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# LUCAS J. MATTHEWS, PH.D.

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## ACADEMIC APPOINTMENTS

Columbia University & The Hastings Center, Postdoctoral Researcher  
September 2019 — present.

University of Virginia, Postdoctoral Research Associate, Genetics & Human Agency  
September 2016 — August 2019.

## AREAS OF SPECIALIZATION

Philosophy of Biology, Bioethics, and Behavior Genetics.

## AREAS OF COMPETENCE

Philosophy of Race, Philosophy of Mind & Cognitive Science, Experimental Philosophy,  
Symbolic Logic; General Philosophy of Science; History of Science; Philosophy of Social  
Science; and Philosophy of Medicine

## PUBLICATIONS

**Matthews, Lucas J.**, Lebowitz, Matthew S., Ottman, Ruth, and Paul S. Appelbaum. (2021).  
“Pygmalion in the Genes? On the Potentially Negative Psychosocial Impacts of Polygenic  
Scores for Educational Attainment.” *Social Psychology of Education*.

Martschenko, Daphne O. and **Matthews, Lucas J.** (2020). “Genomics & Behavior.” *Hastings  
Center Bioethics Briefings*. URL = [https://www.thehastingscenter.org/briefingbook/genomics-  
behavior-and-social-outcomes/](https://www.thehastingscenter.org/briefingbook/genomics-behavior-and-social-outcomes/)

Parens, Erik, **Matthews, Lucas J.**, and Applebaum, Paul S. (2020). “Polygenic Risk Scores,  
Prediction of Psychiatric Disorders, and the Health of All of Us.” *Lancet Psychiatry*: 7(6):  
481.

Downes, S. and **Matthews, Lucas J.** (2020). “Heritability.” *Stanford Encyclopedia of Philosophy*.  
URL = <https://plato.stanford.edu/archives/spr2020/entries/heredity/>

Giangrande, Evan J., Beam, Christopher R., Carroll, Sarah, **Matthews, Lucas J.**, Davis,  
Deborah W., Finkel, Deborah, and Turkheimer, Eric. (2019). “Multivariate Analysis of the  
Scarr-Rowe Interaction across Middle Childhood and Early Adolescence.” *Intelligence* 77  
(November): 101400.

**Matthews, Lucas J.**, and Turkheimer, Eric. (2019). “Across the Great Divide: Pluralism and  
the Hunt for Missing Heritability.” *Synthese*: 1-15.

**Matthews, Lucas J.** (2019). “Isolability as the Unifying Feature of Modularity.” *Biology &  
Philosophy* 34(2): 20.

**Matthews, Lucas J.** and Tabery, James (2018) “Mechanisms and the Metaphysics of  
Causation” in *Routledge Handbook of Mechanisms and Mechanical Philosophy* (Stuart Glennan and  
Phyllis Illari, eds.).

**Matthews, Lucas J.** (2017). “On Mechanistic Reasoning in Unexpected Places: The Case of Population Genetics.” *Biology & Philosophy* 32(6): 99–1018.

**Matthews, Lucas J.** (2016). “On Closing the Gap between Philosophical Concepts and Their Usage in Scientific Practice: A Lesson from the Debate about Natural Selection as Mechanism.” *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 55: 21–28.

Plutynski, Anya, Vernon, Kenneth Blake, **Matthews, Lucas J.**, and Molter, Daniel (2016) “Chance in the Modern Synthesis.” In *Chance in Evolution*, 76–102. Chicago & London: University Of Chicago Press.

**Matthews, Lucas J.** (2015). “Embedded Mechanisms and Phylogenetics.” *Philosophy of Science* 82 (5): 1116–26.

#### BOOK REVIEWS AND POPULAR MEDIA

Matthews, Lucas J. (2020). “Precision (Mis)Education.” *Hastings Center Report* 50 (1): inside front cover.

Matthews, Lucas J. (2019). Review of *Understanding Perspectivism: Scientific Challenges and Methodological Prospects*. *Notre Dame Philosophical Book Review*.

Matthews, Lucas J. (2019). “Beyond Human Nurture.” Review of *Blueprint: how DNA makes us who we are*. *Metascience*.

Matthews, Lucas J. (2018). “The Nature-Nurture Debate Today.” *Psychology Review* 24 (1): 25--27.

Matthews, Lucas J. and Turkheimer, Eric (2017). “Flynn, the Age-Table method, and a metatheory of intelligence.” Review of *Does your Family Make you Smarter? Nature, Nurture, and Human Autonomy* by James Flynn” in *Studies In History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Science*. 65: pp. 35-40.

#### EDUCATION

PH.D., 2016; PHILOSOPHY, UNIVERSITY OF UTAH

*On Mechanistic Reasoning in Evolutionary Biology*

Committee: Matt Haber and Jim Tabery (advisors), Steve Downes, Roberta Millstein, and Jon Seger

BA, 2009; MA 2010; PHILOSOPHY, UNIVERSITY OF CINCINNATI

#### WORKS IN PROGRESS

Matthews, Lucas J. “Half a Century Later and We’re Back Where we Started: how the problem of locality turned in to the problem of portability” (R&R).

Matthews, Lucas J. and Turkheimer, Eric. “Three Legs of the Missing Heritability Problem.” (Under review).

Matthews, Lucas J., Tabery, James, and Turkheimer, Eric. “How to Evaluate Potentially Abhorrent Research.” (In progress).

Matthews, Lucas J., and Johnston, Josephine (in progress). "What to do about genetic testing for educational outcomes" (Under review).

#### INVITED PRESENTATIONS

- "Schoolhouse Risk: minimizing the harms of polygenic scores for educational attainment"  
The Hastings Center; November 17, 2020.
- "On the Potential Harms of Polygenic Scores for Educational Attainment"  
Center for Excellence in ELSI Research, Columbia University; May 20, 2020.
- "How to Diagnose Potentially Abhorrent Research"  
Fortune's Favor: "Genetics and Justice" Seminar; Furman University; December 14, 2019.
- "Conceptual Questions in the Construction of PRSs"  
Investigating the Ethics of Polygenic Risk Scores: Short Course on ELSI Research at the Cutting Edge; Columbia University; September 20, 2019.
- "The Moralistic Fallacy Fallacy"  
WISHKABIBBLE; Aurlandsdalen Valley, Norway; July 2019.
- "How to Diagnose Potentially Abhorrent Research"  
*Genetics & Human Agency Annual Meeting*; May 2019.
- "Why you should care about the missing heritability problem"  
*Philosophy of Biology at the Mountains (POBAM)*; University of Utah, May 2018.
- "Across the Great Divide: connecting distal genetic causes and complex human behavior"  
*Workshop: The Biology of Behavior: explanatory pluralism across the life sciences*;  
Université du Québec à Montréal, May 2018.
- "Phylogenetic Mechanisms"  
WISHKABIBBLE; Gorges du Verdon, France; 2013.

#### PEER-REVIEWED CONFERENCE PRESENTATIONS

- "Pygmalion in the Classroom? On the potentially negative psychosocial impacts of polygenic scores for educational attainment"  
*National Human Genome Research Institute, Trainee Meeting*; Virtual, April 2021.
- "Negative Psychosocial Impacts of Polygenic Scores for Educational Attainment"  
*American Society for Bioethics & Humanities*; Virtual, October 2020.
- "How to Diagnose Potentially Abhorrent Research"  
Symposium organizer: "Philosophy in an Age of GWAS, Polygenic Prediction, and SNP Heritability"  
*International Society for the History, Philosophy, and Social Studies of Biology*; Oslo Norway, July 2019.
- "Three Legs of the Missing Heritability Problem"  
Symposium organizer: "Behavior Genetics: from heritability to GWAS and back again"  
*Biennial Meeting of the Philosophy of Science Association*; Seattle, November 2018.

- “Three Legs of the Missing Heritability Problem”  
Symposium organizer: “GWAS, Causality, and the Missing Heritability Problem”  
*Annual Behavior Genetics Association Meeting*; Boston, July 2018.
- “On the Differential Sensitivity of IQ Subtests to SES”  
*47th Behavior Genetics Annual Meeting*; Oslo, Norway, July 2017 (poster presentation).
- “The Missing Heritability Problem as Genetics, Psychology, and Philosophy”  
*Department of Philosophy Colloquium*, University of Utah, 2017.
- “On Mechanistic Reasoning in Unexpected Places: the case of population genetics”  
*Biennial Meeting of the Philosophy of Science Association*; Atlanta, 2016.
- “Population Genetics and Mechanism”  
*International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB)*; University of Montreal, Canada; 2015.
- “Embedded Mechanisms and Phylogenetics”  
*Biennial Meeting of the Philosophy of Science Association*; Chicago, 2014.
- “Conflicting Results for Natural Selection and the New Philosophy of Mechanisms”  
*International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB)*; University of Montpellier, France; 2013.
- “Explanation and Integrative Complexity: Lessons from the Psychopath”  
*International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB)*; University of Utah; 2011.
- “On the Value of Uncertainty: Lessons from Bootstrapped Phylogenies”  
-*International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB)*; University of Utah; 2011 (Poster Presentation).  
-*Intermountain West Graduate Philosophy Conference*; University of Utah; 2011.  
-*History and Philosophy of Biology in the Desert (HPBD)*; Arizona State University; 2011.
- “Fleshing Out the Epidemiological Account”  
*National Endowment for the Humanities (NEH) Summer Experimental Philosophy Institute*; University of Arizona; 2012.
- “Functional Reductionism and the Unpalatable Alternative: a Reply to Khalidi’s 2008 Challenge.”  
*University of Georgia Graduate Philosophy Conference*; University of Georgia; 2011.
- “On a Neurophilosophy of Science: Churchland’s Neurocomputational Perspective of Kuhnian Dynamics of Science.”  
*Taft Research Fellowship Presentation*; University of Cincinnati; 2010.
- “What is it Like to be a Dualist?”  
*Ohio State University Annual Undergraduate Philosophy Conference*; Ohio State University; 2009.

#### FELLOWSHIPS, AWARDS, AND GRANTS

Columbia University Center for Research on Ethical, Legal, & Social Implications of Psychiatric, Neurologic & Behavioral Genetics 2020 Pilot Grant (\$17,760).

Precision Medicine & Society Pilot Grant (\$7,400)  
Columbia University, 2019

Genetics & Human Agency Postdoctoral Research Fellowship  
University of Virginia, 2016-2019

Tanner Humanities Center Faculty Research Interest Group Grant (\$500)  
University of Utah, 2016

Department of Philosophy Tanner Fellowship  
University of Utah, 2015-2016

National Science Foundation, Travel Grant (\$350)  
History of Science Society meeting, Chicago, 2014

Marriner S. Eccles Graduate Research Fellowship  
University of Utah, 2014-2015

National Endowment for the Humanities, Visiting Scholarship  
Summer Experimental Philosophy Institute; University of Arizona, 2012

Utah Humanities Council Graduate Research Fellowship (\$7,000)  
University of Utah, 2011-2012

Children's Cognitive Research Lab, Research Assistantship  
University of Cincinnati, 2009-2010

Charles Phelps Taft Undergraduate Research Fellowship  
University of Cincinnati, 2009-2010

## TEACHING EXPERIENCE

Ethical, Legal, and Social Implications of Big Data Sociogenomics — Guest Lecture  
Columbia University, Spring 2021

Potential Psychosocial Impacts of Genomic Information — Guest Lecture  
Columbia University, Spring 2021

From Genes to Behavior: the science, philosophy, and ethics of human behavior genetics  
University of Virginia, Spring 2018

Race, IQ, and Genetics: diagnosing the abhorrent — Guest Lecture for Psych (8040)  
University of Virginia, Spring 2017

Bioethics (3520), 2011 to 2015 — Primary instructor  
University of Utah (Lecture and online)

Interdisciplinary Course Development, Embodied Cognition; Research Assistant  
University of Utah, 2013

Survey of Philosophy (1001), 2010/2011 — Primary instructor  
University of Utah

Ethics, Spring 2010 — Primary instructor  
Cincinnati State Technical and Community College

#### COURSES PREPARED TO TEACH

##### Upper-Division or Graduate Courses

- Bioethics
- Philosophy of Race
- General Philosophy of Science
- Philosophy of Biology
- History & Philosophy of Evolution
- Philosophy of Mechanisms
- Philosophy of Behavior Genetics
- Philosophy & Intelligence
- Experimental Philosophy
- Philosophy of Mind & Cognitive Science
- Philosophy of Psychology

##### Lower-Division Courses

- Critical Thinking
- Introduction to Philosophy
- Introduction to Ethics
- Introduction to Symbolic Logic
- Introduction to Philosophy of Psychology
- Introduction to Bioethics

#### TEACHING AWARDS, HONORS, AND NOMINATIONS

Thomas G. Stockham Medal for Conspicuously Effective Teaching  
(Honorable Mention); University of Utah, 2014

Ramona Cannon Teaching Award (nominee)  
University of Utah, 2014

#### WORKSHOPS, SEMINARS, AND TRAINING

Philosophy of Biology at the Mountains 2-day Seminar  
University of Utah; May 2018

Workshop: The Biology of Behavior: explanatory pluralism across the sciences  
Université du Québec à Montréal; May 2018

International Workshop on Statistical Genetic Methods for Human Complex Traits  
University of Colorado, Boulder; Institute for Behavioral Genetics, 2018

Advanced Genetic Epidemiology Statistical Workshop  
Virginia Commonwealth University, 2017

How to Think about the Heritability of Behavior  
University of Utah, 2017 (with Eric Turkheimer)

Big Data and Biology Workshop: is more data always better? Chicago Field Museum of Natural  
History, 2014.

Reasoning with Cases; Center for Philosophy of Science; University of Pittsburgh, 2012

## SERVICE

“Conference-workshop on Genetics & Responsibility,” co-Organizer  
Columbia University, May, 2021.

“Conference-workshop on Polygenic Risk Scores in Psychiatry,” co-Organizer  
Columbia University, March 10-11, 2019.

“Behavior Genetics: from heritability to GWAS and back again”, Symposium Organizer  
Biennial Meeting of the Philosophy of Science Association, November 2018.

“GWAS, Causality, and the Missing Heritability Problem”, Symposium Organizer  
Behavior Genetics Association, July 2018.

Genetics & Human Agency Annual Meeting, Local Organizing Committee  
University of Virginia, May 2017-2018.

Annual Graduate Biosciences Society Symposium Poster Session, Judge  
University of Virginia, April 2017.

Work/Life Balance, Panel Member  
The Gender and Sexuality Committee and the Diversity and Equality Committee  
University of Virginia, March 2017.

Philosophy of Intelligence Fall Reading Group, Organizer  
University of Virginia, 2016.

Philosophy of Behavior Genetics Summer Reading Group, Organizer  
University of Utah, 2016.

Archaeological Technician. Lower Dolores River Watershed Archaeology Project. Grand  
County, Utah. Brian Coddling (PI). Kate Magargal (Field Director), 2015.

Archaeological Technician. Colorado Plateau Archaeological Alliance (CPAA). Southern Utah.  
Jerry D. Spangler (PI), 2013.

Philosophy of Scientific Explanation Reading Group, Organizer  
University of Utah, 2013.

International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB), Local  
Organizing Committee; University of Utah, 2011.

Intermountain West Graduate Philosophy Conference, Co-Organizer  
University of Utah, 2012.

Hiring Committee, Graduate Representative  
University of Utah, 2012.

Undergraduate Philosophy Club, President  
University of Cincinnati, 2007-2010.

## MEMBERSHIP, GROUPS, AND ORGANIZATIONS

American Society for Bioethics and the Humanities, 2019-present.

Behavior Genetics Association, 2017-present.

Genetics and Human Agency, Advisory Board  
University of Virginia, 2016-2019.

International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB), 2011-present.

American Philosophical Association, 2010-present.

Philosophy of Science Association, 2010-present.

Philosophy of Biology Lab, 2010-2016  
University of Utah.

Graduate Philosophy Writing Group at the University of Utah, 2014-2016.

## GRANT REVIEWER

Tom Slick Research Awards in Consciousness, 2019.

## JOURNAL REVIEWER

*Social Science & Medicine*

*Perspectives on Psychological Science*

*Behavior Genetics*

*Biology & Philosophy*

*Erkenntnis*

*European Journal for Philosophy of Science*

*Philosophy, Theory, and Practice in Biology*

*Philosophy of Science*

*SAGE Open*

*Studies in the History and Philosophy of Biology Part C*

*Synthese*

## REFERENCES

Stephen M. Downes (Utah): [s.downes@utah.edu](mailto:s.downes@utah.edu)

Matt H. Haber (Utah): [matt.haber@utah.edu](mailto:matt.haber@utah.edu)

James Tabery (Utah): [james.tabery@utah.edu](mailto:james.tabery@utah.edu)



Eric Turkheimer (Virginia): [eric.turkheimer@virginia.edu](mailto:eric.turkheimer@virginia.edu)

Paul Appelbaum (Columbia): [psa21@cumc.columbia.edu](mailto:psa21@cumc.columbia.edu)