

David McAdams

Professor of Business Administration and Economics
Fuqua School of Business and Department of Economics
Duke University
Durham, NC 27708
Phone: 919-660-7926

Email: david.mcadams@duke.edu
URL: <https://sites.duke.edu/mcadams/>

Current positions

Professor, Fuqua School of Business (primary) and Economics Department, Duke University

Areas of expertise

Economic Theory; Game Theory; Economic Epidemiology; Market Design

Appointments held

2008- Duke University, Fuqua School of Business
2008- Duke University, Economics Department
2013- Fuqua Health Sector Management Program, Affiliated Faculty
2018- Duke Margolis Center for Health Policy, Affiliated Faculty
2021- Duke Global Health Institute, Affiliated Faculty

2001-2008 MIT, Sloan School of Management
1999 Federal Trade Commission

Education

1996 BS in Applied Mathematics, Harvard
2001 MS in Statistics, Stanford
2001 PhD in Business, Stanford

Grants, honors & awards

2022-2024 co-PI, Carnegie Foundation grant: "Reimagining Multilateralism: Ending the Tragedy of the Global Health Commons"
2022-2024 co-PI, NSF Grant CCF-2200047: "PIPP Phase I: Modeling the Pandemic Lifecycle for Disease Control"
2022-2024 co-PI, NSF Grant DMS-2230074: "RAISE: IHBEM: Equilibrium, Network Formation, and Infectious-Disease Spread: Bridging the Divide between Mathematical Biology and Economics"

2008-2011 PI, NSF Grant SES-0820051: "Endogenous Exit from a Stochastic Partnership"
 2003-2006 PI, NSF Grant SES-0241468: "Ordinal Structure in Multi-Unit Auctions"
 2001 Stanford Institute for Economic Policy Research, Olin Dissertation Fellowship
 2001 State Farm Dissertation Award in Business
 1997 Jaedicke Scholar, Stanford Graduate School of Business
 1989 Eagle Scout

Publications

BOOKS

2020 "Games of Strategy: Fifth Edition" with Avinash Dixit and Susan Skeath. W.W. Norton, 2020.
 2014 "Game-Changer: Game Theory and the Art of Transforming Strategic Situations". W.W. Norton, 2014.

JOURNAL ARTICLES: ECONOMIC EPIDEMIOLOGY & PUBLIC HEALTH

"Steady-State Social Distancing and Vaccination" with Chris Avery and Frederick Chen, conditionally accepted at *American Economic Review: Insights*

"Social Networks and the Market for Information" with Rachel Kranton, accepted at *American Economic Journal: Microeconomics*.

Presented: Cornell, Dartmouth, Duke, EUI, GSE Barcelona, Columbia, Johns Hopkins, Oxford, Northwestern, Penn State, Simons Institute, UAB IAE (Barcelona), the 6th European Conference on Networks, the 17th IO Theory Conference, the 2019 Cowles Conference in Economic Theory, and the 6th Conference on Network Science and Economics

"Equilibrium Social Activity during an Epidemic" with Yangbo Song and Dihan Zou, *Journal of Economic Theory* 207 (2023): 105591.

Earlier version: "Nash SIR: An Economic-Epidemiological Model of Strategic Behavior During a Viral Epidemic", *Covid Economics*, issue 16, 115-134, May 2020.

Presented: Johns Hopkins Pandemic Seminar, Apr 2020.

2022 "Learning through the Grapevine and the Impact of the Breadth and Depth of Social Networks" with Matthew Jackson and Suraj Malladi, *Proceedings of the National Academy of Science*, 119 (34) e2205549119, 2022.

Presented: 21st ACM Conference on Economics and Computation, 4th Workshop on Mechanism Design for Social Good, and 8th International Workshop on Computational Social Choice in 2020.

2021 "The economics of managing evolution" with Troy Day (lead author, Queens U Math & Statistics), David A. Kennedy (Penn State Biology), and Andrew F. Read (Penn State Entomology). *PLoS Biology* 19 (11): e3001409, November 2021.

Presented: Club EvMed (virtual evolutionary-medicine seminar), AgBiome (biotech company focused on plant-associated microbiome).

- 2021 “The Blossoming of Economic Epidemiology”. *Annual Review of Economics* 13, 2021.
Earlier version: “Economic Epidemiology in the wake of Covid-19”, *Covid Economics*, issue 48, 1-45 (lead article), September 2020.
- 2021 “Adapting environmental surveillance for polio to the need to track antimicrobial resistance” with Christine Årdal (lead author, Institute of Public Health, Norway), Astrid Wester, and Sigrun Møgedal, *Bulletin of the World Health Organization*, 99: 239-240, March 2021.
- 2020 “Incentivizing Wealthy Nations to Participate in the COVID-19 Vaccine Global Access Facility (COVAX): A Game Theory Perspective”, lead author with Kaci Kennedy McDade (Duke Center for Policy Impact in Global Health), Siddharth Dixit (CPIGH), Osondu Ogbuoji (CPIGH), Matthew Johnson (Duke Human Vaccine Institute), and Gavin Yamey (CPIGH). *BMJ Global Health*, 5:e003627, November 2020.
Presented: Gavi the Vaccine Alliance, July 2020; National Academies of Science, Engineering, and Medicine, May 2021.
- 2019 “Antibiotic development—economic, regulatory and societal challenges” with Christine Årdal, Manica Balasegaram, Ramanan Laxminarayan, Kevin Outterson, John H. Rex, and Nithima Sumpradit. *Nature Reviews Microbiology* 18, 267–274, Nov 2019.
- 2019 “Resistance diagnostics as a public health tool to combat antibiotic resistance: A model-based evaluation”, lead author with Sam Brown and Kristofer Wollein Waldetoft (Sam Brown Lab, Georgia Tech Biological Sciences) and Marc Lipsitch and Christine Tedijanto (Center for Communicable Disease Dynamics, Harvard Chan School of Public Health). *PLoS Biology*, 17(5): e3000250, May 2019.
Presented: Duke Infectious Diseases Grand Rounds, Jan 2013; GlaxoSmithKline Antibiotics, Nov 2014; Collegio Carlo Alberto (Turin) and CSEF (Naples), Oct 2015; CDC NCEZID DHQP (Atlanta), Mar 2016; Georgia Tech Biological Sciences, May 2017; Harvard Center for Communicable Disease Dynamics, Apr 2018.
Contribution: “DM conceived the project. DM and SB developed the mathematical models. DM analyzed the models. DM and SB wrote the manuscript. DM wrote SI.A-E ...” (bioRxiv version).
- 2017 “Analysis of the potential for point-of-care test to enable individualised treatment of infections caused by antimicrobial-resistant and susceptible strains of *Neisseria gonorrhoeae*: a modelling study” with Katy Turner (lead author), Hannah Christensen, Elisabeth Adams, Helen Fifer (Public Health England), Anthony McDonnell (O’Neill Review), and Neil Woodford (Public Health England). *BMJ Open*, July 2017, 7:e015447.
Commissioned by the O’Neill Review on Antimicrobial Resistance and featured as a supporting document to their final report (“Tackling Drug-Resistant Infections Globally: final report and recommendations”, May 19, 2016).
Contribution: “KT, EA and HC developed the models, following initial work by DM and NW.”
- 2017 “Resistance Diagnosis and the Changing Epidemiology of Antibiotic Resistance”. *Antimicrobial Therapeutics Reviews*, 1388(1), 5-17, Jan 2017, lead article.
- 2017 “Resistance Diagnosis and the Changing Economics of Antibiotic Discovery”. *Antimicrobial Therapeutics Reviews*, 1388(1), Jan 2017, 18-25.

JOURNAL ARTICLES: AUCTIONS & OTHER ECONOMICS

- 2018 "Empirical Work on Auctions of Multiple Objects" with Ali Hortacsu. *Journal of Economic Literature*, 56, March 2018, 157-184.
Presented: Bonn University, invited mini-course, November 2020.
- 2017 "Supply, Demand, and Uncertainty: Implications for Prelisting Conservation Policy" with Christopher Galik. *Ecological Economics*, 137, July 2017, 91-98.
- 2015 "On the Benefits of Dynamic Bidding when Participation is Costly". *Journal of Economic Theory*, May 2015, 959-972.
Presented: MilgromFest (a conference honoring Paul Milgrom) in 2013; Columbia Economics, Stanford GSB, UT Austin Economics, WUSTL Economics in 2014; Econometric Society Annual Winter Meetings in 2015.
- 2013 "Identification of First-Price Auction Models with Non-Separable Unobserved Heterogeneity" with Yingyao Hu and Matthew Shum. *Journal of Econometrics*, June 2013, 186-193.
Presented: Econometric Society Annual Winter Meetings, INFORMS Annual Meeting in 2011.
- 2012 "Strategic Ignorance in the Second-Price Auction". *Economics Letters*, January 2012, 83-85
- 2011 "Performance and Turnover in a Stochastic Partnership". *American Economic Journal: Microeconomics*, November 2011, 107-42.
Presented: CalTech Economics, UCLA Economics, MIT / Harvard Economics, IO Theory Conference, Johns Hopkins Economics, U. Michigan Economics, Northwestern Kellogg School of Management, NYU Economics, Penn State Economics in 2007; GAMES 2008, Third World Congress of Game Theory Society (talk canceled for personal reasons) in 2008; Econometric Society Annual Winter Meetings, NBER Conference on Relational Contracts, Washington U. St. Louis Economics in 2009; Utah Winter Business Economics Conference, Northwestern Economics, USC Marshall School of Business in 2010.
- 2011 "Carbon Allowance Auction Design: An Assessment of Options for the U.S." with Giuseppe Lopomo, Leslie Marx, and Brian Murray. *Review of Environmental Economics and Policy*, Winter 2011, 25-43.
- 2010 "Mechanism Choice and Strategic Bidding in Divisible Good Auctions: An Empirical Analysis of the Turkish Treasury Auction Market" with Ali Hortacsu. *Journal of Political Economy*, October 2010, 833-865 (lead article).
Presented: MIT Economics (IO Lunch) in 2007. An earlier version was Ali Hortacsu's job-market paper in 2001.
- 2008 "Partial Identification and Testable Restrictions in Multi-Unit Auctions". *Journal of Econometrics*, September 2008, 74-85.
Presented: U. Chicago Economics, MIT / Harvard Economics, Northwestern Kellogg School of Management in 2004; UC Berkeley Economics, CIREQ Conference on Auctions, Penn State Economics in 2005; Duke / U. North Carolina Economics in 2007.

- 2007 “On the Failure of Monotonicity in Uniform-Price Auctions”. *Journal of Economic Theory*, November 2007, 137, 729-732.
Presented: International IO Conference in 2003.
- 2007 “Who Pays When Auction Rules are Bent?” with Michael Schwarz. *International Journal of Industrial Organization*, October 2007, 25(5), 1144-1157.
Presented: Yahoo! Research in 2006.
- 2007 “Uniqueness in Symmetric First-Price Auctions with Affiliation”. *Journal of Economic Theory*, September 2007, 136, 144-166.
Presented: U. Arizona Economics, U. Illinois Economics, Pitt Economics, Rutgers Economics, WBZ Berlin Advances in Auction Theory Conference in 2004.
- 2007 “Perverse Incentives in the Medicare Prescription Drug Benefit” with Michael Schwarz. *Inquiry*, Summer 2007, 44(2), 157-166.
- 2007 “Bounding Revenue Comparisons across Multi-Unit Auction Formats under epsilon-Best Response” with James Chapman and Harry Paarsch. *American Economic Review, Papers and Proceedings*, May 2007, 97(2), 455-458.
- 2007 “Adjustable Supply in Uniform Price Auctions: Non-Commitment as a Strategic Tool”. *Economics Letters*, April 2007, 95(1) 48-53.
Presented: Federal Energy Regulatory Commission, U. Maryland Economics in 1999; UC Energy Institute in 2003; Northwestern Economics in 2004; Econometric Society Annual Winter Meetings in 2006.
- 2007 “Credible Sales Mechanisms and Intermediaries” with Michael Schwarz. *American Economic Review*, March 2007, 97(1), 260-276.
Presented: U. Chicago GSB, Columbia Economics / GSB, Penn Economics, Stanford Economics / GSB in 2005; Econometric Society Annual Summer Meetings (by co-author) U. Maryland Economics, NYU Stern School of Management, U. Texas Economics, U. Wisconsin Economics in 2006.
- 2007 “Monotonicity in Asymmetric First-Price Auctions with Affiliation”. *International Journal of Game Theory*, February 2007, 35(3), pp 427-453.
Presented: MIT / Harvard Economics in 2002; UC Berkeley Economics, CalTech Economics, Northwestern Economics, Princeton Economics in 2003.
- 2006 “Monotone Equilibrium in Multi-Unit Auctions”. *Review of Economic Studies*, October 2006, 73(4), pp 1039 – 1056.
Presented: Carnegie-Mellon GSIA, Harvard Kennedy School of Government, MIT Sloan School of Management, Northwestern Economics, NYU Stern School of Management, Washington U. St. Louis Olin School of Management, Yale Economics / School of Management in 2001; Caltech Economics, Duke / U. North Carolina Economics, U. Iowa Tippie College of Business, U. Maryland Economics, U. Michigan Economics, Penn State Economics, Stony Brook Game Theory Conference in 2002; U. Chicago Economics, Ohio State Economics, Stanford Institute for Theoretical Economics in 2003; Econometric Society Annual Summer Meetings in 2004.

- 2003 “Isotone Equilibrium in Games of Incomplete Information”. *Econometrica*, August 2003, 71(4), pp 1191-1214.
Presented: MIT / Harvard Economics in 2001; U. Chicago Economics, IO Theory Conference, Midwest Theory Conference, American Mathematics Society Annual Meetings in 2002; Econometric Society Annual Winter Meetings in 2003.
- 1999 “Speeding Up the Ascending-Price Auction” with Yuzo Fujishima and Yoav Shoham *Proceedings, Int. Journal Conf. in Artificial Intelligence*, 1999, pp 554-559.
Presented: International Journal Conference in Artificial Intelligence (Stockholm) in 1999.

WORKING PAPERS

“Viral Social Learning” with Yangbo Song.

Presented: ES Winter Meeting (by co-author) in 2018; ES North American Summer Meeting and Asian Meeting (by co-author) in 2019; Johns Hopkins Carey, Bonn U., and U. Connecticut in 2020.

“The Political Economy of Epidemic Management” with Troy Day.

“Rational Disagreement and the Fragility of Social Learning: Identification Failures with Noisy Communication” with Matthew Jackson and Suraj Malladi

Teaching

- 2003- Art & Application of Game Theory, MBA elective
2008- Auction Theory, PhD 2nd-year course

Service

- 2023 Co-editor, Special Issue on “Economics of Epidemics”, *Review of Economic Design*.
- 2022- Member, Duke University Athletic Council.
- 2020 Member, Climate Change Resiliency Working Group, Duke University.
- 2019-2021 Member, Steering Committee for “Driving health progress during disease, demographic, domestic finance, and donor transitions (the ‘4Ds’)”, Duke Center for Policy Impact in Global Health.
- 2015- Member, Faculty Governance Committee, Duke Initiative for Science & Society.
- 2006- Associate Editor, *International Journal of Industrial Organization*.
- 2019-22 Member, Bass Connections Faculty Advisory Committee, Duke University.
- 2013-2018 Co-chair, Fuqua Honor Committee.
- 2020- Member, Academic Programs Committee, Duke University.
- 2014-2017
- 2013-2015 Associate Editor, *International Journal of Game Theory*.

2008-2013 Associate Editor, Review of Economic Design.

2012-2014 Associate Editor, Journal of Economic Literature.

Referee for American Economic Review, Econometrica, Games and Economic Behavior, International Economic Review, International Journal of Industrial Organization, Journal of Economic Literature, Journal of Economic Theory, Journal of the European Economic Association, Journal of Finance, Management Science, National Science Foundation, PLoS Biology, RAND Journal of Economics, Review of Economic Design, Review of Economic Studies, Theoretical Economics.

Public Interest

2018- MyVote Project (myvoteproject.com), Co-founder

NOTABLE SPEECHES (AVAILABLE ON PERSONAL WEBSITE)

2021 “Evolution management from a game-theory perspective: Can superbugs be forever tamed?”, presentation to *Club EvMed* (Virtual Evolutionary Medicine Conversations), June 2021.

2021 “From Aid to Essential National Investment: Changing the Game of Global Pandemic Preparedness”, presentation to Global Coordination, Partnerships, and Financing committee, National Academies of Sciences, Engineering, and Medicine, May 2021.

2016 “Changing the Game of Antibody Validation,” keynote address at Asilomar Workshop of Global Biological Standards Institute on Antibody Validation: Standards, Policies, and Practices, on how the scientific community can work together to address the “reproducibility crisis” in biomedical science. September 2016.

2015 “Taming Superbugs”, keynote address at *Duke Forward: Dallas* on how we can avoid a “post-antibiotic future.” January 2015.

2014 “The Future of Pest-Resistant Crops”, Thomas C. Sorensen Seminar at U. Nebraska Lincoln on how to preserve the effectiveness of GM corn. October 2014.

SELECTED OTHER WRITINGS

2022 “What game theory can tell us about the war in Ukraine” with Anastassia Fedyk, *Los Angeles Times*, July 24, 2022.

2019 “Gold Medals for Games” with Avinash Dixit and Susan Skeath, essay on John Nash and Reinhard Selten’s contributions to economics, solicited by Christie’s, accompanied the catalog copy for the auction of Nash and Selten’s Nobel Prize medals in October 2019 (see “Post-Lot Text” at <https://www.christies.com/en/lot/lot-6228496>).

2017 “Game Theory and Cooperation: How Putting Others First Can Help Everyone”. *Frontiers for Young Minds*. 5:66 (inaugural article in the Mathematics category).

2016 “Applying Game Theory to the Supreme Court Confirmation Fight” with Avinash Dixit. *Harvard Business Review online*, September 27, 2016.

2015

“Turning the Tables on Terrorist Kidnappers” (published as “The Right Way to Pay Ransoms to Terrorists”). *New York Times*, February 2015.

2014 “Could a top-two primary tame the Tea Party threat?”. *The Monkey Cage* (Washington Post blog), June 16, 2014.

2014 “Making a Market for Overdose-Halting Drugs”. *New Jersey Star Ledger* op-ed, March 25th, 2014.

2014 “NFL Coaches Are Too Chicken for Their Own Good.” *TIME.com*, February 2014.

2013 “Changing the Debt-Ceiling Game”. *New York Times*. October 15th, 2013 [day before a deal was reached to avoid default on the national debt].