TIPS FOR NEW PRINCIPAL INVESTIGATORS IN STATISTICS AND DATA SCIENCE EDUCATION RESEARCH

Mine Dogucu, PhD
University of California Irvine
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at Preparing to Teach Workshop
Toronto, Canada
You can access the slides to this talk on my website:

minedogucu.com/talks
OUTLINE

About Me
(longer than usual)

Research Methodology

Running a lab

Disseminating your research

Conferences
Manuscripts
Other Products
Grants
MY BACKGROUND

• Ph.D. in Quantitative Research, Evaluation, and Measurement at the Ohio State University
• Assistant Professor of Applied Statistics, New College of Florida
• Visiting Assistant Professor of Data Analytics, Denison University
• Lecturer (Teaching) of Statistics, University College London
• Assistant Professor of Teaching and Vice Chair of Undergraduate Studies, Department of Statistics, University of California Irvine


• Full-list can be found on my website and Google Scholar
EXAMPLES OF MY OTHER PRODUCTS


• Data Pedagogy Blog
MY GRANT PROPOSALS

- SoCal Data Science, co-PI (funded)
- Irvine Summer Institute in Biostatistics and Undergraduate Data Science (funded)
- National Science Foundation Research Traineeship (NRT) Program (not funded)
- Bayes BATS (funded)
- NSF CAREER (under review)
RESEARCH METHODOLOGY

• Embrace qualitative research methods
• If possible, get training if qualitative research methods
  • Focus groups
  • Think out loud protocols
  • Structured, semi-structured interviews
• Observations
• Resource: How to Design and Evaluate Research in Education
• Start thinking about Institutional Review Board (IRB) process early on.
• Be curious, don’t do research because of fear of “publish or perish”.
• Read a lot.
• Think of research and note down your curiosities as you teach
• Build questions FOR your own teaching
<table>
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<th>RECRUIT</th>
<th>MANAGEMENT</th>
<th>SUPPORT</th>
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<td>Don’t be lonely in your lab. Recruit students!</td>
<td>Project management and people management are both important.</td>
<td>Seek support from staff.</td>
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WRITING TIPS

• Consider smaller projects such as conference talk and blog posts before a full manuscript.
• Write every day.
• Write first thing in the morning.
• Write first, polish later.
• Move cell phone out of sight.
• Use an app to block internet/social media.
PUBLISHING PEER-REVIEWED WORK

You don’t have to start alone. Find a collaborator.

Start with a pre-print to get feedback from the community.

Get to know the journal well (more tips on this on the next two slides).

Consider conferences such as IASE Satellite or ICOTS etc. which publish peer-reviewed proceedings.
(SOME) JOURNALS OF INTEREST

Journal of Statistics and Data Science Education
Statistics Education Research Journal
The American Statistician, Teacher’s Corner
Teaching Statistics
Technology Innovations in Statistics Education
JOURNAL WORK

Read
Subscribe to notifications and read regularly

Understand
Read the author guidelines

Review
Sign up to be a reviewer
BLOGS

Examples:

- Teach Data Science
- Ask Good Questions
- Citizen Statistician
- Statistics Teaching and Learning Corner
- Data Pedagogy

Subscribe to notifications

Build your own blog!!!
Other Dissemination Venues

- Podcasts
- Magazines
  - Amstat News
  - Significance
  - AMS Notices
- Local Meetups
• Sign up on research.gov and start a proposal.
• Read example grant proposals.
• Start with a collaboration with a senior colleague.
• My strategy: start with a small grant. At campus level, start with a seed grant. At the federal level aim for a lower budget initially.
• Sign up to be a reviewer by reaching out to the program officer.
• Plan very early.
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Feiyi Sun
QUESTIONS?

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