



**Stevanovich Center  
for Financial Mathematics**  
at the University Of Chicago

5727 South University Avenue  
Chicago, IL 60637  
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**May 2-4, 2024**

**Market Microstructure, Quantitative Trading,  
High Frequency, and Large Data**

**Venue: Eckhardt Research Center (ERC), Room 161  
5640 S Ellis Ave, Chicago**

**Program**

This conference is made possible by the generous philanthropy of University of Chicago Trustee Steve G. Stevanovich and the University of Chicago Financial Mathematics Program

## Thursday, May 2 – Large Data and Finance I

8:30 AM Coffee/Pastry

### 9:00-10:10 AM Session 1

9:00 AM	Viktor Todorov	Northwestern U	Changes in the span of systematic risk exposures
9:35 AM	Xinghua Zheng	Hong Kong UST	Learning the stochastic discount factor

10:10 – 10:30 AM Coffee Break

### 10:30AM-12:15PM Session 2

10:30 AM	Mathieu Rosenbaum	École Polytechnique	The two square root laws of market impact and the role of sophisticated market participants
11:05 AM	Yong Zeng	Nat'l Science Foundation	Control and inference via filtering for partially-observed Markov processes with application to ultra-high frequency data
11:40 AM	Markus Bibinger	U Würzburg	Statistics of high-frequency data with limit order microstructure noise

12:15 – 1:45 PM Lunch Break

### 1:45-3:30 PM Session 3

1:45 PM	Carsten Chong	Hong Kong UST	The fine structure of volatility dynamics
2:20 PM	Kjell Nyborg	U Zürich	The price of money: the reserves convertibility premium over the term structure
2:55 PM	Suzanne Lee	Georgia Tech	Jump risk premiums in cryptocurrency returns

3:30 – 3:50 PM Coffee Break

### 3:50-5:00 PM Session 4

3:50 PM	Yingying Li	Hong Kong UST	Co-jump networks, mixed membership and beyond
4:25 PM	Nour Meddahi	Toulouse School of Economics	Non-linear time series models and machine learning

5:00 PM End of Program (Thursday)

## Friday, May 3 – DeFi: Decentralized Finance in Crypto Markets

8:30 AM **Coffee/Pastry**

9:00 AM – 10:30 AM **Session 5: Market Design I**

- 9:00 AM Agostino Capponi (Columbia)  
Discussant: Sarit Markovich (Kellogg)      The paradox of just-in-time liquidity in decentralized exchanges:  
more providers can lead to less liquidity
- 9:45 AM Fayçal Drissi (Oxford)  
Discussant: Tarun Chitra (Gauntlet)      Liquidity pooling beyond constant functions

10:30 – 10:50 AM **Coffee Break**

10:50 AM – 12:20 PM **Session 6: Market Design II**

- 10:50 AM Ciamac Moallemi (Columbia)  
Discussant: Andrew Papanicolaou (NCSU)      The economics of automated market making and decentralized exchanges
- 11:35 AM Geoff Ramseyer (Stanford)  
Discussant: Ayan Bhattacharya (Uchicago)      Scalable, frequent batch auctions with multiple numeraires

12:20 – 1:40 PM **Lunch Break**

1:40 – 3:10 PM **Session 7: DeFi Math** Chair: Gina Pieters

- 1:40 PM Emmanuel Gobet (École Polytechnique)  
Discussant: Fayçal Drissi (Oxford)      Thorough mathematical modeling and analysis of Uniswap v3
- 2:25 PM Tarun Chitra (Gauntlet)  
Discussant: William Cottrell (Uchicago and Jump Trading)      Geometry of DeFi and maximal extractable value

3:10 – 3:30 PM **Coffee Break**

3:30 – 5:00 PM **Session 8: Economics of IL, and Economics of Blockchain** Chair: Gina Pieters

- 3:30 PM Andrew Papanicolaou (NCSU)  
Discussant: Anthony Lee Zhang (Booth)      Implied impermanent loss: a cross-sectional analysis of decentralized  
liquidity pools
- 4:15 PM Eric Budish (Booth)  
Discussant: Ciamac Moallemi (Columbia)      Trust at scale: the economic limits of cryptocurrencies and blockchains

5:00 PM **End of Program (Friday)**

## Saturday, May 4 – Large Data and Finance II

8:30 AM Coffee/Pastry

### 9:00-10:10 AM Session 9

9:00 AM	Ruixun Zhang	Beijing U	Spectral volume models: universal high-frequency periodicities in intraday trading activities
9:35 AM	Álvaro Cartea	Oxford	Spoofing and manipulating order books with learning algorithms

10:10 – 10:30 AM Coffee Break

### 10:30AM-12:15PM Session 10

10:30 AM	Eric Renault	U Warwick	Coordinated testing for identification failure and correct model specification
11:05 AM	Dacheng Xiu	U Chicago Booth	On the theory of autoencoders
11:40 AM	Xiaohong Chen	Yale	STEEL: singularity-aware reinforcement learning

12:15 – 1:45 PM Lunch Break

### 1:45-3:30 PM Session 11

1:45 PM	Michael Sørensen	U Copenhagen	Simulation of diffusion bridges and estimation for SDEs with random effects and jumps
2:20 PM	Anders Kock	Oxford	Testing many moments by combining many norms

2:55 – 3:15 PM Coffee Break

### 3:15-4:25 PM Session 12

3:15 PM	Zhengjun Zhang	UCAS	Non-reversal normal markets meet nonexcessive regulations: quantile-based risk portfolios outperform naive strategy
3:50 PM	Rituparna Sen	ISI, Bangalore	Copula estimation for nonsynchronous financial data

4:25 PM End of Conference