

Keith Waters

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EDUCATION

Doctor of Philosophy

George Mason University – Public Policy (Regional Development) 2018

Master of Arts

University of North Carolina at Charlotte – Geography (Urban Analysis) 2013

Bachelor of Arts

Western Michigan University – Economics, Geography, Mathematics 2010

EXPERIENCE

Stephen S. Fuller Institute

Assistant Director, Winter 2023 – Present

ASU School of Complex Adaptive Systems

Visiting Scholar/Researcher, Winter 2023 – Present

ASU School of Complex Adaptive Systems

Postdoctoral Researcher, Summer 2021 – Fall 2022

GMU Center for Regional Analysis

Senior Research Associate, Fall 2019 – Fall 2022

Indiana University

Postdoctoral Researcher, Winter 2020 – Spring 2021

Adaptive Regional Solutions

Founder, Fall 2019 – Winter 2021

Regional Economic Modeling Inc.

Economist, Summer 2019 – Fall 2019. Amherst, MA

GMU Center for Regional Analysis

Senior Research Associate, Winter 2019 – Summer 2019

GMU Center for Regional Analysis & Stephen S. Fuller Institute

Graduate Research Assistant, 2013 – 2019

U.S. Economic Development Administration

Intern, Winter 2015

U.S. Economics and Statistics Administration

Intern, Summer 2014

UNC Charlotte Urban Institute

Graduate Research Assistant, 2011 - 2013

Northwest Michigan Council of Governments

Regional Planning Intern, 2011

W.E. Upjohn Institute for Employment Research

Regional Economics Research Intern, Summer 2010

W.E. Upjohn Center for Geographical Change

G.I.S. Technician, 2008 – 2010

PUBLICATIONS – PEER REVIEWED

Waters, Keith, and Shade T. Shutters. “Regional economic tightness from rural to urban regions.” *Urban Transformations*. 4 (15) 1-18, 2022.

Waters, Keith, and Shade T. Shutters. “Skills-Approximate Occupations: Using Networks to Guide Jobs Retraining.” *Applied Network Science*. 7 (43) 1-13, 2022.

Shutters, Shade T., Keith Waters, and Rachata Muneeppeerakul. “Triad Analysis of Global Energy Trade Networks and Implications for Energy Trade Stability.” *Energies*, 15 (10), 1-15, 2022.

Waters, Keith, and Shade T. Shutters. “Impacts of Skill Centrality on Regional Economic Productivity and Occupational Income.” *Complexity*, 1-7, 2022.

Shutters, T. Shade, Holger Siebert, Bastian Alm, and Keith Waters. “Industry interconnectedness and regional economic growth in Germany.” *Urban Science*, 22, 1-12, 2022.

Shutters, T. Shade, and Keith Waters. “Inferring networks of interdependent labor skills to illuminate urban economic structure.” *Entropy*, 22, 1-12, 2020.

BOOK CHAPTERS

Song, Abraham, and Keith Waters. “A Tale of Two Cities: How Arlington won and Baltimore lost in battle for Amazon’s HQ2.” *Entrepreneurial Ecosystems*. Forthcoming.

Irving, Jacob, Keith Waters, Terry Clower, and Will Rifkin. “Pandemic Regional Recovery Index: An Adaptable Tool for Decision-making on Regions.” *Pandemic and the City*. Forthcoming.

REPORTS – SELECTED

Clower, Terry, Brian Hollar, and Keith Waters. “Washington Metropolitan Area Transit Authority Paper 3: Long-Term Considerations.” *Center for Regional Analysis*, George Mason University. Arlington, VA, December 2021.

Clower, Terry, Brian Hollar, and Keith Waters. “Washington Metropolitan Area Transit Authority Paper 2: WMATA Compact Area Sector-By-Sector Travel Typologies, Recovery Strengths and Likelihoods.” *Center for Regional Analysis*, George Mason University. Arlington, VA, October 2021.

Clower, Terry, Brian Hollar, and Keith Waters. “Washington Metropolitan Area Transit Authority Paper 1: Regional Economic Scenarios.” *Center for Regional Analysis*, George Mason University. Arlington, VA, August 2021.

Clower, Terry, and Keith Waters. “The Impact of Prohibiting Pocket-Listings on the NVAR Region.” *Center for Regional Analysis*, George Mason University. Arlington, VA, April 2020.

Clower, Terry, and Keith Waters. “Economic and Development Impacts of New Natural Gas Utility Services in Front Royal, Virginia.” *Center for Regional Analysis*, George Mason University. Arlington, VA, June 2019.

Waters, Keith. “The Impact of Changing Federal Procurement Outlays on Selected Sub-Sectors in the Washington Region’s Economy: Custom Computer Programming Services.” *Stephen S. Fuller Institute*, George Mason University. Arlington, VA, November 2017.

- Waters, Keith. "The Impact of Changing Federal Procurement Outlays on Selected Sub-Sectors in the Washington Region's Economy: Research and Development in the Social Sciences and Humanities." *Stephen S. Fuller Institute*, George Mason University. Arlington, VA, November 2017.
- Waters, Keith. "The Impact of Changing Federal Procurement Outlays on Selected Sub-Sectors in the Washington Region's Economy: Other Management Consulting Services." *Stephen S. Fuller Institute*, George Mason University. Arlington, VA, November 2017.
- Waters, Keith. "Federal Procurement Spending in the Washington Region: 2008 – 2016." *Stephen S. Fuller Institute*, George Mason University. Arlington, VA, 2017.
- Waters, Keith. "Fortune 500 Companies in the Washington Metropolitan Area." *Center for Regional Analysis*, George Mason University. Working Paper No. 2015-01. Arlington, VA, 2015.
- Waters, Keith. "The Potential Impact of the Panama Canal Expansion on the Port of Virginia." *Center for Regional Analysis*, George Mason University. Working Paper No. 2014-01. Arlington, VA, 2014.

PRESENTATIONS - CONFERENCES

- Palm Oil Trade Networks. *Southeastern Division of the American Association of Geographers Annual Conference*. Atlanta, November 21, 2022.
- Pandemic Risk and Recovery Index: Understanding Persistent Impacts of a Global Endemic From Home. *Regional Science Academy Lecture Series*. Virtual, August 25, 2022.
- Co-Agglomeration Networks. *American Association of Geographers*. Virtual, February 25, 2022.
- Coal Trade Networks and Trading Communities: The case of Australia. *Western Regional Science Association*. Scottsdale, AZ, February 19, 2022.
- Rural Economic Tightness: From Rural to Populous Regions. *Southern Regional Science Association*. Virtual, April 6, 2021.
- Skills-Approximate Occupations: Using Networks to Guide Jobs Retraining. *Western Regional Science Association*. Virtual, February 24, 2021.
- Inter-Regional Migration Networks: Social Network Analysis of an Agent-Based Model of a System of Cities. *North American Regional Science Council*. Virtual, November 12, 2020.
- Geographic Location of Cities: An Agent-Based Model of Inter-Regional Job Search. *American Association of Geographers Annual Meeting*. Denver, CO, April 6, 2020.
- Firm Formation and Regional Labor Allocation. *Eastern Economic Association Annual Conference*. Eastern Economic Association, New York, NY, March 1, 2019.
- Poster Presentation: Knowledge Spillovers and Labor Agglomeration. *International Congress on Agent Computing*. George Mason University, Fairfax, VA, November 29, 2016.
- Human Capital Agglomeration. *PhD Workshop*. George Mason University, Arlington, VA, October 24, 2016.
- Inter-Metropolitan Migration Networks in the United States. *American Association of Geographers Annual Meeting*. San Francisco, CA, March 29, 2016.
- Inter-Metropolitan Migration Networks in the United States. *Where I Fare Well, There is My Home: Migration, Past and Present Graduate Conference*. Duke University, Durham, NC, March 4, 2016.

PRESENTATIONS – INVITED TALKS

Washington Area Economy: Performance and Outlook. *TTR Sotheby's International*. Georgetown, DC, June 16, 2022.

Southeast Fairfax Economic Summit: Performance and Outlook. *Southeast Fairfax Economic Summit*. Alexandria, VA, April 7, 2022.

Washington Area Economy: Performance and Outlook. *Greater Washington Association for Financial Professionals*. Webinar, February 9, 2022.

Regional Economic Snapshot. *Leadership Alexandria*. November 19, 2021

State of the Maryland Real Estate Market. *Apartment and Office Building Association of Metropolitan Washington*. Webinar, January 11, 2021.

State of Virginia Multifamily and Commercial Housing Market. *Apartment and Office Building Association of Metropolitan Washington*. Webinar, December 17, 2020.

Washington Area Economy: Performance and Outlook. *Greater Washington Association for Financial Professionals*. Webinar, September 9, 2020.

Prince William County and the Greater Washington Area: Recent Trends and Outlook. *Prince William Economic Development Office and the Prince William County Chamber of Commerce*. Strategic Planning Roundtable, December 18, 2019.

Washington Area Economy: Performance and Outlook. *Financial Planning Association of the National Capital Area*. Luncheon, December 5, 2019.

The Economics of Universal Healthcare: Case Study of Vermont Public Option. *REMI*. Webinar, August 27, 2019. www.remi.com/event/the-economics-of-universal-healthcare-case-study-of-vermont-public-options-keith-waters-remi-recording/

Washington Area Economy: Performance and Outlook. *Greater Washington Association for Financial Professionals*. Webinar, February 13, 2019.

WORKS IN PROGRESS

Waters, Keith, and Shade Shutters. "Global Coal Trade Distributions from 1988 to 2021."

Waters, Keith, Shade Shutters, and Rachata Muneeppeerakul. "Trade Network Entropy in the World Energy Market."

Altiparmak, Suleyman, Cam Thies, Shade Shutters, and Keith Waters. "Inducing New Bilateral Oil Interdependencies: The unintended impact of 2014 US-led sanctions on Russia."

Altiparmak, Suleyman, Keith Waters, Cam Thies, and Shade Shutters. "Cornering the Cobalt Market Within Asymmetric Layers: An investigation on China's cobalt politics and foreign direct investments in the Democratic Republic of Congo."

Waters, Keith, Suleyman Altiparmak, and Shade Shutters. "Global Palm Oil Trade Networks."

Waters, Keith. "Firm Formation and the Regional Allocation of Labor."

Waters, Keith, and Shutters, Shade. "Regional Economic Tightness from Rural to Populous Regions."

GRANT APPLICATIONS

National Science Foundation SBE Postdoctoral Fellowship, 2019. Keith Waters (Principal Investigator), and Robert Axtell (Sponsoring Scientist). Inter-Regional Economic Dynamics: An Agent-Based Model of a System of Cities. Amount: \$138,000. Result: Declined.

TEACHING EXPERIENCE

- Instructor**, Spring 2021. George Mason University. POGO 511 - Intro Data Analysis for Policy and Government
- Instructor**, Spring 2019. George Mason University. POGO 511 - Intro Data Analysis for Policy and Government
- Guest Lecturer**, Fall 2019. George Mason University. GOVT 464 - Urban Economic Development in the Smart Growth Era
- Guest Lecturer**, Spring 2019. George Mason University. PUBP 602 – Regional Economic Development: Strategies and Applications
- Teaching Assistant and Guest Lecturer**, Spring 2019. George Mason University. PUBP 754 - GIS and Spatial Analysis for Public Policy
- Guest Lecturer** Spring 2019. George Mason University. PUBP 804 – Multivariate Statistical Analysis
- Guest Lecturer**, Fall 2018. George Mason University. GOVT 464 - Urban Economic Development in the Smart Growth Era
- Guest Lecturer**, Fall 2018. George Mason University. POGO 611 – Advanced Data Analysis for Policy and Government
- Co-Instructor**, Summer 2017. George Mason University. PUBP 555 - Economics Math Workshop
- Guest Lecturer**, June 2017. The World Bank SURR-MENA GIS Learning Weeks. Spatial Econometrics and Programming for G.I.S.
- Co-Instructor**, January 2017. George Mason University. PUBP 555 - Economics Math Workshop
- Teaching Assistant**, Spring 2017. George Mason University. PUBP 520 - GIS and Spatial Analysis for Public Policy
- Teaching Assistant**, Fall 2016. George Mason University. PUBP 511 - Statistical Methods for Policy Analysis
- Co-Instructor**, August 2016. George Mason University. PUBP 555 - Economics Math Workshop
- Teaching Assistant**, Spring 2016. George Mason University. PUBP 520 - GIS and Spatial Analysis for Public Policy

ACADEMIC SERVICE

- AAG Economic Geography Specialty Group - At-large Board Member, 2022.
- WRSB – Strategic Planning Board, 2022.
- GMU - Vice President of the Association of Public Policy PhD Students; Conference Chair of the Advancements in Public Policy Conference, 2014.
- Western Michigan University, University of North Carolina at Charlotte - Gamma Theta Upsilon Member
- University of North Carolina at Charlotte - Graduate Senator

ADVANCED TECHNICAL SKILLS

Python, QGIS, ArcGIS, STATA, GeoDa, R, Pajek