

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., Quantitative and Computational Biology, September 2021
M.A., Quantitative and Computational Biology, January 2017
Advisor: Co-advisors: Robert V. Kohn, Trushant S. Majmudar
2021) f <0003>Tj /T1_2 1 Tf 1.231 0 Td 87P3.51e

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 2013f 0.8

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. Mar. 2019
 Topics in Quantitative and Computational Biology, NYU Courant Institute. Mar. 2019
 Mathematics Society. Nov. 2015 /T1

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-organizes
Special Session on Sept. Phenomena

Michigan Tech TheorDC / Princeton 2000 / 2007 / 2013 / 2014 / 2015 / 2016 / 2017 / 2018 / 2019 / 2020 / 2021 / 2022 / 2023 / 2024

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.
