

Samuel V. Brown

DATA SCIENTIST · ECONOMIST

343 E. 115th St. Apt. 4A, New York, New York 10029 USA

+1 (401) 241-8494 | sam@samuel-brown.com | samuel-brown.com | [accidentallysam](https://www.linkedin.com/company/accidentallysam) | [accidentallysam](https://www.instagram.com/accidentallysam) | [accidentallysam](https://www.youtube.com/channel/UC...)

Profile

Data scientist with a strong economics background and experience in big data, machine learning, and statistics.

Skills

Programming	Python (scipy, numpy, pandas, scikit-learn), R (caret, dplyr, ggplot2), SQL, PHP, C/C++, MATLAB, STATA, Git, SVN
Machine Learning	Regression, Decision Trees, Genetic Algorithms, Clustering, Ensemble Methods
Statistical Methods	Regression Models, Time Series, Survival Analysis, Bayesian Statistics, Factor Analysis, Maximum Likelihood

Work Experience

The World Bank

DATA SCIENTIST [CONSULTANT]

Washington, DC

Oct 2014–Sep 2015

- Designed and implemented statistical models in R and STATA to measure the quality of health and education services throughout Africa, as part of the Service Delivery Indicators (SDI) Initiative
- Performed quality assurance, data compilation and cleaning, and analysis

Brown University & Innovations for Poverty Action

SENIOR RESEARCH ASSOCIATE, LEAD PROGRAMMER [PART-TIME]

Providence, RI; Bamako, Mali

May 2012–May 2014

- Managed a team of programmers and administered project SVN repository
- Leveraged ML and decision trees in Python and R to create a diagnostic model using high-frequency time-series symptomatology data
- Designed competing risks hazard models and estimated them in MATLAB using novel maximum expected likelihood procedures

NYU Center for Experimental Social Science

WEB DEVELOPER [CONSULTANT]

New York, NY

Sep 2012–Jun 2014

- Designed and implemented an extensible, PHP/HTML/AJAX web interface for conducting experiments on rational inattention, information partitions, and other decision-theoretic concepts
- Designed and maintained a MySQL database of experimental results

Brown University

DATA ANALYST [CONSULTANT]

Providence, RI

May 2010–Jun 2012

- Compiled and transformed complex ARIS/REDS panel data to perform descriptive statistics and regression analysis in MATLAB and STATA
- Designed and implemented interactive visualizations in MATLAB for both technical and non-technical audiences
- Analyzed the micro characteristics of rural Indian households and their interactions at the village, district, state, and national levels

The MITRE Corporation

DIGITAL/MICROELECTRONIC HARDWARE ENGINEER [FULL-TIME]

Beford, MA

Sep 2006–Jul 2008

- Performed digital signal processing, data analysis, hardware design, and embedded software development
- Assisted in the planning and execution of international GPS field-testing events

Education

UNDERGRADUATE STUDIES

Worcester Polytechnic Institute

BACHELOR OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING, WITH HIGH DISTINCTION

Worcester, MA

Sep 2003–Jul 2006

GRADUATE STUDIES

Brown University

MASTER OF ARTS IN ECONOMICS, PHD CANDIDATE

Providence, RI

Sep 2010–May 2017

- DISSERTATION TITLE:** *Risk-sharing, Investment, and Informal Institutions*

- REFERENCES:**

Professor Andrew Foster
Brown University Dpt. of Economics
Providence, RI 02912
+1 (401) 863-2537
afoster@brown.edu

Professor Anja Sautmann
Dir. Research, Education, and Training, J-PAL
Cambridge, MA 02142
+1 (617) 258-0667
asautmann@povertyactionlab.org

Professor Mark Dean
Columbia University Dpt. of Economics
New York, NY 10027
+1 (212) 854-3669
mark.dean@columbia.edu

• **THESIS TITLE:** *Rural Electric Cooperatives' Adoption of Renewable Energy Technology*

• **REFERENCES:**

Professor Paul V. Preckel

Purdue Univ. Dpt. of Agricultural Economics

West Lafayette, Indiana 47907

+1 (765) 494-4191

preckel@purdue.edu

Professor Brigitte S. Waldorf

Purdue Univ. Dpt. of Agricultural Economics

West Lafayette, Indiana 47907

+1 (765) 496-6262

bwaldorf@purdue.edu

Research and Teaching Fields

Primary Field Applied Microeconomics
Secondary Fields Microeconomic Theory, Econometrics, Experimental Economics

Teaching Experience

Brown University

INTERMEDIATE MICROECONOMICS (MATHEMATICAL)

Teaching fellow for Professor Roberto Serrano

Providence, RI

Spring 2016

PRINCIPLES OF ECONOMICS

Teaching fellow for Prof. Rachel Friedberg

Spring 2015

APPLIED RESEARCH METHODS FOR ECONOMISTS

Teaching fellow for Prof. Daniel Björkegren

Fall 2014

RACE AND INEQUALITY IN THE UNITED STATES

Teaching fellow for Prof. Glenn C. Loury

Spring 2012

ECONOMETRICS II

Teaching fellow for Prof. Adam McCloskey

Fall 2011

Honors, Scholarships, and Fellowships

2013 **Trainee Fellowship**, National Institute of Child Health and Human Development (NICHD)

2012 **Trainee Fellowship**, NICHD

2010 **Outstanding Master's Thesis Award**, Purdue University

2010 **Honor Society of Agriculture, Gamma Sigma Delta**, Purdue University

Papers

RESEARCH PAPERS

2018 **Multilateral Risk-Sharing and Individual Investment Incentives**, Working Paper

We propose a joint model of multilateral risk-sharing and investment. The key innovations of our model are that the division of the surplus from risk-sharing is determined by a Nash bargaining procedure and that investments are endogenous. We find that under risk-sharing, the ratio of investors' marginal utilities changes in direct proportion to any changes in the value of their outside options. Because of this, investors take on sub-optimal levels of risk to improve their outside options and, consequently, increase their share of the income pool. This leads to substantive inefficiencies in equilibrium. We test our model using panel data from PROGRESA, a large-scale government intervention in rural Mexico that features bi-yearly transfers of roughly 35% of household income given to eligible households. We find that non-beneficiary households inefficiently take on less risk in response to income increases among beneficiary households with whom they share risk, as our model predicts.

2016 **Subsidies, Information, and the Timing of Children's Health Care in Mali**, with Anja Sautmann and Mark Dean

We study how healthcare subsidies and improved information affect over- and under-use of primary healthcare in a randomized controlled trial of 1544 children in Mali. In a dynamic model of healthcare demand, misuse relative to policymaker preferences (here given by WHO care-seeking standards) arises from seeking care too early or too late during an illness spell. Using nine weeks of daily data, we show that the barrier to optimal care seeking is cost, not information: subsidies increase demand by over 250%, but overuse is rare with or without the subsidy. Information, contrary to intent, appears to increase underuse, as our model predicts.

WHITE PAPERS

2010 **Renewable Power Opportunities for Rural Communities**, with David G. Nderitu, Paul V. Preckel, Douglas J. Gotham, and Benjamin W. Allen. United States Department of Agriculture, Office of the Chief Economist.