

# Matt Capaldi

*Education data analyst and doctoral student researching at the intersection of transportation and access to college. Data visualization & R enthusiast.*

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## Education

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### ***Ph.D. Higher Education Administration***

*Minor: Urban and Regional Planning*

*University of Florida, FL (2021 - Present)*

### ***M.Ed. Research and Evaluation Methodology***

*University of Florida, FL (2022 - Present)*

### ***M.Ed. Student Personnel in Higher Education***

*University of Florida, FL (2018 - 2020)*

### ***B.A. International Relations with Political Science***

*Year Abroad: Providence College, RI*

*University of Birmingham, UK (2014 - 2018)*

## Work Experience

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### ***Graduate Research Assistant***

*University of Florida, FL (August 2021 - Present)*

### ***Teaching Responsibilities***

**EDH 7916 Contemporary Research in Higher Education**

*A.K.A. "the R class", an introductory graduate level class on data management, organization, and workflow using R and GitHub.*

### R-Instructor (Spring 2024)

- Following Dr. Skinner's departure, I was asked to take over instruction for the technical R coding portion of the course, which involved the majority of instruction and grading.
- Designed a refreshed [course website](#) adding new lessons for using Quarto and translating R code to SQL.

### Teaching Assistant (Spring 2023)

- Assisted instructor Dr. Ben Skinner by helping students with trouble-shooting and coding skills both in and out of class time.
- Designed and taught a lesson on working with spatial data and map creation in R. [See the lesson here](#).

## ***Research Responsibilities***

Work with Dr. Frank Fernandez on research relating to college access, primarily taking responsibility for data-related tasks (gathering, cleaning, analysis, and visualization).

### *College Climate Vulnerability (Summer 2023 - Fall 2023)*

- Spatially merged meteorological and government emergency response data with college institutional data to explore potential impacts of extreme weather on higher education institutions.
- Built a Shiny app to gather image feedback where the most relevant images to the current selection would be automatically displayed below.

### *Linking Community Colleges and High Schools in Texas (Fall 2022 - Spring 2023)*

- Created spatial boundaries for TX community college service areas from legislation and Census shapefiles to spatially match community colleges to feeder high schools.

### *Exploring Equitable Higher Education Funding Models in Illinois (Summer 2022)*

- Collected data on Illinois appropriations for higher education, labor market projections, census data, and institutional behavior, then drafted data visualizations using R (tables, graphs, and maps) for a report targeted at state policy makers.

### *Merit-Based Financial Aid (Fall 2021 - Spring 2022)*

- Created a new dataset of all state-run merit-based aid programs in the United States including details on dates active, award amount, merit criteria, and funding rules, leading to a new typology being proposed (see Hu et al., in press).

## ***Residence Hall Coordinator***

*University of Missouri, MO (July 2020 - May 2021)*

## ***Graduate Community Coordinator***

*University of Florida, FL (July 2019 - May 2020)*

## ***Summer Sessions Graduate Intern***

*Georgetown University, DC (May 2019 - July 2019)*

## ***Graduate Assistant for Industry Relations***

*University of Florida, FL (August 2018 - May 2019)*

## ***Advising Intern***

*US-UK Fulbright Commission, UK (January 2018 - June 2018)*

## ***Student Ambassador***

*University of Birmingham, UK (January 2015 - June 2018)*

## **Technical Skills**

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### **R**

- Data wrangling (tidyverse & vanilla), inferential statistics, data visualization (ggplot), interactive graphics (ggirpah & plotly), file management, string manipulation & basic regex (stringr), machine learning (tidymodels), mapping & spatial statistics (sf & sfdep)

### **Shiny**

- Developing interactive apps including data visualization dashboards and data collection tools. Primarily use R Shiny, exploring shinyExpress with Python

### **Python**

- Data wrangling (numpy & pandas), integration of Python & R (Reticulate), exploring machine learning (Scikit) and natural language processing (NLTK)

### **GitHub**

- Version control of code, collaboration through shared repositories, publishing websites with GitHub Pages, forking & pull-requesting repositories

### **Geographic Information Systems**

- Primarily use R for most GIS tasks but also familiar with QGIS and ArcGIS

### **Quarto**

- Website creation (e.g., [capaldi.info](http://capaldi.info)), formatted docx & pdf output (e.g., this CV), lua extensions (e.g., [Quarto-Docx-Horizontal-Rule](#))

### **Other Software Including**

- Microsoft Office, VS Code, Google Workspace, Google Colab, Qualtrics, SPSS, Stata, Zotero

## **Statistical Skills**

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### **Regression-Based Analysis**

- Linear regression, logistic regression, geographically weighted regression, cox regression

### **Spatial Statistics**

- Distances & central features, clustering analysis, spatial autocorrelation, hot-spot analysis, spatial outlier analysis, interpolation

### **Quasi-Experimental Design**

- Propensity score matching & weighting, machine learning based propensity score calculation

### **Psychometric Models**

- Classical test theory, factor analysis, item response theory, basic computational psychometrics

## **Publications**

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### ***Peer-Reviewed Articles***

Capaldi, M. J. (2023). The route to graduation: An exploration of the association between transit stop proximity and pell recipient completion rates at US commuter colleges. *Journal of College Student Retention: Research, Theory & Practice*. <https://doi.org/10.1177/15210251231156421>

Hu, X., Fernandez, F., Qiu, Y., & Capaldi, M. J. (n.d.). IN PRESS. The good, the bad, and the balanced: A typology of state merit aid programs for community college students. *Community College Review*.

### ***Reports***

Fernandez, F., Hu, X., & Capaldi, M. (2023). *Exploring equitable public higher education funding models in Illinois*. Partnership for College Completion. <https://partnershipfcc.org/publications/adequacy/>

### ***Commentary Articles***

Capaldi, M. J. (2021, December 1). Ensuring equitable public safety responses in college towns. *American City and County*. <https://www.americancityandcounty.com/2021/12/01/ensuring-equitable-public-safety-responses-in-college-towns/>

Fernandez, F., & Capaldi, M. J. (2021, October 25). Studying political science motivates college students to register and vote – new research shows. *The Conversation*. <http://theconversation.com/studying-political-science-motivates-college-students-to-register-and-vote-new-research-shows-168440>

### ***Presentations***

Hu, X., Fernandez, F., Qiu, Y., & Capaldi, M. J. (2023, April 13). *A typology of state merit aid programs for community college students*. AERA: American Educational Research Association.