Matt Capaldi

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

# Education

### Ph.D. Higher Education Administration

###### Minor: Urban and Regional Planning

###### Research Method Track: Quantitative Methods

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

### M.Ed. Research 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)*

# Technical Skills

###### R

* Data wrangling, data visualization using ggplot, interactive graphics using ggirpah & plotly, machine learning, mapping & spatial statistics

###### Shiny

* Developing interactive applications including visualization dashboards and data collection tools. Primarily using R Shiny, also exploring shinyExpress with Python

###### Python

* Data wrangling, machine learning, natural language processing, Integration with R through Reticulate

###### GitHub

* Version control of code, collaboration through shared repositories, publishing websites with GitHub Pages

###### Geographic Information Systems

* Utilize R/Python for most GIS tasks, but also familiar with both QGIS and ArcGIS

###### Other Software Including

* Quarto, Microsoft Office, Qualtrics, SPSS, Stata, Zotero

# Statistical Skills

###### Regression-Based Analysis

* Linear regression, Logistic regression, Geographically weighted regression

###### Spatial Statistics

* Distances & central features (Euclidean & Manhatten), Clustering analysis, Spatial autocorrelation, Hot-spot analysis (Getis-Ord local G\*), Spatial outlier analysis (Local Moran’s I), Interpolation (Ordinary Kriging)

###### Quasi-Experimental Design

* Propensity score analysis (including machine learning methods)

###### Survival Analysis

* Cox proportional hazards model

###### Psychometric Models

* Classical Test Theory, Factor Analysis, Item Response Theory, learning Computation Psychometrics

# Work Experience

### Graduate Research Assistant

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

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

##### Major Research Projects

**Exploring Community College Funding and High School Characteristics in Texas *(Fall 2022 - Present)***

* Created spatial boundaries for TX community college service areas from legislation and tigris shapefiles
* Spatially matched high schools to service areas to explore potential patterns between high school data and college funding

**Merit-Based Financial Aid *(Fall 2021 - Present)***

* 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.
* Assisted with preparing the data for statistical analysis for the paper establishing a typology of merit-aid programs for community college usage, see Hu et al. (In Press).
* Currently exploring if the above typology can be linked to differing outcomes for disadvantaged students.

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

* Collected data on Illinois and the surrounding states’ appropriations for higher education, labor market projections, census data, and institutional behavior.
* Provided data visualization using R (tables, graphs, and maps) for a report targeted at state policy makers to highlight inequities in funding.

### Residence Hall Coordinator

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

* Provided Residential Life leadership for a downtown undergraduate apartment building home to over 400 third- and fourth-year students in the first year of a full public-private partnership. Duties included directly supervising a team of 16 Resident Assistants and providing on-call crisis response to an area of 3250 students.

### Graduate Community Coordinator

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

* Provided Residential Life leadership for an on-campus traditional residence hall home to over 200 first-year students, including 50 international scholarship recipients. Duties included directly supervising a team of 5 Resident Assistants and providing on-call crisis response to an area of 3650 students.

### 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)*

### Careers Network Student Peer Presenter

*University of Birmingham, UK (September 2017 - June 2018)*

### International Employer Liaison Assistant

*University of Birmingham, UK (June 2017 - August 2017)*

# Teaching Experience & Qualifications

### Teaching Assistant

###### EDH 7916 Contemporary Research in Higher Education (aka “the R class”)

*Spring 2023*

* Introductory class on data management, organization, and workflow using R and GitHub.
* Assisted 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](https://edquant.github.io/edh7916/lessons/mapping_api.html).

### Teaching Training & Qualifications

###### EDH 6305 College and University Teaching

*Summer 2023*

* Designing a mock syllabus for a 4-week course on data visualization basics.

# Publications

### 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.). The good, the bad, and the balanced: A typology of state merit aid programs for community college students. *Community College Review*.

### 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/>

### 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.