



**Demography and Genetics**  
**University of Colorado Population Center**  
**CUPC Day, November 3, 2021**  
**Jason Boardman**

# Annual Conference (IGSS)

12th Annual IGSS Conference • October 28-29, 2021

## Integrating Genetics and the Social Sciences 2021

Sponsored by:



National Institute on Aging



Research & Innovation Office  
UNIVERSITY OF COLORADO BOULDER

(R13 HD078100)

(9R13AG062366)

### Keynote Speaker: [Melinda Mills](#)

University of Oxford, Nuffield Professor of Sociology  
Director, Leverhulme Centre for Demographic Science

### Why the social sciences and genetics need each other

This talk first reflects on what genetics can offer the social sciences and vice versa, but also the advantages of working together. It delves into examples that have produced novel measures and better prediction of behavioural outcomes such as reproduction, education and status. The talk then turns to why genetic research can benefit from interaction with the social sciences, drawing attention to how heritability differs across birth cohorts and countries, that certain polygenic scores are highly correlated or vary by socioeconomic background or how a third predictor may be driving outcomes. The talk then stands back to question whether it is not only ethical but also technically plausible to use polygenic scores in policy interventions and beyond, including recent policy attempts. It then reflects on the impact of lack of diversity and representative samples in data (e.g., by ancestry, socioeconomic status, age, sex, country) on our findings. The talk concludes with several promising new large data collection efforts that contain novel measures and focus on hard to reach populations.

Thursday, October 28, 2021

Time	Event
8:00-8:30	Arrival, Introduction, Overview
8:30-9:20	Genes and SES Part 1
	<i>Tobias Wolfram</i> <a href="#">The Genetics of Occupational Status</a>
	<i>Rosa Cheesman</i> <a href="#">How do schools and residential areas interact with genetic factors to shape educational achievement?</a>
	<i>Gabriella Conti</i> <a href="#">Genes, Maternal Education, and Inequalities in Human Capital: Evidence from a British Cohort</a>
	<i>Patrick Turley</i> <a href="#">The Effect of Education on the Relationship between Genetics, Early-Life Disadvantages, and Later-Life SES</a>
	<i>Michael Topping</i> <a href="#">The Effects of Education on Cognition in Older Age: Evidence from Genotyped Siblings</a>

### Statistical Genetics Workshop: DNA methylation analysis using the Illumina MethylationEPIC arrays

[Allison Kupsco](#), Associate Research Scientist  
[Haotian \("Howie"\) Wu](#), Postdoctoral Research Scientist

Laboratory of Precision and Environmental Health  
Columbia University Mailman School of Public Health

This intensive half-day workshop will provide participants with a solid foundation in DNA methylation analyses for human population studies. Using hands-on R lab sessions, this workshop will integrate important conceptual and study design considerations where participants will work with real methylation data generated by the Illumina Infinium MethylationEPIC (850k) BeadChip platform. Participants will learn data handling, quality control, and basic analysis of DNA methylation data for epigenome-wide association studies (EWAS), including epigenetic clocks and regional analyses. Participants should leave this course prepared to undertake basic EWAS analyses. A working knowledge of R programming and basic knowledge of biostatistics are recommended for this course.



## Post-Doctoral Research Positions Demography and Genetics

November 13, 2017 by IBS Editor

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### Post-Doctoral Research Positions Demography and Genetics University of Colorado at Boulder

The Institute of Behavioral Science and the Institute for Behavioral Genetics recently received a T32 training grant from NIA to train pre and post-doctoral candidates in Demography and Genetics (T32AG052371). We are currently searching for two post-doctoral positions that will begin early or late Summer, 2018. These candidates will work with faculty in the IBS/IBG training program at the intersection of demographic and genetic research and will train in methods and substance in both areas. Each position is for a two-year period at the University of Colorado at Boulder.

# Graduate and Post Doctoral Training

Past trainees have transitioned to positions at leading research universities including:

Stanford (Domingue)

Penn State (Daw)

National Australian University (Roettger)

University of Colorado (Huigbregtse-Ketels)

MIT (Wedow)

University of Utah (Braudt)

Two students in this area (Davidson and Palarino) will be presenting momentarily

Highly  
cited  
research

Article



## Evaluating the Continued Integration of Genetics into Medical Sociology

Journal of Health and Social Behavior  
2021, Vol. 62(3) 404–418  
© American Sociological Association 2021  
DOI: 10.1177/00221465211032581  
jhsb.sagepub.com  
The SAGE logo consists of a stylized 'S' inside a circle, followed by the word 'SAGE' in a bold, sans-serif font.

Hot  
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Jason D. Boardman<sup>1</sup> and Jason M. Fletcher<sup>2</sup>

### Abstract

The 2010 special issue of *Journal of Health and Social Behavior*, titled “Fifty Years of Medical Sociology,” defined the contours of the medical sociological perspective. We use this as a backdrop to outline and assess the continued integration of genetics into medical sociology research. We contend that the explosion of genetic and epigenetic data in population health data sources has made the medical sociological perspective increasingly relevant to researchers outside of sociology, including public health, epidemiology, and quantitative genetics. We describe vast, underappreciated, and mostly unsolved challenges that limit the scientifically appropriate interest in incorporating genetics into existing paradigms. It is our hope that medical sociologists continue this integration but redouble efforts to maintain the core insights in social science research, such as the importance of environmental and structural (i.e., nonbiological) factors in determining health processes and outcomes and the use of rich, integrated, and rigorous empirical analyses.

# Externally Funded Projects: Genetics and Demography

## NICHD Projects

- The Social and Genetic Epidemiology of Health Behaviors: An Integrated Approach. R21 HD078031 (Boardman and Domingue)
- Examining the sources and implications of genetic homophily in social networks. R21HD071884 (Fletcher)
- Social Demographic Moderation of Genome-wide Associations for Body Mass Index. R01 HD060726 (Boardman and McQueen).
- A Genetic Study of Personal Traits that Promote or Inhibit Individual Well-Being. R01 HD064687 (Conger).
- Genetic Risk, Pathways to Adulthood, and Health Inequalities. NICHD R01 HD061622 (Shanahan).
- The Social Determinants of Genetic Expression: A Life course Perspective. NICHD K01 HD50336 (Boardman)

## Other Projects

- State moderation of race disparities in polygenic associations. Network on Life Course Health Dynamics and Disparities in 21st Century America (Boardman)
- The Microbiome and Biological Aging in the Add Health Study. R01 AG066498-01 (McQueen)
- Exploring Rural-Urban Differences in Polygenic Associations for Health among Older Adults in the United States. Interdisciplinary Network on Rural Population Health and Aging (Boardman)
- Genetic Aspects of Psychological Resiliency among U.S. Adults. MIDUS Pilot Grant Program-837F664/3297 (Boardman)