal with stressors and how you interpret the inevitable challenges that life and work throw at you. An important input into the production function for research is your own happiness and enthusiasm. Therapy can greatly increase these.
  - *The PhD can be very demanding.* At some point in the PhD, many students will fit most of the criteria for depression. This is normal – the work is hard, the way you learn to do it is to (productively) fail, and getting used to this is, for most people, emotionally challenging. Having a relationship with a therapist will help you deal with this and minimize the pain and disruption it causes.
- You can find this kind of doctor through the [Columbia Health Portal](#) or [get confidential help at TC](#)
- **For immediate help**, call
  - The National Graduate Student Crisis Line: 1-800-GRAD-HLP or 1-800-472-3457
  - The National Suicide Prevention Lifeline: 1-800-273-8255
  - If your life is in danger, call 911

### Work on your physical health

- Just like mental health, physical health is also an important input into how productive you will be, from energy levels to happiness. Find an exercise routine that works for you and stick to it. Membership at the Columbia gym is cheap and it has good hours, the bike path alongside the West Side Highway is great for running and biking, and the city is full of classes for yoga/pilates/spinning/you name it. There are increasing returns here also!

## Resources

Here is a list of resources from others that may help you on your journey.

### Overall

- Masayuki Kudamatsu's [fantastic compendium on every stage of life as an economist](#)
- Claes Backman's [similarly great \(but different\) compendium](#)



## List of scholarships to apply for

- Spencer Foundation [dissertation fellowships](#)
- A [collection of fellowships and funding sources](#) from the American Economic Association
- A [list of scholarships](#) for PhD students in education

## Documents on how to build PhD-related skills

- Read and re-read [Jesse Shapiro's slides on how to give an applied micro talk](#)
- His [document with Gentzkow on how to code](#) is also a great reference
- Writing advice [from John Cochrane](#)
- Writing advice [from Michael Kremer](#)
- Masayuki Kudamatsu's [fantastic compendium of Stata advice and help](#)

## Advice from others on how to survive in the PhD

- [Matt Pearson on getting through the first year](#)
- Useful (ish) books on making the most of the process:
  - [Getting What You Came For](#)
  - [A Guide for the Young Economist](#)

## Resources on the professional skills you should to pick up

- **How to present** (a repeat from earlier in this compendium)
  - [“Pitch Perfect” by Bill McGowan](#)
  - [Some Pointers for Preparing Presentations by Zettlemeyer](#) (PPT slides)
- **How to code**
  - **Learn Stata** ([notes from Alex Lembcke](#)) or **R** ([guidebook](#))
    - If you have time/energy, also learn [Matlab](#) or [Python](#)
  - **Tools to help:** use [www.linda.com](#) (TC/Columbia has a subscription) and supplement this with Khan Academy videos on YouTube
  - **How to debug:** if your code isn't working, remove one line, try it again; remove another line, try it again. Continue until the problem is fixed.
    - **Corollary:** never change more than one thing at a time, because you won't know what the problem was (or what is was you did that introduced a new one!).
  - **Look it up:** there is tons of advice on the internet. For basic topics, look at the guides [here](#). For advanced topics, look at <https://stackexchange.com/> and <https://stackoverflow.com/>

# TC-specific input

Here is some advice specific to the Economics and Education PhD program at Teachers College.

## Main resources

There are two main resources for PhD students in our program. They are:

- [The program guide](#). this has the official information on what the steps are to complete the PhD and other administrative information
- [The program worksheet](#). this has the list of course requirements you need to fulfill to earn your degree, which doubles as a list of Econ & Ed-related courses you might be interested in. Consult this first when choosing your classes.

Read these early and often to make sure you are on track to complete the degree.

## Year-by-year guidance

This section describes what to do at each stage of the PhD. Professors will meet with you at the beginning of your first, second, and third years, and again at the end of your fourth, to go through these, but it pays to read them in advance and review these from time to time.

### Year 1

In year one, your focus is on coursework and adjustment.

- **Courses:** take PhD-microeconomics with Professor Peter Bergman [EDPE 6151; note that this course is not offered in AY (academic year) 2018-19, but will be offered again AY 2019-20], labor economics with Professor Judy Scott-Clayton [EDPE 6052]; new faculty member Professor Jordan Matsudaira's Advanced Economics of Education [course number tbd] and his Applied Econometrics in the spring [course number TBD]
  - Depending on what math/statistics skills you are coming in with, consider taking an advanced statistics course in the fall. This takes some looking/asking around to find what's most appropriate for your level (see the advice from students at the end of this document for some ideas), but is well worth the investment. A LOT of what you're going to do in the next 4-6 years (and beyond!) is statistics.
  - A few notes on other courses you might be interested in:
    - Causal Methods (EDPE 6023) will be offered in Spring 2020.
    - Resource Allocation (EDPE 4055) will be offered in Spring 2019.
    - Education, Privatization and School Choice (EDPE 4155) will be offered in Fall 2019.
    - Professor Sarah Cohodes's policy evaluation class (EDPA 6002) is a great course to take for those who have no prior exposure to causal inference.
- **Research:** start coming up with ideas. Consider using [the template here](#) to guide this work. How to use the template:
  - Fill this in once per week
  - Run it by another grad student
  - Then run it by your advisor or a faculty member who will listen (pro tip: don't go to the same person twice in a row)
  - Take copious notes on why it's a bad idea (this is how you learn what the discipline likes)
  - If they like it, do what they say, then take it to someone else
  - If they don't like it, start over (don't take it personally - everyone has bad ideas, the PhD is the process of extracting them to let the good ones come through)

- Do this throughout the PhD (and, perhaps, for the rest of your life as a researcher!)
  - Corollary: your ideas are going to stink at first; that's OK. The sooner you start, the sooner you get the bad ideas out of the way and the good ones start to bubble up.
- **Professional development:** the summer after your first year is a good time to take an internship. Apply for it in the preceding fall/winter!
- **Other tasks:**
  - **Attend seminars:**
    - Attend our in-house economics and education seminar. This is how you learn what good research is. Such seminars are exceedingly rare in the world and Columbia is a unique place in its ability to expose you firsthand to the frontiers of research in economics and education.
    - Pay attention to the seminars in the econ department in [applied micro/labor](#) and [development](#); go to the ones that interest you.
  - **Meet faculty:** you should identify every professor whose work is interesting to you, email them, introduce yourself, and ask for a meeting to talk about what they do. As a first year, you get permission to not know anything. In the second year and beyond, you're expected to be working on (somewhat) well-defined interests. The first year is the time to figure out who you gel with, what interests you, and to start building those relationships. You can see the list of faculty across Columbia who work on the economics of education [here](#).
  - **New York:** Figure out your life in the city; enjoy it (go to museums, restaurants, concerts), find a gym, figure out what makes you happy.

## Year 2

In year two, your goal is to start conceiving and executing research.

- **Coursework:** finish coursework, taking special care to gain technical skills (e.g., Matlab, RCT design, structural estimation)
  - **Once allowed, you should consider taking the first comprehensive exam.** These are usually given twice a year for Econ and Ed. Get it out of the way!
- **Research:**
  - Keep coming up with ideas using the template, shopping them around, getting better at ideas. Once you have one that people like, work hard and fast on it!
  - Read David Weil's [research pep talk](#) again (mentioned above)
  - Subscribe to table of contents emails for NBER working papers [here](#) and for all the main economics journals which publish education papers (*Quarterly Journal of Economics*, *American Economic Review*, *Journal of Political Economy*, *American Economic Journal (AEJ):Applied*, *AEJ:Policy*, *Journal of Human Resources*, *Journal of Labor Economics*, *Journal of Public Economics*, *Economics of Education Review*, *Education Finance and Policy*...). Skimming these abstracts and reading papers that interest you is how you learn what is good in the field, what questions are being answered, and how to write a paper.

- Try new research ideas, fail quickly, learn from failures, and try again
- Aim to have a saleable paper done at the end of the year
  - NOTE: usually, this means more than 10 failed attempts PRIOR to the successful one.
  - *Corollary:* start failing in September.
- **Find an advisor:**
  - Build an advisor-advisee relationship with at least one faculty member. This can be, but doesn't have to be, the one you were assigned when you entered TC. Feel free to shop around.
    - *Corollary:* aim to have one faculty member you talk to once a month in econ and ed (your advisor); have another you see at least once every other month, and one in the economics department or at the business school that you go to with hard questions.
- **Professional:** consider a(nother) summer internship or RA job

### Year 3

In year three, your main priority is trying to write papers, failing well at doing so, and trying again. For a primer on failing well, see <https://www.atlassian.com/blog/inside-atlassian/forget-fail-fast-just-fail-well>

- **Coursework:** Aim to complete the second part of the comprehensive exam. This is a written literature review that should motivate your dissertation proposal.
- **Research:**
  - Submit your first paper to conferences and for publication in a journal.
    - Your advisor can help you determine which journal to submit to.
    - Some possible and popular conferences include AEFPP, APPAM, AERA, AEA
    - When submitting/accepted to conferences, many associations may require or give discounts for membership, which give you access to various professional/networking resources and formal access to journals.
    - If accepted, there may be awards/grants available for students. AEFPP and APPAM often have student travel grants, and TC/EPSSA may also send out grant opportunities, so keep on the lookout for these.
  - Present your work in the TC seminar
  - Try new research ideas, fail quickly, learn from your failures, and try again (remember the template and process for culling ideas)
  - Attend seminars
  - Get your dissertation idea going and submit your dissertation proposal.
    - One issue with the dissertation is often data. If you are seeking data to examine your idea, make sure to start early. Be creative! Ask professors to see if they have access to helpful data. If you have to request data from an organization, always start early! Be prepared to have it not work out, so if there are multiple avenues, work on them concurrently. Collecting your own data may be prohibitive, but get feedback on that anyways.

- **Professional:**
  - Keep investing in yourself; get better at failing, picking yourself up, and trying again.
  - Begin looking for **external funding**. External scholarships can provide
    - A strong positive signal on the job market
    - Better funding (and/or fewer obligations) than standard institutional packages
    - Sometimes, they can offer additional networking and professional development opportunities
    - Furthermore, the process of preparing a fellowship application is good practice for writing grant applications later, can help provide motivation to focus one's research ideas, and helps students communicate more regularly with their advisors about what they are working on
    - See the list of fellowship sources in the non-TC specific part of this document, but note this is not exhaustive. Do a Google search for PhD fellowships, look at the CVs of successful people to learn where they got money (especially students currently on the job market), and ask for advice from different people.
- **Note:** this year is where people most often get lost; courses are finished and it's just you and the blank page. Don't get scared! Rather, with your advisor, set a schedule, deadlines, and deliverables. Even if you report "I have nothing" to your advisor every two weeks, checking in regularly and discussing the processes you are using to (try to) generate ideas will help you get better at it.

## Year 4

In year four, your job is to get the bulk of your dissertation done and start to get an idea for how you want to approach the job market (i.e., what kind of jobs you are interested in, what you need to have ready next year to be competitive for these jobs, what your backup plan is).

- **Administrative:** After the completion of coursework, comprehensive exams, dissertation proposal, and all other requirements (e.g., language competency requirement), make sure to apply for the M.Phil. Formally receiving the M.Phil. will allow you to be known as an ABD and "PhD candidate." It will also allow you to freely schedule your dissertation with your committee members once completed.
- **Research:**
  - Work on your dissertation; at the end of the year, it should be nearly complete
  - Present your dissertation and other work at conferences
  - If ready, go on the job market
- **Professional:**
  - Keep pushing. This part is really hard; you're on your own, you are probably getting feedback that some of your ideas aren't as great as you thought they were, and it will likely feel at times that you've been forgotten. Actively seek input from faculty and push hard.

- Figure out what job market (academic, private sector, government, think tanks, ...) you are targeting post-PhD. Think about what you want to do, ask your advisor and other faculty for input, and seek advice based on your chosen direction. If you choose to go for non-academic jobs, start networking / identifying firms and jobs. Use your LinkedIn network to arrange coffee meetings with people in those jobs. Keep the meetings short, project professionalism, and ask them for advice on how to get jobs like theirs.

## Year 5 and beyond

In year five and beyond, you complete your dissertation. You also apply for jobs and get one.

- **Research:** polish your job market paper, work on other papers. Prepare to graduate. Note that there is a lot of administrative rigmarole involved in submitting and having a thesis approved – formatting, scheduling a defense, making sure timelines are followed, etc. etc. Guidance is available [at the registrar's website](#) and we will discuss this when the time comes.
- **Professional:** go on the job market
- **Note:** the job hunt is also a super painful process. The department and your advisor will offer lots of help when the time comes in preparing and navigating this process. That advice will come in a separate document; there is also lots of advice available online.

## Deviations from the path

- If you're not sticking to this schedule exactly, **don't freak out**. These are only guidelines and most students make their own path. That said, if you find you're off course, reach out to your advisor/others in the program. Set up a meeting to talk about things. When you meet with them, be honest about where you are and what you want to do next, and they will help you get back on track.

## Resources at Columbia

- The [Office of Student Affairs website](#) has all sorts of helpful information for students
- The [Office of the Ombuds](#) is your first stop if you feel (or are unsure if) you have been the victim of some sort of harm, bias, or harassment and would like confidential help
- Resources for all things TC Ph.D. related:
  - [Program Plan Form](#) (Keep this updated with your courses. You have to turn this in eventually for M.Phil.)
  - A [compendium of administrative forms and policies](#) you should check from time to time
  - A list of [Defense Committee Requirements](#)
  - A [list of possible Ph.D. Sponsors](#)
- How to register for classes beyond TC (including NYU)
  - <http://www.tc.columbia.edu/policylibrary/registrar/inter-university-doctoral-consortium/>

- <http://www.tc.columbia.edu/registrar/pages/registration/cross-registration-for-tc-students/>
- Resources for those from underrepresented groups:
  - TC's office for diversity does great work to foster communities of sexual, racial, and ethnic diversity here. [Check their website](#) regularly for events and opportunities to get involved.
  - TC's Black Student Network (BSN) brings together graduate students of African descent. BSN organizes and hosts various events.
  - TC'S Association of Latin American Students (ALAS) is another student-led organization that helps students build their cultural and professional networks.
  - If you are an international student, consider connecting with others from your region who hold similar interests even if they are outside your immediate TC community. Engage with Columbia's regional centers like
    - The Harriman Institute for Russian, Eurasian, and Eastern European Studies;
    - The Institute for African Studies;
    - The Institute of Latin American Studies
    - and the many others at TC and on Columbia's main campus.
  - [7cups.com](http://7cups.com) offers free online therapy to students of color:

## First-person accounts from TC students

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The skills you learn will be valuable in the marketplace. If your dream is to obtain a tenure-track position, know that it is highly likely that it will be a difficult (and potentially long) road. However, that does not dismiss the value of your number-crunching, data-oriented, causal-inference approach to answering relevant questions. Know that if you fail at obtaining a tenure-track position, there are still many paths to success.

Among the most valuable time to me is the time I spent with other fellow Ph.D. students, especially more advanced Ph.D. students who have been through the grind. These are students who can provide advice not only on how they've dealt with processes and failures at TC/Columbia, but can also help shape your expectations going forward. This is the group of students who will identify with much of your frustrations, thoughts, and struggles. They will also be the ones to share relevant/useful advice and encouragement.

To me, the most unexpected aspect of my Ph.D. is the administrative burden. This can take various forms. If you are writing grants, running RCTs, or applying to conferences, there can be editing of proposals, contracts, and budgets, and other aspects that can feel repetitive or like an unproductive use of time. Internally, there can be a lot of forms to complete (and strict timelines and signature requests) you must follow to apply for your M.Phil. or comprehensive exams, defending your proposal/dissertation, making sure your defense committee complies to guidelines, applying for housing or funding, and other things. To these, I will say three things:

First, start early so that these do not become the barrier to productivity. Keep a strict schedule around these things. Second, always know who the contacts are and don't be afraid to ask questions. This is especially true for your dissertation-related questions, which can often be answered by whoever is running the Office of Doctoral Studies. Third, become good and efficient at administrative work. Whether you end up in academia or not, there will continue to be a lot of administrative work.

Here are some other keys to staying sane during your Ph.D.:

- *Speak up and speak often.* Don't be afraid to ask questions (even supposedly 'stupid' ones). Share your research ideas, no matter how bad they may be. When speaking to a professor, be as succinct and prepared with questions as possible.
- *Find ways to take classes you want to take.* Work with your advisor to customize your curriculum. If you do not find the classes you need at TC, look for classes at Columbia, NYU, CUNY, and even Princeton!
- *Coding will be a part of your life.* Take a lot of time to struggle with it early on and know that you won't be perfect at it.
- *Have time for other things.* You will be so busy at times with research that you forget you should have a life.
- *Be proactive with professors.* If you have questions or wish to pick their brains, get on their calendar early, informally catch them at the water cooler, or catch them at public events like the seminar. The more wisdom you obtain from them, the more productive your time will be.
- *Become really good at sharing your research.* Find ways to share your research ideas, results, and papers to as many people as possible. Practice speaking at conferences and seminars.
- *Build your network.* One of the more powerful tools in job-hunting will probably be your network. Do not be afraid to speak to (and give away business cards) others at conferences and other events. Ask them about your jobs, share what you are working on, etc. While most conversations will end up with little gain, there will be a few that can change your outlook, provide valuable resources, and/or result in lasting relationships.

Useful external courses:

- "Causal Inference: Methods for Program Evaluation and Policy Research" at NYU (Jennifer Hill) is an excellent complement to Judy's course.
- Courses from the QMSS program at Columbia can also be useful, but make sure it is relevant to what you wish to learn and use in your research. However, they are good at providing foundations for various data analysis techniques relevant to economics, including:
  - o GIS Spatial Analysis (QMSS GR5070)
  - o Data Visualization (QMSS GR5063)
  - o Regression Analysis of Temporal Processes (QMSS GR5016)
  - o Social Network Analysis (QMSS GR5062)
- Our students have also taken Econometrics at NYU (Donald Greene) and Columbia (Doug Almond) and Princeton.



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Advice on courses:

*Math Methods for Political Science*: Excellent course for those who do not have a strong math background. It teaches useful math techniques such as linear algebra, calculus, and optimization, basic knowledge necessary to study economics in general. I took this class in my first semester of the program and it really made a difference in my learning curve afterward.

*Probability Theory*: Offered in statistics department. This class covered the basics of probability theories, which are essential to understand microeconomics and econometrics (e.g. asymptotic theory, consistency, etc).

*Anything offered at QMSS*: lots of great courses here at varying levels of difficulty.

General advice:

- Getting a Ph.D. is like a journey in which you search your own identity as an independent researcher. As a graduate student, you have several years to dig deeper into yourself, a rare opportunity that is usually non-existing outside graduate school. It is a time to explore and identify what is important to you - what social issues you deeply care, why you care about them, how you go about them during and after grad school, and how you use your Ph.D. to address the issue etc. Your success as a researcher after graduate school is highly correlated with the extent to which you can solidify your identity as a researcher before obtaining a Ph.D.
- Read a lot of papers if you want to find a good research question. Good research questions will follow those who read a lot.
- Avoid taking classes from the third year as much as possible. Don't get "swayed" by courses that just sound interesting unless they are absolutely necessary for your dissertation. A third-year student should focus more on outputs rather than inputs.
- One great advantage of this program is flexibility. Unlike some other ed schools where students do not have much course choice, we can pretty much take any courses we like and we have excellent course choices taught by leading professors in the field at Teachers College, Columbia, and NYU. This program allows you to build your own portfolio that is entirely unique to you. Also, our program has a great network of professionals all over the world. You can literary connect with anyone in our field for help through our faculty, alumnus, and peers, another great advantage that isn't readily available at other ed schools.

## End notes

This is the end of the guidebook. Remember, this process is hard, but the returns on investment are high. People with PhDs such as yours make good money, have a wide range of job opportunities, and have transferrable skills that continue to be in high demand. Many of us believe that the tools you learn are also key ways to contribute the betterment of humanity. In short: you are involved in something challenging, but also very special.