

# D.W. Rowlands

*Urban Geographer and Spatial (GIS) Data Analyst*

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<https://dwrowlands.com>

## PROFESSIONAL EXPERIENCE

### **United States Department of Transportation (USDOT)** **2023 – 2025**

*Program Analyst in the Office of the Assistant Secretary for Transportation Policy*

- Primary spatial (GIS) and data analysis contributor in support of USDOT equity portfolio.
  - Developed analyses and web maps to brief the Undersecretary for Transportation Policy on equity data in preparation for Congressional hearings.
  - Calculated USDOT Strategic and Equity Action Plan key performance indicators (KPIs).
- Technical lead on development of updated USDOT Equity Transportation Communities (ETC) Explorer index and tool for identifying disadvantaged communities.
  - Designed and implemented an improved methodology to integrate data from dozens of sources into metrics for identifying and quantifying Census tract transportation insecurity, environmental burden, and social vulnerability related to transportation.
  - Built an intuitive, user-friendly tool in ESRI ArcGIS Online to display public-facing data.
- On detail to the Bureau of Transportation Statistics (BTS), developed an updated methodology for the BTS Intermodal Passenger Connectivity Database.

### **Brookings Institution Metropolitan Policy Program** **2020 – 2023**

*Senior Research Assistant*

<https://www.brookings.edu/author/dw-rowlands/>

- Performed spatial (GIS) analysis focused on place-level assets and their relationships to broader regional economic and built ecosystems and the people who call them home.
  - Authored ten briefs and reports (seven as lead author) based on these analyses.
  - Delivered invited talk on US demographics to gathering of ~10 EU diplomats.
- Led GIS analysis for IDing clusters of economic and community assets and showing that these clusters increase metro area productivity, sustainability, and inclusivity.
  - Sole-authored follow-up brief on the implications for public transportation.
  - Lead authored American Planning Association planning note on method (May 2023).

### **DC Policy Center** **2017 – 2020**

*Fellow*

<https://www.dcpolicycenter.org/people/dw-rowlands/>

- Authored twenty briefs on regional demographics and public transit.
- Delivered invited talk to the Washington Metropolitan Area Transit Authority Board on proposals for improvements to suburb-to-suburb transit connectivity (Feb. 2020).

### **University of Maryland, Baltimore County** **2016 – 2019**

*Visiting Lecturer in Chemistry*

- Taught chemistry lab and lecture courses and supervised graduate teaching assistants.
- Served as a research advisor for undergraduate summer research.

## TECHNICAL SKILLS

- Advanced spatial data analysis and data presentation/mapping using QGIS and ArcGIS.
- Advanced GIS and statistical data analysis in R using sf, dplyr, and related libraries.
- Advanced programming/scripting to analyze big data in R.
- Intermediate web map/app development for public-facing and internal products in ESRI ArcGIS Online Dashboard and Experience Builder.
- Technical and general-audiences writing on urban geography and transportation.

## EDUCATION

### **M.S. in Human Geography (2021)      University of Maryland, Baltimore County**

- Thesis on quantitative GIS characterization of urban built environment, integrating data sources and typologizing metropolitan areas by presence of walkable urbanism.
- Developed method using landcover raster to improve spatial resolution of Census data.
- Developed a watershed-adjusted density measure of urban density, which was published on *City Observatory* in 2000: <https://cityobservatory.org/mapping-walkable-density/>.
- Served on a committee that established all-gender restrooms on campus.

### **M.S. in Physical Chemistry (2015)      Massachusetts Institute of Technology**

- Thesis on oxygen and fluorine reactions with silicon surfaces in vacuum.
- Served as president of the 60,000-volume Science Fiction Society library, where I planned and implemented a major reorganization to increase shelf space.
- Served as treasurer of the Association of Student Activities and was responsible for allocating \$175,000 of funding to student-run events annually.

### **B.S. with Honor in Chemistry (2009)      California Institute of Technology**

- Thesis on NMR spin transfer from  $^{129}\text{Xe}$  to small molecules as biomarkers.

## LEADERSHIP AND SERVICE

### **Greater Greater Washington      2016 – Present**

*Contributor*      <https://gqwash.org/contributors/drowlands/>

- Authored over forty articles: history, analysis, and advocacy.
- Delivered invited talk at NAACP- and Common Cause-organized event opposing gerrymandering of the Prince George's County, MD County Council (Nov. 2021).

### **City of College Park, MD Redistricting Commission      2022**

*Vice-Chair*

- Performed all GIS analysis and cartography for the commission.
- Developed redistricting proposals based on commission-members' input.
- Presented proposals at public hearings and to the city council.