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Education

- 2005 – 2010 PhD, Economics, Harvard University
Dissertation: “Essays on technological change in health care markets”
Advisors: David Cutler, Amy Finkelstein, Lawrence Katz
- 2003 – 2004 MSc, Economics for Development, University of Oxford
- 1999 – 2003 AB, Mathematics, Dartmouth College

Employment

- 2017 – Associate Professor (with tenure), MIT Department of Economics
- 2016 – 2017 Class of 1957 Career Development Associate Professor (with tenure), MIT Department of Economics
- 2014 – 2016 Class of 1957 Career Development Assistant Professor, MIT Department of Economics
- 2013 – 2014 Visiting Assistant Professor, Stanford University, Stanford Institute for Economic Policy Research
- 2011 – 2014 Assistant Professor, MIT Department of Economics
- 2010 – 2011 Visiting Fellow in Aging Research, National Bureau of Economic Research (NBER)
- 2004 – 2005 Research Assistant to Professors Amy Finkelstein and Michael Kremer, NBER

Professional activities

- 2017 – Board of Editors, *American Economic Journal: Economic Policy*
- 2016 – Research Associate, NBER (Aging, Health Care, and Productivity)
- 2016 – Associate, Toulouse Network for Information Technology
- 2013 – Associate Member, Broad Institute of MIT and Harvard
- 2013 – Associate Editor, *International Journal of Industrial Organization*
- 2012 – Associate Editor, *Review of Economics and Statistics*
- 2010 – 2016 Faculty Research Fellow, NBER (Aging, Health Care, and Productivity)

Honors

- 2016 Arrow Award for Best Paper in Health Economics, iHEA
- 2016, 2017 MIT Graduate Economics Association, Best Adviser Award
- 2016 MIT Graduate Economics Association, Best Graduate Teacher Award
- 2015 MacArthur Foundation Fellowship
- 2015 – 2017 Alfred P. Sloan Research Fellowship
- 2014 – 2016 Kauffman Junior Faculty Fellowship in Entrepreneurship Research
- 2013 Kauffman/iHEA Award for Health Care Entrepreneurship and Innovation Research
- 2013 MIT Undergraduate Economics Association Teaching Award
- 2012 – 2017 National Science Foundation (NSF) CAREER Award
- 2011 Garfield Economic Impact Award
- 2011 World Economic Forum, Young Global Shaper
- 2010 Healthcare Cost & Utilization Project (HCUP) Outstanding Article of the Year Award
- 2010 Association for Public Policy Analysis and Management (APPAM) Dissertation Award
- 2008 – 2010 Pre-doctoral Fellow in Aging and Health Economics; NBER
- 2007 Price Theory Scholar; Becker Center on Chicago Price Theory; University of Chicago
- 2004 Webb-Medley Overall Prize (*proxime accessit*); University of Oxford
- 2003 National Science Foundation Graduate Research Fellowship
- 2003 Rhodes Scholarship
- 2002 Harry S. Truman Scholarship

Refereed journal publications

“How Do Patents Affect Research Investments?”

2017, *Annual Reviews of Economics* 9: 441-469

“Adjusting Risk Adjustment: Accounting for Variation in Diagnostic Intensity”

With Amy Finkelstein, Matthew Gentzkow, and Peter Hull

2017, *New England Journal of Medicine* 376(7): 608-610

“Sources of Geographic Variation in Health Care: Evidence from Patient Migration”

With Amy Finkelstein and Matthew Gentzkow

2016, *Quarterly Journal of Economics* 131(4): 1681-1726

NBER working paper #20789

“Why is Infant Mortality in the US Higher Than in Europe?”

With Alice Chen and Emily Oster

2016, *American Economic Journal: Economic Policy* 8(2): 89-124

NBER working paper #20525

“Paying on the Margin for Medical Care: Evidence from Breast Cancer Treatments”

With Liran Einav and Amy Finkelstein

2016, *American Economic Journal: Economic Policy* 8(1): 52-79

NBER working paper #20226

“Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials”

With Eric Budish and Benjamin Roin

2015, *American Economic Review* 105(7): 2044-2085

NBER working paper #19430

- Awarded the 2013 Kauffman/iHEA Award for Health Care Entrepreneurship and Innovation Research for “best original research paper on health care entrepreneurship”
- Awarded the 24th iHEA Arrow Award for “best health economics paper published in 2015”

“Intellectual Property Rights and Innovation: Evidence from the Human Genome”

2013, *Journal of Political Economy* 121(1): 1-27

NBER working paper #16213

“Estimating Marginal Returns to Medical Care: Evidence from At-Risk Newborns”

With Douglas Almond, Joseph Doyle, and Amanda Kowalski

2010, *Quarterly Journal of Economics* 125(2): 591-634

NBER working paper #14522

- Subsequent rejoinder: 2011, *Quarterly Journal of Economics* 126(4): 2125-2131
- Awarded the 2010 Healthcare Cost & Utilization Project (HCUP) Outstanding Article of the Year Award for “innovative and inspiring perspective on health, the health care field, public health policy, or research”
- Awarded the 2011 Garfield Economic Impact Award for “outstanding research that illustrates how medical or health research impacts the economy”

Working papers and work-in-progress

“Missing Markets for Innovation: Evidence from New Uses of Old Drugs”

With Eric Budish and Benjamin Roin

“The More We Die, The More We Sell? A Simple Test of the Home-Market Effect”

With Arnaud Costinot, Dave Donaldson, and Margaret Kyle

Revise-and-resubmit, *Quarterly Journal of Economics*

NBER working paper #22538

“Returns to Medical Spending: Evidence from Variation Across Physicians”

With Joseph Doyle and Amanda Kowalski

“Who Profits from Patents? Rent-Sharing at Innovative Firms”

With Patrick Kline, Neviana Petkova, and Owen Zidar

“How Do Patents Affect Follow-On Innovation? Evidence from the Human Genome”

With Bhaven Sampat

Revise-and-resubmit, *American Economic Review*

NBER working paper #21666

Published conference proceedings

“Is American Health Care Uniquely Inefficient? Evidence from Prescription Drugs”

With Margaret Kyle

2017, *American Economic Review Papers & Proceedings* 107(5): 486-90

NBER working paper #23068

“Patents and Research Investments: Assessing the Empirical Evidence”

With Eric Budish and Benjamin Roin

2016, *American Economic Review Papers & Proceedings* 106(5): 183-187

NBER working paper #21889

Other writing

“Intellectual Property Rights and Innovation: Evidence from Health Care Markets”

2016, in Josh Lerner and Scott Stern (editors), *Innovation Policy and the Economy Volume 16*: 53-87

NBER working paper #21246

“Innovation Inducement Prizes: Connecting Research to Policy”

2012, *Journal of Policy Analysis and Management* 31(3): 752-776

“Incentivizing Innovation: Adding to the Toolkit”

With Michael Kremer

2010, in Josh Lerner and Scott Stern (editors), *Innovation Policy and the Economy Volume 10*: 1-17

“Advance Market Commitments for Vaccines Against Neglected Diseases: Estimating Costs and Effectiveness”

With Ernst Berndt, Rachel Glennerster, Michael Kremer, Jean Lee, Ruth Levine, and Georg Weizsäcker

2007, *Health Economics* 16(3): 491-511

NBER working paper #11288

“Creating Markets for Vaccines”

With Rachel Glennerster and Michael Kremer

2006, *Innovations: Technology | Governance | Globalization* 1(1): 67-79

“Advance Market Commitments: A Policy to Stimulate Investments in Vaccines for Neglected Diseases”

With Owen Barder and Michael Kremer

2006, *The Economists' Voice* 3(3): article 1

“The Price of Life”

With Rachel Glennerster and Michael Kremer

2005, *Foreign Policy* May/June: 26-27

Invited presentations

2016 – 2017: Williams College; MIT; Council of Economic Advisers; ASSA annual meeting; UC-Berkeley Haas; Harvard; BU/Harvard/MIT Health Economics seminar; HBS; U-Chicago; Northwestern

2015 – 2016: HBS; Brown; Wellesley; Harvard; Koch Institute Cancer Symposium; NBER Summer Institute Law and Economics meeting

2014 – 2015: Federal Reserve Board; Harvard; MIT; U-Michigan; NBER Fall Public Economics meeting; Clemson; NYC health economics seminar; ASSA annual meeting; Chicago Booth; Dartmouth; HBS; US Patent and Trademark Office (USPTO); Maryland; BU School of Law; Analysis Group; MIT Sloan; UC-Berkeley Haas; NBER Innovation Policy and the Economy meeting; BU/Harvard/MIT Health Economics seminar; Harvard (“Innovation, regulation, and diffusion of medical technologies” workshop)

- 2013 – 2014: UCSD; UC-Berkeley Haas; Stanford; U-Arizona; Chicago Booth; UCLA Anderson; UC-Berkeley; ETH-Zurich; UT-Austin; UCLA; LSE; ASSA annual meeting; UC-Santa Barbara; Bryant; Duke Fuqua; FTC; U-Penn Wharton; Northwestern Kellogg; Princeton; NBER Summer Institute Productivity meeting; NBER Summer Institute Aging meeting; NBER Summer Institute Health Care meeting
- 2012 – 2013: Wellesley; Cornell Law School Empirical Patent Law Conference; U-Illinois at Urbana-Champaign; Office of Health Economics; Toulouse; UC-Berkeley Haas; Harvard Law School; Georgia Tech; MIT; NBER-NCAER-ICRIER Neemrana Conference; Yale Law School; 116th meeting of the National Advisory Council on Aging; U-Virginia; Carnegie Mellon; NBER Spring Productivity meeting; NBER Spring Public Economics meeting; Northwestern Kellogg (“Healthcare markets” conference); Bureau of Economic Analysis; Congressional Budget Office; NBER Summer Institute Industrial Organization meeting; NBER Summer Institute Law and Economics meeting
- 2011 – 2012: Brookings; NYU Law School
- 2010 – 2011: U-Illinois Chicago IGPA; U-Toronto Rotman; Notre Dame; Brown; NSTC (“Science of science measurement” workshop); ASSA annual meeting; Northeastern; NBER Economics of Digitization meeting; U-Maryland College Park; UC-Davis; Ohio State; RAND; UCLA; Southern California Conference in Applied Microeconomics; BU/Harvard/MIT Health Economics seminar; U-Warwick
- 2009 – 2010: NBER Fall Productivity meeting; U-Penn Wharton; Northwestern Kellogg; Northwestern; Columbia SIPA; Chicago Booth; Harvard Kennedy School; LSE, joint Department of Economics and Department of Management; Stanford, joint Department of Economics and GSB; MIT, joint Department of Economics and Sloan; HBS; UC-Berkeley Haas; Yale SOM; Broad Institute; Wellesley; Sciences Po (“Innovation without patents” conference); BU Law School (“Communicating technical knowledge” conference); WEAI meeting; NBER Summer Institute Aging meeting; IFPRI
- 2008 – 2009: Middlebury; NBER Summer Institute Health Care meeting
- 2007 – 2008: OECD (“Medicines for neglected and emerging infectious diseases” forum); ASSA annual meeting
- 2006 – 2007: NIH MIDAS meeting; Yale School of Medicine

Invited discussions

- 2016 – 2017: ASSA annual meeting
- 2015 – 2016: NBER Summer Institute Productivity meeting
- 2014 – 2015: USPTO/Chicago-Kent Empirical Intellectual Property roundtable
NYU Law Engelberg Center Empirical IP Research Conference
- 2013 – 2014: SIEPR Young Scholars Conference
NBER Public Economics Fall meeting
ASSA annual meeting
Yrjo Jahnsson Foundation Conference
- 2012 – 2013: NBER Conference on the Economics of Digitization
National Tax Association 2012 Annual Conference on Taxation
Harvard Business School (HBS) Strategy Conference
NBER Summer Institute Innovation Policy and the Economy meeting
NBER Summer Institute Entrepreneurship meeting
- 2011 – 2012: USPTO/Kauffman Foundation, Patents, Entrepreneurship, and Innovation conference
UC-Berkeley, Science, Intellectual Property, and Innovation All UC conference
NBER Technological Progress and Productivity Measurement Spring meeting
ASSA annual meeting
NBER Organizational Economics Working Group Fall meeting
NBER Summer Institute Innovation Policy and the Economy meeting
U-Chicago, Individuals and Institutions in the Health Care Sector conference
NBER Law and Economics Spring meeting
- 2010 – 2011: U-Michigan, CCC Doctoral Student conference
- 2009 – 2010: Harvard Law; Pharmaceutical Research, Development, and Markets conference

Grants

- 2017 Alfred P. Sloan Foundation
“Technological change and the economy”
- 2016 Washington Center for Equitable Growth grant with Patrick Kline, Neviana Petkova, and Owen Zidar
- 2015 Hoover IP² grant with Arnaud Costinot, Dave Donaldson, and Margaret Kyle
- 2013 – 2018 National Institutes of Health, U01 grant
“Empirical studies of the development and diffusion of medical technologies”
- 2012 – 2017 National Science Foundation, CAREER grant
“CAREER: Empirical studies of innovation in health care markets”
- 2012 – 2013 National Institutes of Health, R03 grant with Joseph Doyle and Amanda Kowalski
“Returns to medical spending: Evidence from variation across physicians”
- 2012 NBER Innovation Policy and the Economy grant with Bhaven Sampat
- 2011 NBER Innovation Policy and the Economy grant with Eric Budish and Ben Roin

Other professional service activities

Conference organization:

- Co-organizer (with Ben Jones and Scott Stern), NBER Summer Institute Innovation meeting, 2014 – present
- Program Committee, Winter Meetings of the Econometric Society, 2016
- Program Committee, International Society for New Institutional Economics, 2015
- Area co-organizer (with Barak Richman), American Law and Economics Association meeting, 2014

Referee:

American Economic Journal: Applied Economics; American Economic Journal: Economic Policy; American Economic Review; Econometrica; Economic Journal; Explorations in Economic History; Health Affairs; International Economic Review; International Journal of Industrial Organization; Israel Science Foundation; Journal of Finance; Journal of Health Economics; Journal of Human Resources; Journal of Industrial Economics; Journal of Law and Economics; Journal of Law, Economics, and Organization; Journal of Political Economy; Journal of Public Economics; Management Science; Mathematical Biosciences; National Science Foundation; Proceedings of the National Academy of Sciences; Quarterly Journal of Economics; RAND Journal of Economics; Review of Economic Studies; Review of Economics and Statistics; Science

Excellence in Refereeing Award, *American Economic Review*, 2014 and 2016

Excellence in Refereeing Award, *Quarterly Journal of Economics*, 2011

Selection Committee Member, Harry S. Truman Scholarship, 2008 – present

Updated: August 2017