DUNCAN J. MAYER, Ph.D.

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PROFESSIONAL SUMMARY

I am social scientist with over 6 years of experience using rigorous data science, research, and evaluation methods to understand programs, policies, and behaviors. I have experience designing and leading projects with academic, government, and private sector stakeholders, in research, consulting, and technical assistance across such areas as child welfare and health, workforce and community development, and capacity building. I excel at research dissemination and have communicated results and recommendations to audiences with a range of technical sophistication.

Though skilled with a number of methodologies, I have developed expertise in a range of quantitative approaches. I use a modern computational workflow including version control, and am literate in R, SQL, as well as domain specific languages. I can quickly orient myself to new projects, and have experience working with diverse data sources: structured and unstructured data, as well as relational databases, administrative data, and surveys.

SKILLS

Quantitative: Survey Design and Analysis, Instrument Development, (Generalized) Linear Models, Longitudinal Data Analysis, Hierarchical Models, Model Criticism, and Spatial Statistics

Qualtitative: Focus Groups, Interviews, Content Analysis, and Case Studies

Programming: R (8 years) | SQL (4 years) | Stan (3 years) | Python (developing)

PROFESSIONAL EXPERIENCE

BeVera Solutions
Atlanta, GA

Statistician (full-time)
Sept. 2022 – Present

As a statistician at a data science consulting firm I developed project proposals, including substantive and methodological elements. In a client facing role I provided ongoing statistical support, I led and managed the methodological development of studies addressing internal questions for the Centers for Disease Control and Prevention's National Center for Infectious and Respiratory Disease. I interacted a large database of demographic and vaccination information (all federal, jurisdictional, and pharmacy records) to monitor and evaluate vaccine deployment. I built a probabilistic matching algorithm to improve data quality and reduce duplication. I constructed and validated datasets, writing SQL queries and merging administrative and public data, and led data analysis by modeling vaccine receipt for studies of health equity within federal agencies. I proposed and developed jurisdictional data visibility studies: disaggregating and mapping vaccine receipt by submission revealing gaps in visibility for jurisdictional partners.

Case Western Reserve University
Cleveland, OH

Research fellow (full-time)
Aug. 2018 – June. 2022

As a research fellow with the Center on Poverty and Community Development I developed and managed a research portfolio focused on novel quantitative methodologies, program evaluation, and empirical studies of the distribution of community resources using modern computational methods. I built a novel hierarchical model for small area estimation which reduces bias by incorporating uncertainty in sampling and validated the model through simulation. I quantified the relationship between location, agglomeration, and organizational performance using generalized additive models with point-reference data. I geocoded and merged 10 years of data from disparate sources (APIs, administrative records, web scraping), and estimated hierarchical models which account for spatial and non-spatial heterogeneity to study juvenile delinquency, child maltreatment, and infant mortality. I disseminated these results in academic journals and presentations, and independently procured over $80,000 in competitively awarded support for independent research.

I delivered technical assistance, methodological support, and consultation for a range of evaluative projects housed in the Center on Poverty and Community Development. I analyzed survey data as part of a needs assessments for proposed educational programs, administrative data for an outcome evaluation for a community health program, and led the development of evaluation capacity building for a range of nonprofits including new data capture materials and process evaluations through interviews. Finally, I taught bachelors and master's level courses in research and community practice, and developed a programming course for the data science for social impact certificate.

The Institute for Public Policy and Economic Development
Wilkes-Barre, PA

Research Analyst (full-time) July 2017 – June 2018

As a research analyst at a community based research organization I co-authored and led data analysis for funded empirical research projects including an analysis of the region's workforce trends using model-based projections of workforce needs, an impact evaluation of apprenticeship and early education programs using administrative data, and out-migration of college graduates using survey data. I ran focus groups as part of needs assessments for the United Way and the Area Agency on Aging. I regularly provided consultation and technical assistance to health and human service oriented nonprofits and foundations, including evaluation capacity building by developing implementation and monitoring plans.

Marywood University
Scranton, PA

Research Assistant (part-time) January 2017 – July 2017

While completing a masters degree I provided quantitative methodological support for a case control study, with a probability sample, of behavioral interventions and expulsion rates in childcare centers across northeast Pennsylvania. I managed the study's data collection, including administrative and survey data, led data analysis and visualization.

United Way of Lackawanna, Wayne, and Pike Counties
Scranton, PA

Community Impact Intern (Part-time) Sept. 2016 – June 2017

While completing a masters degree I worked with the region's United Way to provide technical assistance to grantees, enhancing their data capture and evaluation efforts. I analyzed educational assessments for change over time, educated partners on census products to understand the region, and developed briefs and primers for task forces focused on a range of social and health issues.

The Institute for Public Policy and Economic Development
Wilkes-Barre, PA

Research Intern (Part-time) Dec. 2016 – June 2017

In the time between finishing my bachelors and beginning my masters degree, I worked with a community based research organization and contributed to funded research projects by collecting and analyzing survey data related to child welfare workforce development and job satisfaction, and developing literature reviews related to kindergarten truancy and the effect of the coal economy on northeast Pennsylvania.

United Neighborhood Centers of Northeast Pennsylvania
Scranton, PA

Social Work Intern (Part-time) Dec. 2015 – June 2016

During course work for a bachelors degree I worked with a local human service agency providing case management for clients in emergency situations such as utility shut-offs, eviction, and foreclosure.

Prevention Point Philadelphia
Philadelphia, PA

Social Work Intern (Full-time) May. 2015 – August 2015

While completing a bachelors degree I worked with a community health organization focused on harm reduction and substance use. I provided case management to a rotating caseload in a medication assisted treatment program, distributed resources, and managed inventory in the syringe exchange program.

EDUCATION

Case Western Reserve University Cleveland, OH
PhD in Social Welfare (Completed June) 2023
Dissertation: Essays on Community-Organization Dynamics

Marywood University Scranton, PA
Masters of Social Work 2017
Thesis: Evaluation Capacity; Structures, Stakeholders, Attitudes, and Environment

Bachelors of Social Work 2015

SELECT HONORS

Case Western Reserve University Social Justice Institute Research Fellow 2022-2023

Association for Research on Nonprofit Organizations and Voluntary Action Doctoral Fellow 2022

Jack, Joseph and Morton Mandel School of Applied Social Sciences Research Fellow 2018-2022

PUBLICATIONS

Peer-Reviewed Publications

Mayer, D. J., Groza, V. (2023). Promoting Children's Rights in Program Evaluation. *American Journal of Evaluation*. DOI: 10.1177/10982140221134621

Mayer, D. J., Fischer, R. L. (2023). Teaching Spatial Data Analysis; A Case Study with Recommendations. *Nonprofit Policy Forum*. DOI: 10.1515/npf-2022-0044

Mayer, D. J. (2023). Understanding Location and Density; A Spatial Analysis of Cuyahoga County Ohio's Nonprofit Sector. *Nonprofit and Voluntary Sector Quarterly*. DOI: 10.1177/08997640231171074

Mayer, D. J., Fischer, R. L. (2023). Exploring Niche Alteration in Nonprofit Organizations. *Administration and Society*. DOI: 10.1177/00953997231165255

Mayer, D. J. (2023). Social Capital and the Nonprofit Infrastructure; An Ecological Study of Child Maltreatment. *Journal of Community Psychology*. DOI: 10.1002/jcop.22984

Mayer, D. J. (2023). Understanding Social Disorganization and the Nonprofit Infrastructure; An Ecological Study of Child Maltreatment Rates. *Social Currents*. DOI: 10.1177/23294965231159317

Mayer, D. J., Fischer, R. L. (2023). Exploring Data Use in Nonprofit Organizations. *Evaluation and Program Planning*. DOI: 10.1016/j.evalprogplan.2022.102197

Mayer, D. J. (2022). Simmer Down Now! A Study of Revenue Volatility and Dissolution in Nonprofit Organizations. *Nonprofit and Voluntary Sector Quarterly*. DOI: 10.1177/08997640221126147

Mayer, D. J., Fischer, R. L. (2022). Can a Measurement Error Perspective Improve Estimation in Neighborhood Effects Research? A Hierarchical Bayesian Methodology. *Social Science Quarterly*. DOI: 10.1111/ssqu.13190

Manuscripts Under Review

Mayer, D. J. (under review) Delinquency, Lead, and Nonprofit Density; A Spatio-Temporal Perspective. *Social Science and Medicine*.

Mayer, D. J. Spatial Disparities in Infant Mortality: The Role of Neighborhood Characteristics. *Journal of Urban Health*.

Mayer, D. J. (under review). On the Specification of the Binary Weight Matrix in the ICAR Prior: Implications for Inference. *Spatial and Spatio-temporal Epidemiology*.

Mayer, D. J. (under review). The Nonprofit Response to Neighborhood Conditions: Incorporating Space-Time Heterogeneity. *Nonprofit and Voluntary Sector Quarterly*.

Mayer, D. J. (under review). Revealed Preference for Nonprofit Organizations; A Hedonic Price Analysis. *Social Policy and Administration*.

Mayer, D. J. (under review). Connecting Founding and Dissolution; A Demographic Study of The US Nonprofit Sector. *Public Administration Review*.

Mayer, D. J. (under review). Exploring Variation in the Relationship Between Deprivation and the Density of Human Service Nonprofits. *Administration and Society.*

Mayer, D. J. (under review). Discussion and Application of Empirical Models for Nonprofit Density and Vital Events. *Nonprofit Policy Forum.*

Mayer, D. J. (under review). Revisiting Portfolio Composition and Volatility: Short- and Long-Term Perspectives. *Journal of Public and Nonprofit Affairs.*

Book Chapters and Reviews

Fischer, R. L., **Mayer, D. J.** (2022) Nonprofit Management: Beyond Managerialism. In W. Brown, M. Hale (eds). *Preparing Nonprofit Leaders: Contemporary Perspectives.* Routledge. ISBN: 9781032277806

Fischer, R. L., **Mayer, D. J.** (2020). Macro Social Work Practice: Working for Change in a Multicultural Society. *Journal of Teaching in Social Work.* DOI: 10.1080/08841233.2020.1809257

Select Professional or Technical Reports

Fischer, R., Mansoor, D., **Mayer, D. J.** (2020). A Study of the Educational Needs of Fundraising and Grant Making Professionals in Northeast Ohio.

Atwell, M., Fischer, R., L., Chan, T, **Mayer, D. J.**, Henderson, M. (2019). Year Two Gap Analysis: Accountable Health Communities. The Center on Poverty and Community Development.

Ooms, T., Chew, A., **Mayer, D. J.** (2018). Senior Needs Assessment: 2018. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., **Mayer, D. J.**, Ritter, C. (2018). Berwick Community Needs Assessment. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., McCormick, E., **Mayer, D. J.** (2018). The Intersection of Transit and Land Use. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., **Mayer, D. J.**, McCormick, E. (2018). Social Determinants of Health. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., **Mayer, D. J.**, McCormick, E. (2018). Health Literacy: A Public Health Challenge. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., **Mayer, D. J.**, McCormick, E. (2018). What's Next? A Technical Report on 2018 Post-Graduation Polls. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., **Mayer, D. J.**, McCormick, E. (2018). The Nonprofit Social Service Sector in Luzerne and Lackawanna Counties. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., McCormick, E., **Mayer, D. J.** (2018). Workforce Trends and Challenges in Northeastern Pennsylvania. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., McCormick, E., **Mayer, D. J.** (2018). The Behavioral Health Initiative: A Report on the Behavioral Health Workforce. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Ooms, T., Chew, A., McCormick, E., **Mayer, D. J.** (2017). Public Policy and Civic Engagement: A Technical Report on 2017 Polls. Wilkes-Barre, PA: The Institute for Public Policy and Economic Development.

Mayer, D. J. (2017). Preschool and Dibels Assessments. Scranton, PA: United Way of Lackawanna and Wayne Counties.

MEDIA

"Mandel School's Duncan Mayer explores nonprofit location and density", featured in Case Western Reserve University's "the Daily." June 23rd, 2023.

"Mandel School's Duncan Mayer writes about child maltreatment", featured in Case Western Reserve University's "the Daily." May 12th, 2023.

"Duncan Mayer writes about revenue volatility", featured in Case Western Reserve University's "the Daily." December 2nd, 2022.

PRESENTATIONS

Presentations at National Conferences

Mayer, D. J. (2022, accepted but not presented). Understanding Social Disorganization and the Nonprofit Infrastructure; An Ecological Study of Child Maltreatment Rates. The Society for Social Work Research. Juried poster presentation.

Mayer, D. J. (2022). Revealed Preference for Nonprofit Organizations; A Hedonic Price Analysis. Annual Conference of the Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA). Juried paper presentation.

Mayer, D. J. (2022). Nonprofit Response to Neighborhood Conditions: Incorporating Space-Time Heterogeneity. Annual Conference of the Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA). Juried paper presentation.

Mayer, D. J., Fischer, R. L. (2021). Examining Revenue Volatility in Nonprofit Organizations with a Discussion of Measurement and Portfolio Representation. Annual Conference of the Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA). Juried paper presentation.

Presentations at Local Conferences

Mayer, D. J. (2022). Understanding the Geography of Cuyahoga County's Nonprofit Sector Through Form-990 Data. Data Days Cleveland. Juried oral presentation.

Mayer, D. J. (2017). Evaluation Capacity: Structures, Stakeholders, Attitudes, and Environment. Annual Conference of the National Association of Social Workers, Pennsylvania. Juried poster presentation.

TEACHING (AND RELATED) EXPERIENCE

Instructor of Record

Case Western Reserve University

Evidence-informed practice (SASS 528)	Masters of Social Work: 2021 (in-person), 2022 (online)
Theoretical contexts shaping community practice (SASS 534)	Masters of Social Work: 2021 (online), 2022 (in-person)
Poverty, wealth building, and social entrepreneurship (SASS 367)	Social Work Minor: 2020 (online)

Course Development

Case Western Reserve University

Working with data for organizational empowerment (SASS 500)	Masters of Social Work, Certificate in Data Sciences for Social Impact, Approved 2021
Community practice policy: Analyzing and changing social policy (SASS 561)	Masters of Social Work, Approved 2020 (online)

Teaching Assistant

Case Western Reserve University

Data-based decision making (SASS 410)	Masters of Nonprofit Organizations, 2020 (online)
Theoretical contexts shaping community practice (SASS 534)	Masters of Social Work, 2019-2021 (online/in-person)
Community practice policy: Analyzing and changing social policy (SASS 561)	Masters of Social Work, 2019-2021 (online/in-person)

Marywood University

Social work research: Implementation and analysis (SW 702)	Masters of Social Work, 2017 (in-person)

SERVICE AND LEADERSHIP

Member, Case Western Reserve University Social Welfare PhD Executive Committee	2017-2019
Member, Case Western Reserve University Masters of Social Work Community Practice Curriculum Committee	2019

Ad hoc Reviewer: Nonprofit Management and Leadership, City and Community