

The Transition to PhD Research

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 - Tools and techniques to do frontier economic research
 - Knowledge of the state of the art research
- Now is the time to look forward to your own research
 - This lecture talks about this transition and points the way to some approaches and sources of information

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- **Research Topic:** A general area of interest that is defined narrowly enough to imagine becoming a local expert in it
 - International trade and wage inequality
 - Foreign aid and economic development
 - The Great Recession and the Financial Crisis

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 - Are there sufficient statistics in terms of empirically observable moments for the welfare gains from trade? What is the class of models in which these sufficient statistics hold?

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 - What was the effect of the construction of the U.S. interstate highway system on urban growth?
 - Are there sufficient statistics in terms of empirically observable moments for the welfare gains from trade? What is the class of models in which these sufficient statistics hold?
 - Can search and matching models account quantitatively for observed levels of wage inequality?

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- What are some possible strategies for selecting research ideas?
- For more discussion, see *The Craft of Research*, by Wayne C. Booth, Gregory G. Colomb and Joseph M. Williams, University of Chicago Press

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- What are the constraints that these frontier papers are bumping up against?
 - How can you relax these constraints and extend the research frontier?
 - How will relaxing these constraints change existing results?
 - What new results does relaxing these constraints offer?

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- What are the limitations of these frontier papers? How can you improve on them?
- How do the research questions asked in these papers relate to popular economic discourse about the same issues? What are these papers missing? What research questions are they overlooking?

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- What matters is applying these outstanding technical skills to convincingly answer compelling research questions

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- Build the simplest model possible to capture the phenomenon that you are interested in. Abstract from the inessential to let the essential speak

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- What instruments would satisfy the exclusion restriction of only affecting the outcome of interest through the mechanism in question?

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- Can you explain non-technically in two minutes to the person on the Clapham Omnibus (or more importantly to an economist in another field) why they should care about your findings?

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 - Do your findings have implications for policy?

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- The final product is typically not the initial product
 - Research often involves many dead ends and the reworking, revising and throwing away of material

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- At the same time, do not pose a research question that is so challenging that you cannot answer it convincingly

Research Advice

- Keith Head from UBC has useful advice for research on his web page
- Jonathan Dingel from Chicago Booth has useful advice for research on his web page
- Jonathan's advice for meeting with your adviser is
 - Bring an agenda to meetings
 - 30-minute meetings are sufficient to discuss about three substantive points in meaningful detail
 - Write up a page of notes beforehand to ensure that you discuss those points
 - Follow through after meetings
 - At the beginning of a meeting, tell your adviser what you did to implement or address concrete suggestions that she made at the previous meeting
 - After lunch workshop presentations in your field, follow through in meeting with participants in those workshops to get their more detailed feedback

Productivity Advice

- To make progress on your research
 - Working hard is a necessary condition for success
 - Plenty examples of incredibly intelligent people who are not successful simply because they do not work hard
 - Other faculty members who appear brilliant are indeed brilliant but they also work very hard

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- The secret to making progress on important tasks is building them into your daily and weekly routine

Productivity Advice

- The widely-acknowledge seminal book on productivity is
 - *Getting Things Done* by David Allen
- For more on the cognitive burden of distraction, see
 - *Deep Work* by Cal Newport
- For an interesting perspective on creativity, see
 - *The Creative Habit: Learn It and Use It for Life* by Twyla Tharp and Mark Reiter
- Productivity Apps
 - Be focused
- For a broader perspective on designing your life
 - *Designing Your Life: How to Build a Well-Lived, Joyful Life* by Bill Burnett and Dave Evans

Job Market Placement Advice

- What can you do to improve your expected job market outcome?
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- Work as research assistants with faculty
 - Learn from seeing how faculty work and how they frame and execute a research project
 - Research assistance can unexpectedly develop into coauthorship through serendipitous idea creation

Well-being Advice

- Maintain a healthy work-life balance
 - Too much stress and overwork reduces productivity
 - Make sure that you give yourself breaks and take vacation to rest and recuperate
 - Productivity is achieved through consistent and sustainable work habits and steady incremental progress

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 - Maintain friendships and activities outside research
- The university has a whole menu of resources available for improving the graduate school experience
 - McGraw Teaching & Learning Center (e.g. writing courses)
 - McCosh Health Center
 - Range of Counseling & Psychological Services (CPS)

Research Suggestions

- For various suggestions on how to approach research, see for example the articles in *Passion and Craft: Economists at Work* (editor Michael Szenberg) by:
 - Avinash Dixit
 - Claudia Goldin
 - Elhanan Helpman
 - Hal Varian
 - And a number of other illustrious economists

Paul Krugman's Four Rules

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 - Pay attention to what intelligent people are saying, even if they do not have your customs or speak your analytical language
- Question the question
 - If people in a field have got bogged down on questions that seem very hard, it is a good idea to ask whether they are really working on the right questions. Often some other question is not only easier to answer but actually more interesting

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 - If a new set of assumptions seems to yield a valuable set of insights then these assumptions may be useful

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- Dare to be silly
 - All models are abstractions and involve silly assumptions
 - If a new set of assumptions seems to yield a valuable set of insights then these assumptions may be useful
- Simplify, simplify
 - Express your ideas in the simplest possible model. The act of stripping down to this minimalist model will force you to get to the essence of what you are trying to say (and will also make obvious those situations in which you actually have nothing to say). And this minimalist model will then be easy to explain to other economists as well
 - Once you understand the mechanisms, you can always enrich the model later, as for example when taking it to the data quantitatively

Rules for Code and Data

Matt Gentzkow and Jesse Shapiro

- See *Code and Data for the Social Sciences: A Practitioner's Guide*, available on my website throughout the material for trade PhD students link
 - Automation
 - Version Control
 - Directories
 - Keys
 - Abstraction
 - Documentation
 - Management

Rules for Writing

Claudia Goldin and Larry Katz

- Rule 1: Most people do not have a Nobel Prize winning idea.
 - It is always possible to transform a good idea into a great paper and a superb presentation.
 - Even if your idea is Nobel-worthy, you can always make it into a poorly written paper and a lousy presentation.
- Rule 2: The insights of your paper will first be judged by how you present them. If your paper is written in an unprofessional manner, your empirical work, mathematical proofs, and models will be viewed with initial skepticism.
- Rule 3: Your paper is an exercise in persuasion (we mean in positive not normative economics). Your readers are your audience. They have better things to do than read your paper. Make them interested in your thesis and convinced of your argument.

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- Rule 4: No great paper – no matter how well constructed, brilliant, and well written – first emerged from the author's printer in that form. It was rewritten at least 10 times. Rewriting is the true art of writing.
- Rule 5: No author – no matter how careful and humble – can see all (or even most) of his or her writing errors. Trade papers with another student. Be tough; there will be some initial pain, but gratitude will follow.
- Rule 6: Most paragraphs have too many sentences and most sentences have too many words. Repetition is boring. We repeat: repetition is boring. Cut, cut, and then cut again.

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- Rule 7: The “foot-in-the-door” parts of your written work are the abstract and introduction. Write them clearly and concisely. The abstract is not simply the first paragraph of your paper (or the last paragraph for that matter). Write them so that they are accessible by any intelligent economist, not just those in your field.
- Rule 8: Verbalizing your argument is more difficult than writing it. Giving a presentation will reveal where your argument falls flat and will show you how to redraft the paper. Give many presentations before sending out your paper. Give them to a workshop, friends, a dog or cat, even the wall. The presentation will force you to confront inconsistencies in your argument.

Rules for Writing

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- Rule 9: Be your own worst enemy. If you won't, someone else will.
- Rule 10: There are many other rules. We cannot cover all of them. Consult good style guides and guides to writing in economics
 - Some recommendations in such style guides are subjective, but at least use them to think carefully about what you are doing

Guides to Writing in Economics

- *The Little Book of Research Writing* by Varanya Chaubey
- *Economical Writing* (2nd edition, Waveland Press) by Deirdre McCloskey (Economics, Rhetoric, Philosophy, University of Illinois, Chicago)
 - Opinionated and subjective but much (though not all) of the advice is very good
- *A Guide for the Young Economist* (M.I.T. Press, 2001) by William Thomson (Economics, University of Rochester)
- See also, William Thomson, "The Young Person's Guide to Writing Economic Theory," *Journal of Economic Literature*, 37, March, 1999, 157-83.

Presentation Guides

- *Better Presentations: A Guide for Scholars, Researchers, and Wonks* by Jonathan Schwabish

Style Guides

- *The Elements of Style*, by William Strunk Jr. and E. B. White
 - The classic guide to writing effectively
- *A Manual for Writers of Research Papers, Theses, and Dissertations*, by Kate L. Turabian, University of Chicago Press

Style Reference Books

- *The Chicago Manual of Style*, University of Chicago Press
 - A classic reference point
- *Fowler's Modern English Usage*, by H. W. Fowler, Oxford University Press
 - Dated and from another era, but the ultimate classic reference book on the English language

Research Suggestions

- For an excellent discussion of the nature of research, see:
 - *The Craft of Research*, by Wayne C. Booth, Gregory G. Colomb and Joseph M. Williams, University of Chicago Press
- For the suggestions of several illustrious economists on how to approach research, see:
 - *Passion and Craft: Economists at Work*, edited by Michael Szenberg, Michigan University Press
- For a subjective but stimulating discussion of approaches to empirical research, see
 - *Mostly Harmless Econometrics: An Empiricist's Companion* by Joshua D. Angrist and Jörn-Steffen Pischke
- For a more structural approach, see
 - *The Limits of Inference without Theory*, by Kenneth I. Wolpin