Welcome to ICE09

Sponsored by

University of Chicago
Argonne National Laboratories

Computation Institute
Milton Friedman Institute for Research in Economics
Stevanovich Center for Financial Mathematics
Economics Research Center
Graduate Program, Chicago Booth School of Business

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Why ICE?

- Computational technologies are exploding in their ability to analyze scientific and mathematical problems in every science.
- Economics is different: In the opinion of an applied mathematician, "Economists will soon be so far behind they will not be able to catch up."
- The computational approach has enormous potential for economic analysis, but only a small amount of that potential is being exploited. In the opinion of a computer scientist, "That is not low-hanging fruit; that fruit is rotting on the ground.
- Almost no economics departments offer their students serious training in computational methods.
- ICE is an attempt to fill a small part of the need for graduate training in computational methods.

Why Chicago?

- The Chicago tradition in economics is to do economics, and to do what is necessary to do the best research
  - If supply and demand curves suffice, then use them.
  - If you need to formulate a problem as a fixed point in L_∞ then learn the necessary functional analysis - Lucas
  - If you have a problem with censored data, then invent new statistical tools - Heckman
  - If you can't find cute solutions to dynamic principal-agent problems, then use numerical tools - Townsend
  - If you want to explore alternatives to full rationality, then study and extend robustness theory - Hansen
- The University of Chicago economics community has made long-term commitments to giving their students the training in computational methods they need to do economic research
- ICE is its way of sharing that expertise with the general economics community

Why the University of Chicago?

- The University of Chicago is about doing research.
- The University of Chicago and partners have provided *all* the funding for ICE workshops.

Why Argonne National Laboratories?

- Argonne Labs has an excellent center for computational research.
- Computational mathematicians at Argonne are among the world's leading experts on the kind of computational tools that are most valuable for economists.

What is the Computation Institute?

- The Computation Institute helps stimulate collaboration between scientists at Argonne Labs and faculty and students at the University of Chicago.
- An excellent example of this is CIM-EARTH, an effort to combine the expertise in economics and computation at Argonne and UC to create the next generation of models for assessing issues related to climate change.

What Are You Going To Do?

- Lectures: Learn basic numerical methods and see themapplied to economics problems
- Software Tutorials: Learn how to use powerful software tools and apply them to economics
- Projects: You will form groups of four, formulate an economics problem and solve it using the tools presented here
- Offce hours: Individuals may schedule appointments with the lecturers to discuss their own research
- Seminar presentations, and the Empirical Micro conference: You will see presentations by economics who are using computational tools in ongoing research

- Have fun
  - Eat
    - Goose Island on Tuesday night, August 4
    - Friday night in Hyde Park's version of Italy, August 7.
    - "Taste of Hyde Park" farewell dinner on Friday, August 15.
  - See Chicago (August 8 & 9)
    - Art Institute
    - Architectural boat tours
    - Top of the Hancock Tower
    - Many other items