Research and Teaching Overview

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Me

- I've been at Western since 2011
- I'm an applied/labor econometrician
  - MO: I use economic theory to interpret data
  - Mostly using the **Structural Microeconometric** approach
- Main areas:
  - Empirical contracting
    - empirical research about moral hazard and adverse selection models
  - Public/Labor economics
  - Health economics
  - Economics of education

My Specializations

- It can be hard to figure out who to talk/work with
- Come talk to me if (but not only if!) you're interested in...
  - Health Economics
  - Economics of Education
  - Empirical Contracts
    - This includes Auction models!
  - Network / Social Interaction Models
  - Developing your own Applied Methods ideas

Teaching: 9622: Topics in Health and Education, and Empirical Contracts

- This course examines how to answer public policy questions using empirical research, with a focus on structural microeconometric work.
- Focus on empirical contracts, with a special application to education and health economics, as well as insurance markets more generally.
  - **Also, if you're interested in *health* you should take this course!**
- Note that we can work together even if you haven't taken this course!

Teaching: 9622 (cont.)

- We also cover many papers that have unique, underexploited, public-use datasets
  - Great place to get ideas, e.g., prev. students:
    - RAND HIE to estimate demand for medical inputs to health production, learning about characteristics of health insurance plans
    - Muralidharan and Sundararaman 2011: group vs. individual teacher incentive pay
    - Oregon Health Insurance Experiment, other papers available!

Research

I'll provide some examples of projects I've worked/am working on...

Optimal Contracting with Altruistic Agents: Medicare Payments for Dialysis Drugs

- Optimal Contracting with Altruistic Agents: Medicare Payments for Dialysis Drugs with Gaynor and Richards-Shubik. *American Economic Review*, 113(6), 1530-1571, 2023.
- Most literature on physician incentives: "Incentives matter."
- **Our goal**: Estimate physician preference parameters governing altruism versus valuation of remuneration.
- We build a model of physician treatment choices.
- What's the **informational asymmetry**? Physician altruism and cost types are private information.
- The model takes as an input a contract specifying payment in terms of treatment choice.
- Use data from existing contracts and physician treatment choices to identify structural parameters.
- We can then solve for the optimal contract (i.e., the second best) you learned about in contract theory (nonlinear pricing at Costco) and compare it with the ones in the data.

Contracting in Education

- How/whether should we pay teachers based on observed measures of output?
- Again, most of the literature in this area tries to *document* whether incentive schemes affect teacher behavior (positive)
- But wouldn't it be really interesting to figure out how incentive schemes *should* be structured? (normative vs. positive)

Measuring Teacher Quality

- Measuring Quality for Use in Incentive Schemes: The Case of "Shrinkage" Estimators. *Quantitative Economics*, 10(4), 1537-1577, 2019.
- I consider the performance of the most commonly used ways of estimating teacher performance (quality)
  - Call them estimators M_1 and M_2.
  - M_1 is a teacher fixed effect.
  - M_2 is a Bayesian estimator (weighted avg. of M_1 & prior mean)
    - Weight is increasing in sample size (i.e., number of students assigned to teacher)
    - The vast majority of existing teacher incentive schemes use M_2 because economists told education policymakers that variance is something we ought to reduce.
    - I then compare the performance of these estimators under different scenarios for economic primitives **using an economic, not statistical, objective**

Social Interactions: Input choices on social networks

- Social Interactions, Mechanisms, and Equilibrium: Evidence from a Model of Study Time and Academic Achievement, with Tim Conley, Ralph Stinebrickner, and Todd Stinebrickner. *Journal of Political Economy*, 2024.
- We study a mechanism underlying documented "social interactions in academic achievement": Study effort
- Develop a model of input choices on a social network, estimate the model parameters (e.g., production function mapping study effort to academic achievement) using data from the Berea Panel Study
- Use the model to document rich heterogeneity in effects of input choices that propagate across the social network

Social Interactions: Ability tracking

- Ability Tracking, School and Parental Effort, and Student Achievement: A Structural Model and Estimation (with Chao Fu). *Journal of Labor Economics*, 36(4), 923-979, 2018.
- Relates to a vast literature on social interactions: How much do peers affect outcomes, like achievement?
- Develop an estimable model endogenizing ability tracking regimes and the ensuing choices by parents, fit the model using ECLS-K data, using MLE.
- Key ingredients: schools choose how to organize students (determining the input peer composition), parents choose their own costly input (parental effort) in response, student achievement depends on both school and parental inputs
- With the model we can do much more than you could do with an experiment: Can estimate the effect of *allowing* tracking.
- Behavioral responses of parents are huge. We'd get the answer about 100% off by ignoring them.
  - This may help explain why it's hard to detect an "effect" of tracking.

Some Other Projects (Complete and Active!)

- Education
  - Competition in Public School Districts: Charter School Entry, Student Sorting, and School Input Determination. *International Economic Review*, 58(4), 1089-1116. 2017.
  - Lifecycle Teacher Quality (working paper)
- Health
  - Production function estimation (joint with Tian Liu and Seth Richards-Shubik)
  - Optimal contracts in the presence of multitasking health providers (in progress)
- Misc. Methods
  - An Economic Approach to Generalizing Findings from Regression-Discontinuity Designs. *Journal of Human Resources*, 54(4), 2019.