

# William R Buckingham

## Curriculum Vitae

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Center for Health Disparities Research  
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### PROFESSIONAL EXPERIENCE

***Director of Geospatial Operations*** Jan 2022 - present  
p. *Associate Scientist (GIS and Health Geography)* May 2019– Dec 2021  
**School of Medicine and Public Health, Department of Medicine, Center for Health Disparities Research  
University of Wisconsin-Madison**

***Assistant Scientist (GIS and Health Geography)*** Feb 2014– April 2019  
p. Senior Cartographer March 2008 – Feb 2014  
p. Director (Interim) January 2006 - August 2006  
p. Cartographer March 2005 – March 2008

**College of Agriculture and Life Sciences, Department of Community and Environmental Sociology, Applied  
Population Laboratory, University of Wisconsin-Madison**

***Cartographer - GIS Specialist*** June 2002 – March 2005  
**United States Geological Survey, Cartography and Publishing Program, Madison, WI.**

### EDUCATION

Ph.D. *Environment and Resources* May 2012  
University of Wisconsin-Madison  
Thesis: *GeoInquiry: New Spatial Media for Qualitative  
Spatial Research in Health and Place*

M.S. *Cartography and Geographic Information Systems* December 2004  
University of Wisconsin-Madison  
Thesis: *Do Children Need Saturated Colors on Maps?*

B.S. *Geology and Geophysics* May 1998  
University of Wisconsin-Madison

## PUBLICATIONS

### Refereed Journal Articles

- In Prep      **Buckingham WR**, Powell WR, Keller S, Hansmann KJ, Kind AJ. Bigger isn't better: Why small area geographies are best for actionable index development.
- 2021      **Buckingham WR**, Bishop L, Hooper-Lane C, Anderson B, Wolfson, J, Shelton S, Kind AJH. A Systematic Review of Geographic Indices of Disadvantage with Implications for Older Adults. *JCI Insight*. 2021 Oct 22;6(20):e141664. doi: 10.1172/jci.insight.141664. PMID: 34546974; PMCID: PMC8564893.
- 2021      Patterson, JA, Keuler, NS, **Buckingham, WR**. Differences in Exclusive Breastfeeding Rates in US Hospitals According to Baby-Friendly Hospital Initiative Designation and Area Deprivation Index Category. *Breastfeeding Medicine* 16(10), 799-806.
- 2021      Powell, W.R., Zuelsdorff, M, Chin, NA, **Buckingham WR**, Rissman, R, Bendlin, BB, Kind, AJ. Geographic proximity, neuropathology and ADRC brain donation, *Alzheimer's and Dementia* 17
- 2021      Hunt JFV, Vogt NM, Jonaitis EM, **Buckingham WR**, Kosciak RL, Zuelsdorff M, Clark LR, Gleason CE, Yu M, Okonkwo O, Johnson SC, Asthana S, Bendlin BB, Kind AJ. Association of Neighborhood Context, Cognitive Decline, and Cortical Change in an Unimpaired Cohort. *Neurology*. 2021 May 18;96(20):e2500-e2512. doi: 10.1212/WNL.0000000000011918. Epub 2021 Apr 14. PMID: 33853894; PMCID: PMC8205478.
- 2020      Sheehy AM, Powell WR, Kaiksow FA, **Buckingham WR**, Bartels CM, BirstlerJ, Yu M, Bykovskiy AG, Shi F, Kind AJH. Thirty-day Re-observation, Chronic Re-observation, and Neighborhood Disadvantage. *Mayo Clinic Proceedings*. PMCID: PubMed Journal In Process.
- 2020      Powell WR, **Buckingham WR**, Larson JL\*, Vilen L\*, Yu M, Salamat MS, Bendlin BB, Rissman RA, Kind AJH. Association of Neighborhood-Level Disadvantage with Alzheimer Disease Neuropathology. *JAMA Netw Open*. 2020;3(6):e207559. doi:10.1001/jamanetworkopen.2020.7559. PMID: 32525547; PMCID: PMC7290421.
- 2020      Zuelsdorff M, Larson JL, Hunt J, Kim AJ, Kosciak RL, **Buckingham WR**, Gleason CE, Johnson SC, Asthana S, Rissman R, Bendlin BB, Kind AJH. The Area Deprivation Index: A novel tool for harmonizable risk assessment in Alzheimer's research. *Alzheimer's & Dementia: Translational Research and Clinical Interventions*. 2020 Jun 14;6(1):e12039.
- 2020      Hunt JFV, **Buckingham W**, Kim AJ, Oh J, Vogt NM, Jonaitis EM, Hunt TK, Zuelsdorff M, Powell R, Norton D, Rissman RA, Asthana S, Okonkwo OC, Johnson SC, Kind AJH, Bendlin BB. Association of Neighborhood-Level Disadvantage with Cerebral and Hippocampal Volume.. *JAMA- Neurology*, 2020. 77(4): 451-460. PMCID: PMC6990953
- 2019      Durfey, SN, AJH Kind, **W.R. Buckingham**, EH DuGoff, AN Trivedi. Neighborhood Disadvantage and Chronic Disease Management. *Health Services Research*, 2019. 54 Suppl (1):206-216. PMCID: PMC6341202
- 2018      Kind, AJH, **W.R. Buckingham**. Making Neighborhood Disadvantage Metrics Accessible:

- The Neighborhood Atlas. *New England Journal of Medicine*, 378(26): 2456-2458.
- 2018 Jung, D, AJH Kind, S. Robert, **W.R. Buckingham**, E. DuGoff. Linking Neighborhood Context and Health in Community-Dwelling Older Adults in the Medicare Advantage Program. *Journal of the American Geriatrics Society*
- 2018 Durfey, SN, AJH Kind, R Gutman, K Monteiro, **W.R. Buckingham**, EH DuGoff, AN Trivedi. Impact of Risk Adjustment for Socioeconomic Status on Medicare Advantage Plan Quality Rankings. *Health Affairs*, Vol 37(7): 1065-1072.
- 2015 Chang, T.S., R.E. Gangnon, **W.R. Buckingham**, A. Tandias, L.P. Hanrahan, T.W. Guilbert, "Sparse Modeling of Spatial Community-Level Factors Associated with Asthma. *International Journal of Health Geographics*, Vol 52: 320-329.
- 2014 Tomayko, E. T. Flood, A. Tandias, B. Arndt, **W.R. Buckingham**, L.P. Hanrahan. "Electronic Health Records Identify Community-Specific Risk Factors for Childhood Obesity", *The FASEB Journal*, Vol 28(1):supplement 130.2
- 2013 **Buckingham, W.R.** "Capturing Qualitative Spatial Data to Understand Social Epidemiology in Public Health", *Journal of Community Informatics*, Vol 9(2).
- 2013 Reyes, N, D.J. Baumgardner, D.H. Simmons, **W.R. Buckingham**, "The Potential for Sociocultural Factors in the Diagnosis of ADHD in Children", *Wisconsin Medical Journal*, Vol 112(1): 13-17
- 2013 **Buckingham, W.R.**, LP Hanrahan, TW Guilbert. "Estimating Asthma Prevalence Across Wisconsin Using Small Area Estimation", *American Journal of Respiratory and Critical Care Medicine*, Vol 187: A1336
- 2012 Tomasallo, C., **W.R. Buckingham**, L.P. Hanrahan, T.W. Guilbert. "Estimating Wisconsin Asthma Prevalence Using Clinical Electronic Health Records and Public Health Data", *American Journal of Respiratory and Critical Care Medicine*, Vol 185: A2307
- 2012 Schlenker, T, L.T. Dresang, M Ndiaye, **W.R. Buckingham**, J.W. Leavitt, "The Effect of Prenatal Support on Birth Outcomes in an Urban Midwestern County", *Wisconsin Medical Journal*, Vol 111(6): 267-273
- 2012 Guilbert, T.W., B. Arndt, J. Temte, V. Gilchrist, A. Adams, **W.R. Buckingham**, A. Tandias, C. Tomasallo, H.A. Anderson, L.P. Hanrahan, "The Theory and Application of UW eHealthPHINEX, A Clinical Electronic Health Record-Public Health Data Exchange", *Wisconsin Medical Journal*, Vol 111(3):124-133
- 2012 **Buckingham, W.R.** "The Potential and Pitfalls of Geocoding Electronic Health Records", *Wisconsin Medical Journal*, Vol 111(3): 107-111
- 2012 Bergman, E.J., F.J. Nieto, A.J. Bersch, **W.R. Buckingham**, K. Malecki, "Using Tax Parcel Data to Compare Geocoding Accuracy of Urban and Non-Urban Addresses in Wisconsin", *American Journal of Epidemiology*, Vol 175: S116
- 2009 **Buckingham, W.R.** and S.F. Dennis Jr, "Cartographies of Participation: How the Changing Natures of Cartography Has Opened Community and Cartographer Collaboration", *Cartographic Perspectives*, No. 64

- 2007 **Buckingham, W.R.** and M. Harrower, "The Role of Color Saturation in Maps for Children", *Cartographic Perspectives*, No. 58(4): 41-58

### Edited Volumes

- 2010 **Buckingham, W.R.** Choropleth Maps. In *Encyclopedia of Geography*. Sage. Barney Warf, editor.

### TECHNICAL SKILLS

Expertise: ArcGIS, Excel, Geoda, R Spatial, R, QGIS

Moderate: Scrivener, Oracle and PostgreSQL

Proficiency: Python, Javascript, Mapbox Studio

### INVITED LECTURES

- 2018 "The Area Disadvantage Index: Using geographic information science to construct and share metrics of neighborhood disadvantage in the clinical setting". University of Wisconsin-Milwaukee GIS Day, Department of Geography, University of Wisconsin-Milwaukee
- 2013 "Moving from Participation to Analysis: Constructing GeoInquiry". Yi-Fu Tuan Lecture Series, Department of Geography, University of Wisconsin-Madison.
- 2012 "A Picture is Worth a Thousand Words: Using GIS to Motivate and Support Your Research" American Pharmacists Association Annual Meeting in New Orleans March 9.

### PRESENTATIONS AND POSTERS

- 2018 "Visualizing Socioeconomic Disadvantage to Inform Programs and Policy: The Neighborhood Atlas." AJH Kind, **WR Buckingham**. Poster Presentation at the American Geriatrics Society Annual Meeting, May 2018, Orlando, FL.
- 2017 "Neighborhood Socioeconomic Contextual Disadvantage, Baseline Cognition and Alzheimer's Disease Biomarkers in the Wisconsin Registry for Alzheimer's Prevention (WRAP) Study." AJH Kind, BB Bendlin, AJ Kim, RL Kocsik, **WR Buckingham**, CE Gleason, K Blennow, H Zetterberg, CM Carlsson, SC Johnson. Oral Presentation at the Annual Alzheimer's Association International Conference, July 2017, London, UK.
- 2017 "Neighborhood Factors Related to Functional Limitations Among older Adults in Medicare Advantage". DH Jung, EH DuGoff, S Robert, **WR Buckingham**, AJH Kind. Poster Presentation at the 21<sup>st</sup> IAGG World Congress on Gerontology and Geriatrics, July 2017, San Francisco, CA
- 2012 "GeoInquiry: A Novel Method for Spatial Research in Health and Place" **W.R. Buckingham**. Poster Presented at the 2012 GIScience Conference, Columbus OH.

- 2011 "Space, place and health: Capturing Volunteered Geography to better provide Public Health Resources and Understanding" **W.R. Buckingham**. *2011 Annual Meeting of the Association of American Geographers*-Seattle, WA.
- 2010 "VGI and Health" **W.R. Buckingham**. *esri GIS and Health Conference 2010*, Denver CO.  
2010 "Qualitative Geographic Information and Public Health: Using volunteered geographic information to plot safe routes to school" **W.R. Buckingham**. *2010 Annual Meeting of the Association of American Geographers*-Washington D.C.
- 2009 "GIS, Visualization and Health." **W.R. Buckingham**. *UW-Madison GIS Day Expo 2009*
- 2008 "Using Participatory Photo-Mapping (PPM) to Inform Public Health Information Networks with Young People in Health Promotion Research." **W.R. Buckingham**, S. Dennis Jr., S. Gaulocher. *Wisconsin Land Information Association Conference 2008*
- 2007 "Spatial Examination of the 'New West' in Inter-Mountain West Communities." R. Winkler, **W.R. Buckingham**, D. Field, A. Luloff, R. Krannich. *Population Association of America 2007 Conference*
- 2006 "Prioritizing Places: Geo-demographic Analysis Guides Acquisition and Development of Outdoor Recreation Land." R. Winkler, **W.R. Buckingham**, D. D. Long, J. Prey, J. Pohlman. *Population Association of America 2006 Conference*
- 2006 "Does Distance Matter? Amenities, Migration, and Distance from Metropolitan Areas." R. Winkler, R. Schewe, **W. R. Buckingham**, *Southern Demographers Association Conference 2006*
- 2006 "Wisconsin's 'GetFacts'" **W.R. Buckingham**, J. Beaudoin *ESRI Wisconsin Users Group Conference 2006*
- 2006 "Wisconsin GetFacts for Comprehensive Planning." **W.R. Buckingham**, J. Beaudoin, S. Kemp, *Wisconsin Land Information Association Conference 2006*
- 2005 "Does Saturation Matter in Maps for Children?" **W.R. Buckingham**, *North American Cartographic Information Society Conference 2005*.
- 2005 "Wisconsin's Outdoor Recreation Plan: Geo-demographic Analysis for Acquisition and Development." R. Winkler, **W.R. Buckingham**, D. D. Long, J. Prey, J. Pohlman. *Southern Demographers Association Conference 2005*
- 2005 "Prioritizing Places: How Wisconsin's Outdoor Recreation Plan is using Geo-demographic Analysis to Guide Acquisition and Development." R. Winkler, **W.R. Buckingham**, D. D. Long, J. Prey, J. Pohlman. *ESRI Wisconsin Users Group Conference 2005*
- 2003 "Creating Aesthetically Pleasing Maps Using ArcMap." **W.R. Buckingham**, *ESRI Wisconsin Users Group Conference 2003*

## PROFESSIONAL SERVICE

- 2015- Manuscript Reviewer for Geographical Review
- 2015- Manuscript Reviewer for Humanities
- 2015- Manuscript Reviewer for Family and Community Health
- 2014- Manuscript Reviewer for Wisconsin Medical Journal

- 2014- Manuscript Reviewer for Health Education and Behavior
- 2014- Manuscript Reviewer for Family and Community Health
- 2012 - Manuscript Reviewer for Journal of Community Informatics
- 2009 Natural Earth Data GIS Population Analyst, [naturalearthdata.com](http://naturalearthdata.com)
- 2008-09 Mapping: Methods and Tips, Section Editor for *Cartographic Perspectives*, The Journal of the North American Cartographic Information Society
- 2006 Manuscript Reviewer for *Population Research and Policy Review (Special Issue on Spatial Demography)*

## **AWARDS AND HONORS**

- 2009 Madison-Dane County Public Health Partnership Award (with Daniel Veroff and David Long)
- 2007 First Place Black and White Map, Wisconsin Land Information Association, University of Wisconsin-Madison
- 2003 Outstanding Teaching Assistant, Department of Geography, University of Wisconsin-Madison
- 2002 Barbara Bartz Petchenik Memorial Graduate Award in Cartographic Design, Department of Geography, University of Wisconsin-Madison

## **GRANTS**

- 2010 Robert Wood Johnson Foundation, Health and Society Scholars Dissertation Grant \$5000
- 2004 American Association of Geographers-Cartography Specialty Group: AAG Cartography Specialty Group MS Grant \$500

## **PROFESSIONAL AFFILIATIONS**

- Association of American Geographers
  - Cartography Specialty Group
  - Health and Medical Geography Specialty Group
  - GIS Specialty Group
- Cartography and Geographic Information Systems (CAGIS)
- North American Cartographic Information Society