Michael D. Parrott, PhD

Quantitative Methods in the Social Sciences
Institute for Social and Economic Research and Policy (ISERP)
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Academic Appointments

Lecturer-in-Discipline, Columbia University, Joint appointment with Department of Political Science and Quantitative Methods in Social Sciences Data Analytics Program, 2017-Present

I teach advanced statistics including courses on machine learning, data mining, GIS and spatial analysis, modern data structures, and data visualization.

Founding Director, AI Model Share Project, Columbia University, spring 2019-Present

Through this project Columbia can become the world's first academic portal for storing, finding, and using prediction APIs. Our goals are twofold, to empower data scientists to launch models into production ready prediction APIs with a single function and to create a trusted academic repository for deployed machine learning models.

Education

Ph.D., Political Science, University of Maryland, College Park, Spring 2016

Interest Representation as a Clash of Unequal Allies

Committee: Frances E. Lee (Chair)

Fields: American Politics and Quantitative Methods

M.A., Political Science, Fordham University

B.A., Political Science, Philosophy, and Psychology with honors, University of Texas

Research Interests

Research design and methodology with a focus on innovative tools of data manipulation and big data analysis. Advanced spatial, network and textual analysis.

American politics, focusing on how the design of political institutions shapes who wins and who loses in the policymaking process. Interest groups and lobbying Legislative behavior (with emphasis on constituency representation). Party Coalitions. Money and politics, particularly at the state and local level.

Selected Data Science Expertise, Training and Software

Advanced statistical modeling including: Deep neural networks along with a variety of other common and uncommon machine learning models, time-series models, social network models (exponential random graph and latent space network models), spatial models (spatial lag and error models and geographically weighted regression), and multi-level modelling.

R and Python (advanced programming including development of complex functions, parallel processing, textual analysis using term document matrices, network analysis and visualization utilizing sociomatrices, GIS mapping and statistics with geographically weighted matrices, web-scraping in general as well as data wrangling using APIs, JSON, and extracting precise data from sites after webscraping using regex). Also experienced with all major machine learning packages in R.

LINUX/HPCC (for memory intense tasks requiring high performance computing clusters), Amazon cloud computing with EC2 and Hadoop. AWS for big data and database management. Athena, Redshift, and RDS creation and management. Big data processing with Hive and Spark. SQL and NoSQL.

Serverless computing with AWS Lambda functions. Particularly for machine learning model deployment in web-applications.

Amazon M-Turk (utilized for multiple projects for crowd-sourced data gathering, survey experiments, and testing time to tasks for research on state disclosure website disclosure)

Microsoft Access, Excel (advanced user with in depth experience using Pivot tables, Macros, and V-lookups), Microsoft SharePoint creation and administration, PowerPoint, various video editing software, Microsoft Word (including mail merge experience), Html, Drupal; created and managed several websites.

Selected Employment

APSA Congressional Fellow, 2016-2017
Fellow in highly selective program that brings skilled professionals to Capitol Hill to gain hands-on knowledge of Congress by contributing to congressional staff.

Researcher/ Policy Analyst, Campaign Finance Institute, 2014-2016
Developed rich policy research experience and expertise; wrote press releases, reports, and academic articles; tracked complex state and municipal legislation and current legal code; fielded questions from journalists and external organizations; wrote succinct policy memos for executive director; made speeches and prepped executive director for presentations.

Policy focused, but academically rigorous research led policy practitioners to change approach to design and implementation of public funding programs in multiple states and localities.

Proposed projects assisted with unprecedented success in external funding. Grants received from The MacArthur Foundation, The Smith Richardson Foundation, The Democracy Fund, and Civitas (among others).

Task Specific Software Developer, Avnet, 2007-2010 (nonconsecutive years)
Worked for tools and reporting team at fortune 500 tech company. Built multiple applications to organize, centralize, and automate data driven tasks.

Publications

Michael D. Parrott. 2019. "What Role Do Interest Groups Play in House Committees? A View from Behind the Curtain." *PS: Political Science & Politics*, 52(2), 404-409.

Malbin, Michael J., and Michael Parrott. 2017. "Small Donor Empowerment Depends on the Details: Comparing Matching Fund Programs in New York and Los Angeles." *The Forum*. 15(2): 219-250.

Gimpel, James G., Frances E. Lee, and Michael D. Parrott. 2014. "Business Interests and the Party Coalitions - Industry Sector Contributions to US Congressional Campaigns," *American Politics Research* 42(6): 1034-1076.

Under Review

Parrott, Michael D. and Frances E. Lee. "Uneven Playing Fields? Understanding the Over- and Under-Representation of Political Interests on Congressional Committees."

Rouse, Stella M., Michelle L. Swers, and Michael D. Parrott. "Legislative Minority Groups and Agenda-Setting: A Social Network Examination of Collaboration and Integration in Congress."

Fellowships, Awards, and Grants

AI Model Share Project, ISERP Start-Up Center Grant, Columbia University, 2019

American Political Science Association Congressional Fellowship, 2016-2017

Conley H. Dillon Dissertation Award, Department of Government and Politics, University of Maryland, 2015

Graduate Fellowship, Department of Government and Politics, University of Maryland, 2010-2015

Advanced Spatial Statistics Workshop Scholarship and Travel Grant,
National Institute of Health, 2011

Quantitative Methods Training Award, Department of Government and Politics,
University of Maryland at College Park, 2011

Graduate Fellowship, Department of Government, Fordham University, 2007-2009

Teaching Experience

Instructor, Columbia University

- Machine Learning for the Social Sciences
- Data Mining
- GIS and Spatial Statistics
- Modern Data Structures
- Data Visualization
- Multivariate Political Analysis
- Advanced Regression Modelling for Social Science Research
- Theory and Methods for Quantitative Research

Instructor, University of Maryland, College Park

- Interest Groups in the Legislative Process
- State and Local Politics
- Introduction to Politics
- Scope and Methods for Political Science Research
- Government and Politics Public Policy Internship Seminar

Graduate Teaching Assistant, University of Maryland, College Park

- The Craft of Political Science Research
- GIS Analysis for Social Science Research (Graduate Level Course)
- Introduction to Politics

Other

Foreign Language and International Experience

Advanced conversational abilities in Spanish (intermediate reading and writing)

Intermediate conversational ability in Catalan
Beginner conversational ability in Japanese

Foreign residence in Japan and Europe with further travel in South East Asia, China, and Latin America.