

David C. Folch

Department of Geography, Planning and Recreation
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Education

- 2012 Ph.D. Geography. Arizona State University, Tempe, Arizona.
- 2005 M.A. Economics. George Washington University, Washington, DC.
- 1996 B.S. Economics. Arizona State University, Tempe, Arizona.

Academic Experience

- 2019– Assistant Professor. Department of Geography, Planning and Recreation, Northern Arizona University; Flagstaff, Arizona.
- 2019– Principal Faculty Member. Interdisciplinary Health PhD Program, Northern Arizona University; Flagstaff, Arizona.
- 2014–2019 Assistant Professor. Department of Geography, Florida State University; Tallahassee, Florida.
- 2018–2019 Research Associate. Center for Demography and Population Health, Florida State University; Tallahassee, Florida.
- 2012–2018 Research Associate. Institute of Behavioral Science, University of Colorado Boulder; Boulder, Colorado.
- 2008–2012 Graduate Research Assistant. GeoDa Center, School of Geographical Sciences and Urban Planning, Arizona State University; Tempe, Arizona.
- 2005–2008 Graduate Teaching Associate. Department of Geography, San Diego State University; San Diego, California.
- 2005 Research Assistant. School of Public Policy and Public Administration, George Washington University; Washington, DC.

Publications

BOOKS

- 2018 Alex Singleton, Seth E. Spielman, and David C. Folch. *Urban Analytics*. Sage, 2018.

PEER REVIEWED JOURNAL ARTICLES

- 2021 David C. Folch, Christopher S. Fowler, and Levon Mikaelian. Day time, night time, over time: geographic and temporal uncertainty when linking event and contextual data. *Environmental Health*, 20:1–15, 2021.
- 2021 Lisa M Gatzke-Kopp, Siri Warkentien, Michael Willoughby, Christopher S. Fowler, David C Folch, and Clancy Blair. Proximity to sources of airborne lead is associated with reductions in children’s executive function in the first four years of life. *Health and Place*, 68:1–9, 2021.
- 2020 James D. Gaboardi, David C. Folch, and Mark W. Horner. Connecting points to spatial networks: Effects on discrete optimization models. *Geographical Analysis*, 52(2):299–322, 2020.
- 2020 Christopher S. Fowler, Nathan Frey, David C. Folch, Nicholas N. Nagle, and Seth E. Spielman. Who are the people in my neighborhood?: The ‘contextual fallacy’ of measuring individual context with census geographies. *Geographical Analysis*, 52(2):155–168, 2020.

- 2020 Seth E. Spielman, Joseph Tuccillo, David C. Folch, Amy Schweikert, Rebecca Davies, Nathaniel Wood, and Eric Tate. The evaluation of social vulnerability indicators. *Natural Hazards*, 100(1):417–436, 2020.
- 2019 D.H. Weinberg, J.M. Abowd, R.F. Belli, N. Cressie, D.C. Folch, S.H. Holan, M.C. Levenstein, K.M. Olson, J.P. Reiter, M.D. Shapiro, J. Smyth, L. Soh, B.D. Spencer, S.E. Spielman, L. Vilhuber, and C.K. Wikle. Effects of a government-academic partnership: Has the NSF-Census Bureau Research Network helped secure the future of the federal statistical system? *Journal of Survey Statistics and Methodology*, 7(4):589–619, 2019.
- 2019 Clauber Scherer, Pedro Amaral, and David C. Folch. A comparative study of urban occupational structures: Brazil and United States. *Revista Brasileira de Estudos de População*, 36:1–19, 2019.
- 2018 David C. Folch, Seth E. Spielman, and Robert Manduca. Fast food data: Where user generated content works and where it does not. *Geographical Analysis*, 50:125–140, 2018. [Geographical Analysis Top 20 Most Downloaded Paper](#).
- 2018 Jason R. Jurjevich, Amy L. Griffin, Seth E. Spielman, David C. Folch, Meg Merrick, and Nicholas N. Nagle. Navigating statistical uncertainty: How urban and regional planners understand and work with American Community Survey (ACS) data for guiding policy. *Journal of the American Planning Association*, 84(2):110–124, 2018. [Finalist for JAPA Best Paper Award](#).
- 2016 David C. Folch, Daniel Arribas-Bel, Julia Koschinsky, and Seth E. Spielman. Spatial variation in the quality of American Community Survey estimates. *Demography*, 53(5):1535–1554, 2016.
- 2016 David C. Folch and Sergio J. Rey. The centralization index: A measure of local spatial segregation. *Papers in Regional Science*, 2016.
- 2015 Seth E. Spielman and David C. Folch. Reducing uncertainty in the American Community Survey through data-driven regionalization. *PLoS ONE*, 10(2), 2015.
- 2015 Arti Mann, David C. Folch, Robert J. Kauffmann, and Luc Anselin. Spatial and temporal trends in IT outsourcing. *Applied Geography*, 63:192–203, 2015.
- 2015 Juan Carlos Duque, Xinyue Ye, and David C. Folch. spMorph: An exploratory space-time analysis tool for describing processes of spatial redistribution. *Papers in Regional Science*, 94:629–651, 2015.
- 2014 David C. Folch and Seth E. Spielman. Identifying regions based on flexible user defined constraints. *International Journal of Geographic Information Science*, 28(1):164–184, 2014.
- 2014 Seth E. Spielman, David C. Folch, and Nicholas N. Nagle. Patterns and causes of uncertainty in the American Community Survey. *Applied Geography*, 46:147–157, 2014.
- 2011 Sergio J. Rey and David C. Folch. Impact of spatial effects on income segregation indices. *Computers, Environment and Urban Systems*, 35(6):431–441, 2011.
- 2011 Sergio J. Rey, Luc Anselin, David C. Folch, Daniel Arribas-Bel, Myrna L. Sastré Gutiérrez, and Lindsey Interlante. Measuring spatial dynamics in metropolitan areas. *Economic Development Quarterly*, 25(1):54–64, 2011.

BOOK CHAPTERS

- 2021 David C Folch. Uncertainty. In Sergio J. Rey and Rachel Franklin, editors, *Handbook of Spatial Analysis in the Social Sciences*. Edward Elgar, accepted.
- 2017 Jennifer Kitson, Stephen Buckman, and David C. Folch. Beyond rail: Amenity driven high density development (ADHD) for polycentric cities. In Nicholas Wise and Julie Clark, editors, *Urban Transformations*. Routledge, 2017.
- 2015 Seth E. Spielman and David C. Folch. Mapping attribute space with the Kohonen self organizing map algorithm. In Alex Singleton and Chris Brunsdon, editors, *Geocomputation: A Practical Primer*. Sage, 2015.

PEER REVIEWED CONFERENCE PROCEEDINGS

- 2014 Robert Manduca, Seth E. Spielman, and David C Folch. Phoenix is cool: Administrative and big data complement each other. *Big Data and Urban Informatics*, 2014.
- 2012 Seth E. Spielman, David C Folch, John Logan, and Nicholas N. Nagle. Thinking inside the box: mapping the microstructure of urban environments (and why it matters). *AutoCarto*, 2012.

OTHER PUBLICATIONS

- 2020 Beth M Phillips, Sharon Koon, and David C Folch. Are neighborhood factors associated with the quality of early childhood education in North Carolina? Technical report, Regional Educational Laboratory Southeast, 2020.

Editorial

- 2018– Associate Editor, *Papers in Regional Science*.

Awards

- 2017 Statistical Partnerships Among Academe, Industry and Government Award. The American Statistical Association.
- 2012 U.S. Census Return Rate Challenge (Data Visualization). Winner (with Charles R. Schmidt and Seth E. Spielman). Kaggle.
- 2009 Anthony J. Brazel Research Examination Award. Arizona State University.
- 2008 University Graduate Fellowship. Arizona State University.

Grants

- 2019-2021 Developing Improved Measures to Support US Health Equity Research. PI. Subaward of Southwest Health Equity Research Collaborative. National Institutes of Health. (\$40,000)
- 2016–2023 Early Life Stress and the Environmental Origins of Disease: A Population-based Prospective Longitudinal Study of Children in Rural Poverty. Co-Investigator (PI Clancy Blair with 25 other Co-Is). National Institutes of Health. (\$316,502)
- 2017–2019 Neighborhood Influences on the Quality of Child Care Centers in North Carolina. Co-Principal Investigator (PI Beth M. Phillips, Co-PI Sharon Koon). U.S. Department of Education, Institute of Education Sciences. (\$232,906)
- 2011–2018 Spatial Sciences Census Research Node (NSF-Census Research Network). Principal Investigator (2015–2018) (Co-PI Seth E. Spielman, Nicholas Nagle). National Science Foundation. (\$1.62 million)
- 2013–2017 Measuring Social Vulnerability – Reducing Uncertainty and Validating Indicators Grant. Senior Personnel (PI Seth E. Spielman). National Science Foundation. (\$168,823)
- 2015 Pseudo Margins of Error for Metrics Based on American Community Survey Data. Principal Investigator. Florida State University. (\$20,000)
- 2011–2012 Doctoral Dissertation Research: Residential Segregation Measures and Their Spatial Properties. Co-Principal Investigator (PI Sergio J. Rey). National Science Foundation. (\$12,000)

Presentations (*invited)

- 2021* David C. Folch. *Environmental Justice: Linking People and Places*. National Academy of Sciences, Geospatial Needs for Environmental Justice, Washington, DC, 2021.
- 2021 David C. Folch. *Approaches for Computing Margins of Error for User Defined Variables Based on the American Community Survey*. ACS Data Users Conference, Washington, DC, 2021.
- 2020* David C. Folch. *Scale and Demographics*. Spatial Analysis Research Center, Scale Workshop, Tempe, Arizona, 2020.
- 2020* David C. Folch. *Demographic Scale: US Data Perspective*. Department of Politics and International Affairs, Northern Arizona University, Flagstaff, Arizona, 2020.
- 2019* David C. Folch. *Measuring Multidimensional Poverty in the United States*. Center for Demography and Population Health, Florida State University, Tallahassee, Florida, 2019.
- 2019 David C. Folch. *Geographic Uncertainty: Movers, Stayers and Neighborhood Change*. North American Meetings of the Regional Science Association International, Pittsburgh, 2019.
- 2019 David C. Folch. *Characterizing Poverty within the United States: A Multidimensional Approach*. Association of Pacific Coast Geographers, Flagstaff, Arizona, 2019.
- 2019 David C. Folch. *Measuring Multidimensional Poverty in the United States*. American Association of Geographers Annual Meeting, Washington, DC, 2019.
- 2018 David C. Folch. *Poverty in the United States: A Multidimensional Perspective*. North American Meetings of the Regional Science Association International, San Antonio, Texas, 2018.
- 2018 David C. Folch. *Does One Size Fit All? Defining Neighborhood Size in a Nation of Diverse Metro Areas*. American Association of Geographers Annual Meeting, New Orleans, Louisiana, 2018.
- 2017 David C. Folch. *Who Are My Neighbors? Investigating Residential Spatial Patterns*. Atlanta Research Data Center Research Conference, Atlanta, Georgia, 2017.
- 2017 David C. Folch. *Quantity vs. Size: Defining Neighborhoods for Metro Area Comparisons*. North American Meetings of the Regional Science Association International, Vancouver, British Columbia, 2017.
- 2017 David C. Folch. *Neighbors: The MAF provides new insights into the spatial organization of the American population*. NSF Census Research Network Spring 2017 Meeting, Washington, D.C., 2017.
- 2017 David C. Folch. *Fast Food Data: Where User-Generated Content Works and Where It Doesn't*. Social Media and Research Symposium, Tallahassee, Florida, 2017.
- 2016 David C. Folch. *Remapping the American Community Survey*. Florida State University Center for Demography and Population Health, Tallahassee, Florida, 2016.
- 2016 David C. Folch. *Computing Pseudo Margins of Error Using American Community Survey Data*. Association of American Geographers Annual Meeting, San Francisco, California, 2016.
- 2016 David C. Folch. *Uncertain Uncertainty*. Florida State University Department of Geography, Tallahassee, Florida, 2016.
- 2015 David C. Folch. *Downloading and Plotting U.S. Census Bureau Data Using Python*. Exploring Digital Scholarship: Data, Text, and Tools, Tallahassee, Florida, 2015.
- 2015 David C. Folch. *Remapping the American Community Survey*. Geospatial Statistics, Tools, Data, Practices, Opportunities and Challenges in the Federal Agencies hosted by the Federal Committee on Statistical Methodology, Washington, D.C., 2015.
- 2015 David C. Folch and Seth E. Spielman. *Pseudo Margins of Error for Metrics Based on American Community Survey Data*. North American Meetings of the Regional Science Association International, Portland, Oregon, 2015.
- 2015 David C. Folch. *Outside Your Comfort Zone: A Spatial Analysis of Yelp Reviews*. Association of American Geographers Annual Meeting, Chicago, Illinois, 2015.

- 2014 Seth E. Spielman, David C. Folch, and Robert Manduca. *Fast Food Data: Where User Generated Content Works and Where it Doesn't*. North American Meetings of the Regional Science Association International, Washington, D.C., 2014.
- 2014 David C. Folch and Seth E. Spielman. *A Tool for Regionalizing U.S. Census Data*. Centers for Disease Control and Prevention, Atlanta, Georgia, 2014.
- 2014 David C. Folch. *Teaching spatial analysis using python*. Scientific Computing with Python, Austin, Texas, 2014.
- 2014 David C. Folch. *Rail Transit and its Relationship to Residential Segregation and Redistribution*. Association of American Geographers Annual Meeting, Tampa, Florida, 2014.
- 2014 David C. Folch and Seth E. Spielman. *A Geocomputational Approach to Improving the Quality of American Community Survey Estimates (and Why it Matters)*. U.S. Census Bureau, Suitland, Maryland, 2014.
- 2014 David C. Folch. *Uncertain Uncertainty: Leveraging Spatial Patterns in the Quality of American Community Survey Estimates*. Florida State University Department of Geography, Tallahassee, Florida, 2014.
- 2013 Seth E. Spielman and David C. Folch. *Reducing American Community Survey Margins of Error Through Data Driven Regionalization*. North American Meetings of the Regional Science Association International, Atlanta, Georgia, 2013.
- 2013 David C. Folch. *Spatial Variation in the Quality of American Community Survey Estimates*. University of Colorado Department of Geography, Boulder, Colorado, 2013.
- 2013 David C. Folch. *American Community Survey Sampling and Weighting Mechanics*. Association of American Geographers Annual Meeting, Los Angeles, California, 2013.
- 2013 David C. Folch and Seth E. Spielman. *Region Building and the American Community Survey*. Association of American Geographers Annual Meeting, Los Angeles, California, 2013.
- 2012 David C. Folch and Sergio J. Rey. *Visualizing Local Segregation Using the Centralization Index*. Association of American Geographers Annual Meeting, New York, New York, 2012.
- 2011 David C. Folch and Sergio J. Rey. *The Centralization Index as a Measure of Local Segregation*. North American Meetings of the Regional Science Association International, Miami, Florida, 2011.
- 2011 Sergio J. Rey, Luc Anselin, and David C. Folch. *PySAL: Python Spatial Analysis Library, 1.2*. Association of American Geographers Annual Meeting, Seattle, Washington, 2011.
- 2011 Luc Anselin, David C. Folch, and Daniel Arribas-Bel. *GeoDaSpace: A Tool for Modern Spatial Econometrics*. Association of American Geographers Annual Meeting, Seattle, Washington, 2011.
- 2010 Sergio J. Rey, Luc Anselin, and David C. Folch. *Spatial Econometrics with PySAL and GeoDaSpace*. North American Meetings of the Regional Science Association International, Denver, Colorado, 2010.
- 2010 Sergio J. Rey, Luc Anselin, David C. Folch, Daniel Arribas-Bel, and Myrna L. Sastré Gutiérrez. *Measuring Spatial Dynamics in Metropolitan Areas*. Association of American Geographers Annual Meeting, Washington, D.C., 2010.
- 2009 Sergio J. Rey and David C. Folch. *What Can 70 Million or So Neighborhoods Tell Us about the Performance of Income Segregation Measures?* World Conference of the Spatial Econometrics Association, Barcelona, Spain, 2009.
- 2009 Sergio J. Rey, Luc Anselin, and David C. Folch. *Exploration of Spatial Structure and Linkage Using Spatial Weights Matrices*. Association of American Geographers Annual Meeting, Las Vegas, Nevada, 2009.
- 2008 Sergio J. Rey and David C. Folch. *Segregation Dynamics: Inferential and Dynamic Issues in the Measurement of Segregation*. Spatial Econometrics Association World Conference II, Brooklyn, New York.

Service

- Referee *Annals of the American Association of Geographers; Annals of Epidemiology; Annals of GIS; Applied Geography; Cities; Cityscape; CRC Press book proposal review; Computers, Environment and Urban Systems; Demography; Environment and Planning A; Environment International; Geographical Analysis; Housing Studies; International Journal of Geographical Information Science; International Regional Science Review; Journal of Geographical Systems; Journal of Regional Science; Journal of Transport Geography; Journal of Urban Technology; National Science Foundation (Geography and Spatial Sciences); National Science Foundation (Methodology, Measurement, and Statistics); Natural Hazards; Papers in Regional Science; Population Research and Policy Review; Proceedings of the Python in Science Conference; Proceedings of the National Academy of Sciences; Professional Geographer; Public Health Reports; Tijdschrift voor economische en sociale geografie; Transportation; Transportation Research Board Conference Proceedings; Transactions in GIS; Urban Studies*
- Member Ad hoc Committee on Virtual Disruptions, Northern Arizona University; 2021.
- Member Coconino County Census Complete County Committee; 2019–2020.
- Member Executive Committee. Center for Demography and Population Health, Florida State University; 2018–2019.
- Member Review Board. Atlanta Research Data Center; 2018–2019.
- Member Committee. Data Certificate Planning Committee, Florida State University; 2018–2019.
- Member Focus Groups. Big Data Research Infrastructure and Capacity Initiative, Florida State University; 2018.
- Member Program Committee. SciPy: Scientific Computing with Python; 2014, 2015, 2016.
- Member Program Committee. North American Meetings of the Regional Science Association International; 2009.
- Member Planning Committee. Arizona Impact Fee Roundtable; 2001.
- Developer PySAL (Python Spatial Analysis Library). Open source software library in the Python programming language; 2009–2016.
- Developer GeoDaSpace. Free software for spatial econometric model estimation; 2010–2013.
- Organizer Session Organizer. Association of American Geographers Annual Meeting; 2013, 2015, 2016, 2018.
- Organizer Session Organizer. North American Meetings of the Regional Science Association International; 2014.

Professional Experience

- 2008–2009 Editorial Assistant. *International Regional Science Review*, Tempe, Arizona.
- 2004–2005 Market Analyst. Independent Contractor, Washington, DC.
- 2004 Graduate Intern. ThinkAZ (formerly: Arizona Center for Public Policy), Phoenix, Arizona.
- 1996–2003 Research Associate. ESI Corp, Phoenix, Arizona.

Teaching

UNIVERSITY COURSES

- GSP 331/531 Fundamentals of GIS I. Northern Arizona University. Fall 2019–2020.
- GSP 432/532 Community and Urban GIS. Northern Arizona University. Fall 2021.
- PRM 530 Introduction to GIS. Northern Arizona University. Spring 2020–2021.
- GSP 687 Professional Development Seminar. Northern Arizona University. Spring 2020.
- GIS 4043/5101 Geographic Information Systems. Florida State University. Spring 2016.
- GEO 4930/5934 Smart Cities. Florida State University. Fall 2016, Spring 2018, 2019.
- GIS 5103 GIS Programming. Florida State University. Fall 2014–2018.
- GIS 5106 Advanced Geographic Information Systems. Florida State University. Spring 2015–2019.
- GEO 5934 Spatial Data Structures and Algorithms. Florida State University. Spring 2015.

GEOG 5001 GIS and Spatial Analysis Graduate Seminar. University of Colorado Boulder. Fall 2013.
 GCU 102 Introduction to Human Geography. Arizona State University. Fall 2011, Spring 2012.
 GCU 361 Urban Geography. Arizona State University. Spring 2011.
 GCU 495 Quantitative Methods in Geography. Arizona State University. Summer 2010.

WORKSHOPS

2013 Teaching Assistant. "Spatial Data Analysis with PySAL and GeoDaSpace" North American Meetings of the Regional Science Association International. Atlanta, Georgia.
 2009 Instructor. "Spatial Regression Workshop" Crime Mapping Research Conference. New Orleans, Louisiana.
 2009 Instructor. "Tools for Spatial Analysis" Crime Mapping Research Conference. New Orleans, Louisiana.
 2008 Teaching Assistant. "Spatial Pattern Analysis Workshop" Center for Spatially Integrated Social Science (CSISS). Santa Barbara, California.
 2007 Teaching Assistant. "Spatial Perspectives on Analysis for Curriculum Enhancement (SPACE) Workshop" Center for Spatially Integrated Social Science (CSISS). Santa Barbara, California.
 1998 Resource Consultant. "Meeting the Challenges and Opportunities of Arizona's Growing Senior Population". 72nd Arizona Town Hall. Prescott, Arizona.

Advising

Adviser Gabriela Boaventura. Applied Geospatial Sciences, Masters. Northern Arizona University. Active.
 Adviser John Kelly. Applied Geospatial Sciences, Masters. Northern Arizona University. Active.
 Committee Whitney Holeva-Eklund. Interdisciplinary Health, PhD. Northern Arizona University. Active.
 Committee Feilin Lai. Geography, PhD. Florida State University. Active.
 Committee Stanley Njikhoo. Interdisciplinary Health, PhD. Northern Arizona University. Active.
 Committee Barbara Zalewski. Applied Geospatial Sciences, Masters. Northern Arizona University. Active.
 Committee Patrick Sweatt. Applied Geospatial Sciences, Masters. Northern Arizona University. Completed 2021.
 Adviser Arash Amiri. Geography, Masters. Florida State University. Completed 2017.
 Adviser James D. Gaboardi. Geography, PhD. Florida State University. Completed 2019.
 Committee Elaina Gonsoroski. Geography, Masters. Florida State University. Completed 2019.
 Committee Jihoon Jung. Geography, PhD. Florida State University. Completed 2019.
 Committee Tyler Lynn. Geography, Masters. Florida State University. Completed 2019.
 Committee Amanda Richards. Geography, Masters. Florida State University. Completed 2017.
 Committee Emily Ryan. Geography, Masters. Florida State University. Completed 2018.
 Committee Brittany Wood. Geography, PhD. Florida State University. Completed 2018.
 Committee Fang Zhang. Geography, PhD. Florida State University. Completed 2019.
 Supervisor Clauber Scherer. Visiting Student, Economics, PhD. Federal University of Minas Gerais (Brazil). Completed 2018.

Professional Associations

Western Regional Science Association
 Association of American Geographers

Personal Information

Place of Birth: London, England.

Citizenship: United States of America, United Kingdom.

Flagstaff, June 13, 2021.