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

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

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

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), 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

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

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.