

# 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

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## EXPERIENCE

### **ASU School of Complex Adaptive Systems**

Postdoctoral Researcher, Summer 2021 – Present

### **GMU Center for Regional Analysis**

Senior Research Associate, Fall 2019 – Present

### **Adaptive Regional Solutions**

Founder, Fall 2019 – Present

### **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

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## PUBLICATIONS – PEER REVIEWED

- Waters, K.; Shatters, S.T. Skills-Approximate Occupations: Using Networks to Guide Jobs Retraining. *Applied Network Science*. (Accepted).
- Shatters, 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. Shatters. "Impacts of Skill Centrality on Regional Economic Productivity and Occupational Income." *Complexity*, 1-7, 2022.
- Shatters, T. Shade, Holger Siebert, Bastian Alm, and Keith Waters. "Industry interconnectedness and regional economic growth in Germany." *Urban Science*, 22, 1-12, 2022.
- Shatters, T. Shade, and Keith Waters. "Inferring networks of interdependent labor skills to illuminate urban economic structure." *Entropy*, 22, 1-12, 2020.

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## REPORTS – SELECTED

- 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.

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## PRESENTATIONS - CONFERENCES

- 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.

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## PRESENTATIONS – INVITED TALKS

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/](http://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.

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## WORKS IN PROGRESS

Shutters, Shade, and Waters, Keith. "Industrial Structure and a Tradeoff Between Productivity and Resilience." *SSRN Electronic Journal*, 3702545, 1-20, <https://ssrn.com/abstract=3702545>, 2020.

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

Irving, Jacob; Waters, Keith; Clower, Terry; and Rifkin, Will. "Pandemic Regional Recovery Index."

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

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## 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.

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## 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

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## ACADEMIC SERVICE

AAG Economic Geography Specialty Group At-large Board Member, 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

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## ADVANCED TECHNICAL SKILLS

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