Olivia J. Chu

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Research Interests

Evolutionary game theory, evolutionary dynamics, complex adaptive networks, social behavior, quantitative social science

Education

Princeton University, Princeton, New Jersey, USA

Ph.D., Quantitativ e and Computational Biology, September 2021

M.A., Quantitative and Computational Biology, January 2017

Advisor: Co-Advisors: Robert V. Kohn, Trushant S. Majmudar

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6. Olivia J. Chu, Atticus W. McWhorter, and Wai-Tong Louis Fan, Heterogeneous Preferences and Personality in Adaptive Network Models, in prep.

? indicates an undergraduate co-author.

Teaching		
	Bryn Mawr College	
	MATH B295 { Select Topics in Mathematics: Evolutionary Game Theory	
	Instructor	Fall 2024
	Dartmouth College	
	Math 76 { Evolutionary Dynamics	
	Instructor	Winter 2023
	Math/QSS 30.04 { Evolutionary Game Theory and Applications	
	Instructor	Spring 2022, 2024
	Princeton University	
	MAT 378 { Theory of Games	
	Assistant in Instruction (AI)	Spring 2018, 2019, 2020
	MAT 104 { Calculus II	
	Assistant in Instruction (AI)	Summer 2020, Fall 2020
	Courant Institute, New York University	
	Grader, Mathematics for Economics	Spring 2015
	Mathematics Tutor, Calculus I-III, Discrete Mathematics	Fall 2013, Spring 2014
	Teaching Assistant, Calculus III, Linear Algebra	Summer 2013

4. Heterogeneous Preferences

4. An Adaptive Voter Model Applied to Polarization Data, Theoretical Ecology Lab Tea. Princeton University, Nov. 2020

5. Evolutionary Dynamics in a Group Population Structure with Barriers to Group Entry, SIAM Conference on the Life Sciences (cancelled due to COVID-19), June 2020

6. An Adaptive Voter Model in Heterogeneous Environments, SIAM Conference on the Life Sciences (cancelled due to COVID-19), June 2020

7. Evolutionary Dynamics in a Group Population Structure, Joint Mathematics Meetings (JMM). Denver, CO, Jan. 2020

8. An Adaptive Voter Model with Optimal Distinctiveness, Theoretical Ecology Lab Tea. Princeton University, Oct. 2019

9. Evolutionary Dynamics in a Group Population Structure, Social Decisions Workshop. University of Houston, Oct. 2019

10. Evolutionary Dynamics in a Group Population Structure (poster), Society for Mathematical Biology Annual Meeting. Montreal, QC, Canada, July 2019

11. Optimal Distinctiveness and its Effects on Network Formation and Social Integration, CoCCoN Workshop on the Social Modulation of Risk & Collective Cognition. Humboldt University, Berlin, Germany, July 2019

12. Evolutionary Dynamics in a Group Population Structure, SIAM Conference on Applications of Dynamical Systems. Snowbird, UT, May 2019

    Talk recording and slides: https://bit.ly/2Zp8BmD

13. Evolutionary Dynamics in a Group Population Structure, APS March Meeting. Boston, MA, Mar. 2019

    Featured in the conference's media materials: https://phys.org/news/2019-03-approach-cooperate.html
    Participated in a press conference with members of the media

14. Evolutionary Dynamics on Sets with Barriers to Entry, Theoretical Ecology Lab Tea. Princeton University, Dec. 2017

15. Evolutionary Dynamics on Sets with Barriers to Entry, NIH NHGRI Annual Meeting. St. Louis, MO, Apr. 2017

16. Evolutionary Dynamics on Sets with Barriers to Entry, QCB Colloquium. Princeton University, Apr. 2016

17. Analysis of the \Euglenoid Motion" { Locomotion by Shape Deformations, NYU Dean's Undergraduate Research Conference. Apr. 2015

18. Analysis of the \Euglenoid Motion" { Locomotion by Shape Deformations, Courant Institute Undergraduate Research Conference. Oct. 2014

Other Presentations	An Introduction to Evolutionary Game Theory, cSplash, Courant Institute. Apr. 2019

Topics in Quantitative and Computational Biology, NYU Courant Institute Mathematics Society. Nov. 2015

Invited Workshops and Conferences	**Building a Bigger and Better US, MIT, Sept. 2024** Co-hosted by MIT's Laboratory for Financial Engineering, American Exchange Project, and The Cooperation Game, in collaboration with the Santa Fe Institute

Collective Adaptation in a Turbulent World, Santa Fe Institute, Sept. 2023

CoCCoN Workshops (Cooperation and Collective Cognition Network)
Humboldt University, Berlin, Germany { Nov. 2017, July 2019
Princeton University, Princeton, NJ { May 2017, Jan. 2019

Langfeld Meeting, From Micro-Level Cognitive Phenomena to Large-Scale Social Dynamics, Princeton University, May 2017

Leadership, Service, and Volunteering	Minisymposium Organizing

SIAM Life Sciences (LS)

June 2024

Co-organized session on Sept. Phenomena

eSMB

Society for Mathematical Biology Annual Meeting (online)   Aug. 2020

    Co-organized a mini-symposium on \The Emergence and Stability of Population Structure and Biological Aggregates Across Scales".

AMS Spring Sectional Meeting

Tufts University   March 2020, March 2022

    Co-organized a special session on \Mathematical Methods for Ecology and Evolution in Structured Populations".

Peer Mentoring

QCB Peer Mentor

Princeton University   Sept. 2017 - Sept. 2021

cSplash is an annual one-day lecture series for advanced high school students interested in STEM. Served as Advertising coordinator from 2012-2013, Logistics Coordinator from 2013-2014, and co-director from 2014-2015.