FALLAW B. SOWELL

Office: Tepper School of Business
Carnegie Mellon University
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Pittsburgh, PA 15213
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EDUCATION:

Ph.D. Economics	December 1986; Duke University Thesis - Fractionally Integrated Vector Time Series
M.S. Statistics	December 1985; Univ of North Carolina at Chapel Hill Thesis - Model Based Seasonal Adjustment of Economic Time Series
M.A. Economics	May 1983; Duke University
B.A. Mathematics and Economics	June 1982, summa cum laude; Mercer University

HONORS:

George Leland Bach Award for Teaching Excellence; Graduating MBA Class at Carnegie Mellon University	2015, 1992
Alfred P. Sloan Doctoral Dissertation Fellowship; Alfred P. Sloan Foundation	1985 - 1986
Louie D. Newton Award; Mercer University	1982

Member: Phi Kappa Phi

PERSONAL INFORMATION:

United States Citizen
Born 1962
Married with two children (born 1996 and 2000)

PROFESSIONAL EXPERIENCE:

PROFESSOR

Associate Professor of Economics;	July 1994 –
Assistant Professor of Economics;	June 1988 – June 1994
Graduate School of Industrial Administration Carnegie Mellon University	
Visiting Scholar;	summer 1992
Division of Economic Analysis Commodity Futures Trading Commission	
Visiting Scholar;	March 1990
Division of International Finance Board of Governors of the Federal Reserve System	
Visiting Assistant Professor;	1987 – 1988
Department of Economics and Institute of Policy Sciences and Public Affairs Duke University	

ADMINISTRATOR

Deputy Dean, Student and Alumni Affairs, and Director, Master's Programs at GSIA Carnegie Mellon University	July 1997 – June 2001
Director, Master’s degree in Computation Finance Carnegie Mellon University	July 1998 – June 1999

RESEARCHER CENTER

Carnegie Mellon Electricity Center	February 2012 –

CONSULTANT

West Chester Capital, Modeling	Nov 2012 - Jan 2013
Trane/American Standard Inc, Forecasting	June 2003 – Mar 2004
Postal Rate Commission, Expert witness	Dec 1993 – June 1994
The Refractories Institute, Economic impact study	July 1993 – Oct 1993

PUBLICATIONS:

"The Empirical Saddlepoint Estimator,"
with Benjamin Holcblat, *Electronic Journal of Statistics*, 16(1)(2022)

"Inference for the Linear IV Model Ridge Estimator Using Training and Test Samples,"
with Nandana Sengupta, *Stats*, 4(3) (2021), https://doi.org/10.3390/stats4030043.

"On the Asymptotic Distribution of Ridge Regression Estimators Using Training and Test Samples,"
with Nandana Sengupta, *Econometrics*, 8(4) (2020),
https://doi.org/10.3390/econometrics8040039.

"A time-dependent model of power plant failures and recoveries captures correlated events and quantifies temperature dependence," with Murphy, S. and Apt, J., *Applied Energy* (2019).

"Bayesian Inference for ARFIMA Models," with Durham, G. , Geweke, J. , and Porter-Hudak, S., *Journal of Time Series Analysis*, doi:10.1111/jtsa.12443 (2019).

"Resource adequacy risks to the bulk power system in North America,"
with Murphy, S., Apt, J. and Moura, J., *Applied Energy, 212, 1360-1376* (2018).

"The Economics of Commercial Demand Response for Spinning Reserve,"
with Fisher, M. and Apt, J. *Energy Systems, 9, 3-23* (2018).

"Multimodality Adjusted p**-Formula and Confidence Regions,"
with Kees Jan van Garderen, *Econometric Theory, 22, 932-946* (2017).

"Robust Resource Adequacy Planning in the Face of Coal Retirements,"
with Lueken, R., Apt, J. *Energy Policy, 88, 371-388* (2016).

"Forecasting Residential Air Conditioning Loads,"
with Horowitz, S., Mauch, B, *Applied Energy, 132*, 47–55 (2014).

"The Hawthorne Effect and Energy Awareness,"
with Schwartz, D., Fischhoff, B., Krishnamurti, T, *Proceedings of the National Academy of Sciences of the United States of America, 110* (38) (2013).

"Optimality for the Integrated Conditional Moment Test,"
with Wm. Brent Boning, *Econometric Theory*, Vol. 15, No. 5, October 1999.

"Optimal Tests for Parameter Instability in the Generalize Method of Moments Framework,"
Econometrica, Vol. 64, No. 5 (September 1996).

"Fractional Integration with Drift: Estimation in Small Samples,"
with Anthony Smith and Stanley E. Zin, *Empirical Economics* (1997) 22:103-116.

"Consumption: Innovation Persistence and the Excess Smoothness Debate,"
with Kerry Patterson, A*pplied Economics* (1996) 28:1245-1255.

"Maximum Likelihood Estimation of Fractionally Integrated Time Series Models,"
Journal of Econometrics 52, 1992.

"Modeling Long Run Behavior with the Fractional ARIMA Model,"
Journal of Monetary Economics 29:2, April 1992.

"Evaluating Dimensionality in Spatial Voting Models,"
with Keith Poole and Stephen Spear, *Mathematical and Computer Modeling* 16:8/9, August/September 1992.

"On DeJong and Whiteman's Bayesian Inference for Unit Roots,"
Journal of Monetary Economics 28:2, October 1991.

"The Fractional Unit Root Distribution,"
Econometrica 58, March 1990.

PAPERS:

"Forest Fires: Why The Large Year-to-Year Variation in Forests Burned?"
with Dennis Epple and Jay Apt, 2024

"Generalized ESP Estimators" with Ali Atabaigi and Benjamin Holcblat, 2023

"The Asymptotic Distribution of the Ridge Estimator for Linear Instrumental Variables using K-fold Cross-Validation" with Nandana Sengupta, 2023

"Higher Order Bias of the Empirical Saddlepoint Estimator using the moment conditions from Two-Step GMM," Tepper School of Business, Carnegie Mellon University August 2011.

"Higher Order Bias of the Two-Step GMM estimator using a just identifies system with full rank"
Tepper School of Business, Carnegie Mellon University, August 2011.

"The Residential Real Time Electricity Pricing: An Analysis of the Illinois Experiment,"
with Shira Horowitz and Lester Lave, Tepper School of Business, Carnegie Mellon University, July 2010.

"The Empirical Saddlepoint Likelihood Estimator Applied to Two-Step GMM,"
Tepper School of Business, Carnegie Mellon University, May 2009.

"An Improved Approximation to the Distributions in GMM Estimation,"
Tepper School of Business, Carnegie Mellon University, May 2007.

"Tests for Violations of Moment Conditions,"
GSIA, Carnegie Mellon University, February 1996.

"An Approach to Specification Tests in the Generalized Method of Moments Framework,"
GSIA, Carnegie Mellon University, September 1994.

"A New Approach to Testing Parameter Instability in the Generalized Method of

Moments Framework," GSIA, Carnegie Mellon University, July 1993.

"The Estimation of Strategic Dynamic Economic Models,"
with Sanjay Srivastava, GSIA, Carnegie Mellon University, February 1992.

"A Decomposition of Block Toeplitz Matrices with Applications to Vector Time Series,"
GSIA mimograph, Carnegie Mellon University, November 1989.

"The Deterministic Trend in Real GNP,"
GSIA, Carnegie Mellon University, June 1989.

PRESENTATIONS AT UNIVERSITIES:

Notre Dame University, "The Empirical Saddlepoint Likelihood Estimator Applied to Two-Step GMM." (August 2009).

Carnegie Mellon University, Tepper, "The Empirical Saddlepoint Estimator." (September 2008).

Amsterdam School of Economics, The Netherlands, "The Empirical Saddlepoint Distribution for GMM Estimations." (May 2008).

HEC, France, "The Empirical Saddlepoint Distribution for GMM Estimations." (May 2008).

Institute for Advanced Studies, Austria, "The Empirical Saddlepoint Distribution for GMM Estimations." (May 2008).

University of Geneva, Switzerland, "The Empirical Saddlepoint Distribution for GMM Estimations." (May 2008).

University of Washington, Seattle, "The Empirical Saddlepoint Distribution for GMM Estimations." (March 2008).

Carnegie Mellon University, Tepper, CART, "Improved Statistical Inference." (November 2007).

Toulouse University, France, "The Empirical Saddlepoint Distribution for GMM Estimations." (October 2007).

University of Pennsylvania, "The Empirical Saddlepoint Distribution for GMM Estimations." (March 2007).

Yale University, "The Empirical Saddlepoint Distribution for GMM Estimations." (March 2007).

Carnegie Mellon University, Tepper, CART, "Empirical Saddlepoint Approximations for Statistical Inference." (October 2006).

Concordia University, "An Improved Approximation to the Distributions in GMM estimation." (September 2006).

University of Pittsburgh, “An Improved Approximation to the Distributions in GMM estimation.” (September 2006).

Carnegie Mellon University, Tepper, “Empirical Saddlepoint Approximations for Statistical Inference.” (April 2006).

University of Virginia, “Distribution for the location of a change point.” (January 1999).

Pennsylvania State University, “Optimal Tests for Parameter Instability in the GMM Framework.” (1996).

Cornell University, “Optimal Tests for Parameter Instability in the GMM Framework.” (1995).

Harvard-MIT Econometric Seminar, “Optimal Tests for Parameter Instability in the GMM Framework.” (1995).

Princeton University, “Optimal Tests for Parameter Instability in the GMM Framework.” (1995).

University of Minnesota, “Optimal Tests for Parameter Instability in the GMM Framework.” (1995).

University of Montreal, “Optimal Tests for Parameter Instability in the GMM Framework.” (1995).

Research Triangle Econometrics Group, “Optimal Tests for Parameter Instability in the GMM Framework.” (January 1995).

University of Virginia, “Optimal Tests for Parameter Instability in the GMM Framework.” (January 1995).

University of Virginia, PhD course, “GMM estimation in two lectures.” (January 1995).

California Institute of Technology, “Optimal Tests for Parameter Instability in the GMM Framework.” (1994).

University of California at San Diego, “Optimal Tests for Parameter Instability in the GMM Framework.” (1994).

University of Washington, Seattle, “Optimal Tests for Parameter Instability in the GMM Framework.” (1994).

Yale University, “Optimal Tests for Parameter Instability in the GMM Framework.” (1994).

California Institute of Technology, “The Estimation of Strategic Dynamic Economic Models.” (1992).

University of California at San Diego, “The Estimation of Strategic Dynamic Economic Models.” (1992).

University or Washington, Seattle, “Maximum Likelihood Estimation of Fractionally Integrated Time Series Models.” (1992).

University or Washington, Seattle, “Modeling Long Run Behavior with the Fractional ARIMA Model.” (1992).

Commodities Futures Trading Commission, “Modeling Long Run Behavior with the Fractional ARIMA Model.” (July 1992).

Commodities Futures Trading Commission, “Maximum Likelihood Estimation of Fractionally Integrated Time Series Models.” (June 1992).

Carnegie Mellon University, GSIA, “The Estimation of Strategic Dynamic Economic Models.” (1991).

Queens University, “Modeling Long Run Behavior with the Fractional ARIMA Model.” (April 1991).

Federal Reserve Board of Governors, “Maximum Likelihood Estimation of Fractionally Integrated Time Series Models.” (March 1990).

Federal Reserve Board of Governors, “Modeling Long Run Behavior with the Fractional ARIMA Model.” (March 1990).

California Institute of Technology, “The Fractional Unit Root Distribution.” (1988).

Carnegie Mellon University, GSIA, “The Fractional Unit Root Distribution.” (1988).

Harvard University, Economics, “The Fractional Unit Root Distribution.” (1988).

Michigan State University, “The Fractional Unit Root Distribution.” (1988).

Northwestern University, “The Fractional Unit Root Distribution.” (1988).

Stanford University, “The Fractional Unit Root Distribution.” (1988).

University of Chicago, GSB, “The Fractional Unit Root Distribution.” (1988).

University of Florida, “The Fractional Unit Root Distribution.” (1988).

University of Pittsburgh, “The Fractional Unit Root Distribution.” (1988).

University of Michigan, “The Fractional Unit Root Distribution.” (January 15, 1988).

North Carolina State University, “The Fractional Unit Root Distribution.” (1987).

University of Rochester, “The Fractional Unit Root Distribution.” (1987).

Research Triangle Econometrics Group, “Fractionally Integrated Vector Time Series.” (December 1986).

PRESENTATIONS AT COMPANIES:

Glance, "Introduction to Treatment Effects or Causal Inference," (2024)

Amazon coreAI, "The Asymptotic Distribution of the Ridge Estimator for Linear Instrumental Variables using K-fold Cross-Validation," (2023).

PRESENTATIONS AT CONFERENCES:

"Ridge Estimator for Linear Instrumental Variables using K-fold Cross-Validation" with Nandana Sengupta, North American Summer Meeting of the Econometric Society 2021

"The Empirical Saddlepoint Estimator" with Benjamin Holcblat, World Congress of the Econometric Society 2020

"On solutions to estimating equations and the empirical saddlepoint approximation of their distribution" with Benjamin Holcblat, 12th International Conference on Computational and Financial Econometrics (CFE 2018)

"The Empirical Saddlepoint Estimator" with Benjamin Holcblat. 11th International Conference on Computational and Financial Econometrics (CFE 2017)

"The Empirical Saddlepoint Likelihood Estimator Applied to Two-Step GMM" NBER/NSF Forecasting Seminar 2009

"The Empirical Saddlepoint Likelihood Estimator Applied to Two-Step GMM" Summer meetings of the Econometric Society 2009

"An Empirical Saddlepoint Approximation to the Distributions" One-Step GMM Estimators" ASSA meetings 2007

"An Improved Approximation to the Distribution in GMM Estimation" North American Summer Meeting of the Econometric Society 2006

"An Improved Approximation to the Distributions in GMM Estimation with Dependent Data" NSF/NBER Time Series Conference 2006

"Optimal Tests for Change Points via Stochastic Calculus" SIAM Annual Meetings 1996

"Tests for Violations of Moment Conditions" NBER Economic Fluctuations and Growth Seminar 1996

"The Estimation of Dynamic Strategic Economic Models" NSF/NBER Time Series Conference 1991

"Modeling Long-Run Behavior with the Fractional AIRMA Model" ORSA/TIMS Conference on Applied Probability in the Engineering, Informational and Natural Sciences 1991

"Modeling the Long-Run Behavior of Time Series" Institute for Mathematics and its Applications Conference on Time Series 1990

"Maximum Likelihood Estimation of Fractionally Integrated Time Series Models" North American Summer Meeting of the Econometric Society 1988

"The Estimation of Fractional Co-Integrated Models" North American Summer Meeting of the Econometric Society 1986

EDITORIAL BOARDS:
Associate Editor for *Journal of Econometrics* (1995 to 2012)
Associate Editor for *Southern Economic Journal* (1999 to 2005)
Associate Editor for *Journal of Business and Economic Statistics* (1997 to 2001)

REFEREE AND REVIEW:
Applied Economics, Applied Energey, American Economic Review, Computational Statistics and Data Analysis, Econometrica, Econometric Theory, Economic Modelling, Economics Letters, Empirical Economics, The Energy Journal, Energy Policy, European Economic Review, International Journal of Forecasting, Journal of the American Statistical Association, Journal of Applied Econometrics, Journal of Business an Economic Statistics, Journal of Development Economics, Journal of Econometrics, Journal of Economic Theory, Journal of Economic Dynamics and Control, Journal of Empirical Finance, Journal of Finance, Journal of Forecasting, Journal of Monetary Economics, Journal of Money, Credit and Banking, Journal of Time Series Analysis, Operations Research, Oxford Economic Papers, Pakistan Journal of Statistics, The Review of Economics and Statistics, Southern Economic Journal, Stats, Water Resources Management, Social Science and Humanities Research Council of Canada, National Science Foundation, Research Grants Council of Hong Kong, The Proceedings of the Fourth and Fifth International Symposium in Economic Theory and Econometrics, Earhart Foundation.

RESEARCH SUPPORT:

Dean’s Summer Support Fund supported at the Tepper School of Business,
“Conditional Average Treatment Effects Estimation and Inference”
August 2023 - December 2023

PNC Center for Financial Services Innovation,
“Understanding Vector Autoregressions in Marketing”
July 2015-June 2016

PEPCO Electricity project
August 2010-August 2013

Pittsburgh Super Computing Center. Grant SEs060004P. 10,000 hours on the Cray XT-3.
“An Improved Approximation to the Distributions in GMM Estimation”
August 2006 to October 2007

The Refractories Institute
“The Importance of the Refractories Industry in the United States Economy”
July 1993

Faculty Development Grant Carnegie Mellon University
“The Estimation of Dynamic Strategic Economic Models”
December 1, 1991 to December 1, 1992

The Sloan Foundation Grand for Political Economy
“On the Estimation of Models in Political Economy”
Summer 1991

Faculty Development Grant Carnegie Mellon University
"The Predictive Abilities of Long Run Economic Models"
March 1, 1989 to March 1, 1990

PROFESSIONAL ACTIVITY:
Conference Support:

Session Chair, 2018
12th International Conference on Computational and Financial Econometrics (CFE 2018)

Chaired One Session 2007
Colloque CIREQ Conference on Generalized Method of Moments

Discussed Paper; 2002
Allied Social Science Association Winter Meetings

Discussed Paper; 2000
Allied Social Science Association Winter Meetings

Program Committee; 1998
Summer Meetings of the Econometrics Society

Discussed Paper; 1993
Allied Social Science Association Winter Meetings

Chaired One Session and Discussed Paper; 1990
Allied Social Science Association Winter Meetings

Discussed Paper; 1990
Southern Economic Association Meetings

Chaired One Session and Discussed Two Papers; 1988
Allied Social Science Association Winter Meetings

Rapporteur; The 34th Meeting of the NBER-NSF 1987
Seminar on Bayesian Inference in Econometrics

PROFESSIONAL MEMBERSHIPS:

- American Economic Association
- Econometric Society
- American Statistical Association

COMMITTEES AT CMU:

- Ad Hoc Committee on Analytics in the MBA program (2023 - 2024)
- CMU Faculty Senate (2018 - 2020)
- McGowan Scholarship Committee (2017 - 2019)
- MSBA Faculty Advisory Committee (2019 – present, Chair 2021-2022)
- Online-Hybrid MBA Advisory Committee (2014 - 2019)
- Masters Academic Actions (1995-1997, Chair 1997-2001, 2014-present)
- Elliott Dunlap Smith Award (1991-92, 1994-96, 2004-05, 2010-11, Chair 2012-16)
- Head of Master's Program Search Committee (2014 - 2015)
- PhD Committee Tepper School of Business (2004-2006)
- Qatar Steering Committee (2003-2004)
- MSEC Advisory Committee (2002-2004)
- CMU Faculty Computing Committee (2001-2003)
- Masters Educational Affairs (Co-chair 1994-1995; Chair 1995-1997)
- Masters Admissions (1995-1997)
- Faculty Advisor Toast-masters Club (1995-1997)
- Faculty Advisor Wine Tasting Club (1995-1999)
- GSIA Dean Search (1990-1991)

PH.D. STUDENT ADVISING:

Nandana Sengupta (Chair of Committee, Ph.D., 2015)

Benjamin Holcblat (Chair of Committee, Ph.D., 2012)

Ali Atabaigi (Committee Member, Ph.D., 2026 expected)
Sinnott Murphy (Committee Member, Ph.D., 2019)
Atanu Paul (Committee Member, Ph.D., 2018)
Daniel Schwartz (Committee Member, Ph.D., 2013)
Shira Horowitz (Committee Member, Ph.D., 2012)
Yangfang (Helen) Zhou (Committee Member, Ph.D., 2012)
Steven Lugauer (Committee Member, Ph.D., 2008)
Anastasiya Ostrovnaya (Committee Member, Ph.D., 2007)
Dan Li (Committee Member, Ph.D., 2007)
Roni Israelov (Committee Member, Ph.D., 2007)
Tingjun Liu (Committee Member, Ph.D., 2007)
Michele DiPietro (Committee Member, Ph.D., 2001)
Sumihiro Takeda (Committee Member, Ph.D., 2000)
Juha Korpela (Committee Member, Ph.D., 1999)
Wm. Brent Boning (Committee Member, Ph.D., 1998)
Paul Parfomak (Committee Member, Ph.D., 1996)
Marvin Blachman (Committee Member, Ph.D., 1995)
Julius Kim (Committee Member, Ph.D., 1995)
Jin Wan Cho (Committee Member, Ph.D., 1994)
Arnold Juster (Committee Member, Ph.D., 1994)
Burton Hollifield (Committee Member, Ph.D., 1992)

TEACHING EXPERIENCE:

Ph.D.

- Econometrics I
- Econometrics II
- Time Series Models
- Estimation of Continuous Time Models
- Topics in Econometrics

MS Business Analytics

- Statistical Foundations of Business Analytics

MS Computation Finance

- Derivative Securities: Theory and Mathematical Models
- Estimation of Continuous Time Models in Finance

MS Electronic Commerce

- Managerial Economics

MBA

- Statistical Models for Management and Control - Causal Inference
- Managerial Economics
- Options
- Statistics for Manufacturing
- Business Forecasting with Time Series Models
- Introduction to Statistical Inference

Undergraduate

- Introduction to Microeconomics
- Introduction to Statistical Inference

Executive Education

- Vector Autoregression (VAR) Short Course
- Quantitative Risk Management for Retail Leaders