Patrick Turley

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Education

9/2010 – 5/2016   Ph.D., Economics, Harvard University
Thesis: *Essays in Economics and Education*
9/2003 – 4/2010   BA, Economics and Mathematics, Brigham Young University
Valedictorian and University Honors
Thesis: *Partially Adaptive Estimation of Truncated Regression Models: A Comparison with Several Semiparametric Estimators*

Professional Positions

1/2021–   Assistant Professor (Research) of Economics
Center for Economics and Social Research, University of Southern California
Department of Economics, University of Southern California

11/2019–1/2021   Instructor
Analytic and Translational Genetics Unit, Massachusetts General Hospital
Broad Institute and Harvard and MIT

9/2016–11/2019   Research Fellow
Analytic and Translational Genetics Unit, Massachusetts General Hospital
Broad Institute and Harvard and MIT

Awards, Honors, and Fellowships

6/2019   UK Biobank Early Career Researcher of the Year
9/2015 – 5/2016   Roger L. Martin Cornerstone Graduate Student Fellowship
9/2010 – 5/2013   National Science Foundation Graduate Research Fellowship

Publications

"Wrestling with public input on an ethical analysis of scientific research" [fifth author of 7] with Daphne Oluwaseun Martschenko, Shawneequa L. Callier, et al. *Hastings Center Report*, 2023, **53**(S1), S50-S65.
"Wrestling with social and behavioral genomics: Risks, potential benefits, and ethical responsibility" [second to last author] with Michelle N. Meyer, Paul S. Appelbaum, et al. *Hastings Center Report*, 2023, **53**(S1), S2-S49.
"Public views on polygenic screening of embryos" [last author] with Michelle N. Meyer, Tammy Tan, Daniel J. Benjamin, and David Laibson. *Science*, 2023, **379**(6632), 541-543.
"Whole-genome sequencing reveals host factors underlying critical COVID-19" [minor contributor] with Athanasios Kousathanas, Erola Pairo-Castineira, et al. *Nature*, 2022, **607**, 97-103.

"Mendelian imputation of parental genotypes improves estimates of direct genetic effects" [10th author out of 11] with Alexander I. Young, Seyed Moeen Nehzati et al. Nature Genetics, 2022, **54**, 897-905.

"Within-sibship genome-wide association analyses decrease bias in estimates of direct genetic effects" [94th author out of 100] with Lawrence J. Howe, Michel Nivard, et al. Nature Genetics, 2022, **54**, 581-592.

"Polygenic prediction of educational attainment within and between families from genome-wide association analyses in 3 million individuals" [starred last author] with Aysu Okbay, Yeda We, et al. 2022, *Nature Genetics*, **54**, 437-449.

"A first update on mapping the human genetic architecture of COVID-19" [minor contributor] with the COVID-19 Host Genetics Initiative. 2022, *Nature*, **608**, E1-E10.

"Distributional Effects of Education on Health" [joint authorship] with Silvia H. Barcellos and Leandro Carvalho. *Journal of Human Resources*, *forthcoming*.

"Problems with Using Polygenic Scores to Select Embryos" [starred 1st author] with Michelle Meyers, David Cesarini, et al. *New England Journal of Medicine*, 2021, **385**(1), 78-86.

"Resource profile and user guide of the Polygenic Index Repository" [starred last author] with Joel Becker, Casper A.P. Burik, et al. *Nature Human Behavior*, 2021, **5**, 1744-1758.

"Genomic analysis of diet composition finds novel loci and associations with health and lifestyle" [8th author out of 46] with S. Fleur W. Meddens, Ronald de Vlamming, et al. *Molecular Psychiatry*, 2020, **26**, 1-14.

"Genomic relationships, novel loci, and pleiotropic mechanisms across eight psychiatric disorders" [94th author out of 150] with Phil H. Lee, Verneri Anttila, et al. *Cell*, 2019, **179**(7), 1469-1482.

"GWAS of risk tolerance and risky behaviors in over one million individuals identify hundreds of loci and reveal shared genetic influences" [88th author out of 97] with Richard K Linner, Pietro Biroli, et al. *Nature Genetics*, 2019, **51**(1), 245-257.

"Identification of common genetic risk variants for autism spectrum disorder" [65th author of 76] With Jakob Grove, Stephan Ripke, et al. *Nature Genetics*, 2019, **51**(3), 431-444.

"Discovery of the first genome-wide significant risk loci for attention-deficit/hyperactivity disorder" [41st author of 71] with Ditte Demontis, Raymond K Walters, et al. *Nature Genetics*, 2019, **51**(1), 63-75.

"Education can Reduce Health Differences Related to Genetic Risk of Obesity: Evidence from a British Reform" [joint authorship] with Silvia H. Barcellos and Leandro Carvalho. *Proceedings of the National Academy of Science*, 2018, **115**(42), E9765-E9772.

"Imprint of assortative mating on the human genome" [8th author of 14] with Loic Yengo, Matthew R Robinson, et al. *Nature Human Behavior*, 2018, **2**, 948-954.

"Gene Discovery and Polygenic Prediction from a 1.1-million-person GWAS of Educational Attainment" [starred last author] with James J. Lee, Robbee Wedow et al. *Nature Genetics*, 2018, **50**, 1112-1121.

"Analysis of shared heritability in common disorders of the brain" [16th author of 150] with Verneri Anttila, Brendan Bulik-Sullivan, et al. *Science*, 2018, **360**(6395).

"Multi-trait analysis of genome-wide association summary statistics using MTAG" [first author] with Raymond Walters, Omeed Maghzian, et al. *Nature Genetics*, 2018, **50**(2), 229-237.

"Was that SMART: Institutional Financial Incentives and Field of Study" [joint authorship] with Jeff Denning. *Journal of Human Resources*, 2017, **52**(1), 152-186.

"Genome-wide association study identifies 74 loci associated with educational attainment" [starred first author] with Aysu Okbay, Jonathan Beauchamp, et al. *Nature*, 2016, **533**, 539-542.

"Genetic variants associated with subjective well-being, depressive symptoms, and neuroticism identified through genome-wide analyses" [starred 1st author] with Aysu Okbay, Bart M.L. Baselmans, et al. *Nature Genetics*, 2016, **48**, 624-633.

"Common Genetic Variants Associated with Cognitive Performance Identified Using the Proxy-phenotype Method" with Cornelius Rietveld, Tonu Esko, et al. *Proceedings of the National Academy of Science*, 2014, **111**(38), 13790-13794.

"Skewness and Kurtosis Properties of Income Distribution Models" with James McDonald and Jeff Sorensen. *Review of Income and Wealth*, 2013, **59**(2), 360-374.

"Distributional Characteristics: Just a Few More Moments" with James McDonald. *The American Statistician*, 2011, **65**(2), 96-103.

Working Papers

"Distinct and shared genetic architectures of gestational diabetes mellitus and type 2 diabetes mellitus" [10th author of 14] with Amanda Elliott, Raymond K. Walters, et al. *medRxiv*. https://www.medrxiv.org/content/10.1101/2023.02.16.23286014v1

"Polygenic prediction across populations is influenced by ancestry, genetic architecture, and methodology" [11th author of 13] with Ying Wang, Masahiro Kanai, et al. *bioRxiv*. https://www.biorxiv.org/content/10.1101/2022.12.29.522270v1

"Leveraging functional genomic annotations and genome coverage to improve polygenic prediction of complex traits within and between ancestries" [5th author of 15] with Zhili Zheng, Shouye Liu, et al. *bioRxiv*. https://www.biorxiv.org/content/10.1101/2022.10.12.510418v1

"The Effect of Education on the Relationship between Genetics, Early-Life Disadvantages, and Later-Life SES" [joint authorship] with Silvia H. Barcellos and Leandro Carvalho. *NBER WP*, 28750. https://www.nber.org/papers/w28750

"Multi-Ancestry Meta-Analysis Yields Novel Genetic Discoveries and Ancestry-specific Associations" [first author] with Alicia Martin, Grant Goldman, et al. *bioRxiv*. https://www.biorxiv.org/content/10.1101/2021.04.23.441003v1

Research Grants

5/2023 – 4/2028   National Institute on Aging/National Institutes of Health (PI)
R01, R01AG0815181
"Studying the Genetics of Aging, Behavioral, and Social Phenotypes in Diverse Populations"

7/2019 – 6/2024   National Institute on Aging/National Institutes of Health (PI)
K99/R00, 1K99AG062787
"Genome-wide Analysis of Late-onset Alzheimer's Disease Using Intergenerational, Multi-trait, and Cross-ancestry Data"

4/2020 – 3/2022   National Institute on Aging/National Institutes of Health (PI)
R21, R21AG067585
"Estimating Assortative Mating, its History, and its Future Effect on Genetic Variance for Health, Behavioral, and Ancestry Phenotypes Using Cross-sectional Data"

Professional Activities

2021 – present   Director
Behavioral and Health Genomics Center, CESR, USC

2019 – present   Steering Committee, Methods Working Group Chair
Social Science Genetic Association Consortium

2019 – present   Group Member, Sounding Board Committee
                   Wrestling with Social/Behavioral Genomics: Risks, Potential Benefits, and
                   Ethical Responsibilities Working Group
2021   Organizing Committee
                   Equity in Biomedicine Seminar Series, Broad Institute
2019 – 2020   PRS Working Group
                   C-FoS Alzheimer's Disease Consortium

Referee: Quarterly Journal of Economics, American Economic Review, Biometrika, Nature Genetics, Nature Human Behavior, Nature Neuroscience, Nature Communications, AEJ-Policy, PNAS, eLife, Science Advances, Psychological Science, Bioinformatics, American Journal of Human Genetics, European Journal of Human Genetics, Scientific Reports, Genetics, Genetic Epidemiology, PLOS Genetics, Communications Biology, Demography, Economics of Education Review, Review of Income and Wealth, American Journal of Health Economics, Trends in Genetics

Grant reviewer: National Science Foundation, Russell Sage Foundation, Nuffield Foundation, Templeton Foundation

Discussant: American Economic Association Annual Meetings, Population Association of America Annual Meeting, Behavioral Genetics Association Annual Meeting

Dissertation Committee Member for Bart Baselmans, Department of Biological Pychology, Vrije Universiteit Amsterdam, December 2018

Teaching Experience

9/2021   Psychology 438: Behavioral Genetics, University of Southern California
                   Guest Lecture (course taught by Prof. Laura Baker)
6/2016 – 8/2021   Summer Institute in Social Science Genomics, Russell Sage Foundation
                   Visiting Faculty/Organizer
8/2019   Genoeconomics, Department of Economics, Aarhus University
                   Visiting Faculty (with Daniel Benjamin)
10/2017   Integrating Genetics and the Social Sciences, UC Boulder
                   Invited Lecturer, Statistical Genetics Workshop
9/2012 – 12/2012   Microeconomic Theory, Harvard University
                   Teaching fellow for Professor Edward Glaeser
1/2008 – 4/2008   Honors Economic Principles and Problems, BYU
                   Teaching assistant for Professor Larry Wimmer

Workshop Organizer

Social-science Genomics Journal Club/Seminar Series [Co-organizer]
        2021 – present, Center for Economic and Social Research, University of Southern California.
Russell Sage Foundation Summer Institute in Social-Science Genomics [Co-organizer]
        June 2019, Santa Barbara, CA
        August 2021, Stowe, VT
Program in Quantitative Genetics Working Group [Co-organizer]
        2018-2019, Harvard School of Public Health.

Conference Presentations, Posters, and Invited Talks

2023   UCLA Bioinformatics and Human Genetics Seminar, Los Angeles, CA
USC Biostatistics Seminar, Los Angeles, CA
John Hopkins Biostatistics Seminar, Virtual Meeting
American College of Medical Genetics Meeting, Invited Talk, Salt Lake City, UT
2022   NBER Summer Institute, Economics of Education Meeting, Cambridge, MA
American College of Medical Genetics Meeting, Invited Talk, Nashville, TN
OCD Working Group Meeting, Psychiatric Genetics Consortium
2021   Frontiers in Economic Analysis with Genetic Data, Madison, WI
Integrating Genetics and the Social Sciences Meeting, Virtual Meeting
BioTech Atelier, Keynote Presentation, Virtual Meeting
European Society of Human Genetics, Invited Speaker, Virtual Meeting
Mendelian Randomization Conference, Virtual Meeting
Within-Families Working Group Seminar, Bristol, UK
Behavior Genetics Association Conference, Virtual Meeting
Integrating Biological and Social Science into Health and Aging Research, Invited Talk,
    Virtual Meeting
Center for Economic and Social Research, USC, Research Seminar Series, Virtual Meeting
2020   Genomics for Health Conference, Arbeitsgemeinschaft fur Gen-Diagnostik, Virtual Meeting
American Society of Human Genetics Meeting, Virtual Meeting
Geisinger Health Systems, Research Seminar Series, Danville, PA
2019   American Society of Human Genetics Meeting, Houston, TX
Harvard Medical School, Department of Health Care Policy Seminar Series
Behavior Genetics Association Meeting, Karolinska Institutet, Stockholm, Sweden
2018   Behavior Genetics Association Meeting, The Broad Institute
Population Association of America Meeting, Denver, CO
NBER Summer Institute (Health), Cambridge, MA
Depression Working Group Meeting, Psychiatric Genetics Consortium
Medical and Population Genetics Research Seminar, The Broad Institute
2017   Boston College, Center for Retirement Research Seminar Series
Polygenic Prediction and its Application in Social Science Conference, USC
2016   Conference on Genetics and Social Science, University of Southern California
NBER Summer Institute (Health), Cambridge, MA
University of Southern California, CESR Seminar Series
2015   Integrating Genetics and the Social Sciences, University of Colorado Boulder
Stanford Institute for Theoretical Economics, Stanford University
Stanley Center, Broad Institute at Harvard and MIT
2014   Integrating Genetics and the Social Sciences, University of Colorado Boulder

Languages

English (native), French (fluent)