Joel A. Middleton, PhD
Assistant Professor of Political Science
University of California, Berkeley

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SUMMARY

My academic research has developed a flexible statistics framework for the analysis of virtually any experimental design, even those for which no existing analytical results are available due to setting-specific research constraints, complex assignment dependencies or interference. Complementing this research, I have 18 years' experience implementing field experiments in challenging contexts, such as political campaigns or conflict zones, and in modeling voter behavior for political organizations. I also have extensive professional experience designing and analyzing surveys, with expertise in item construction and testing, probability sampling, experimental survey design, and data analysis.

ACADEMIC POSITIONS

2014-	Assistant Professor, Department of Political Science *University of California, Berkeley*
2011-2014	Visiting Assistant Professor, Department of Applied Statistics, Social Science and Humanities Affiliations: - Center for Data Science and Center - Center for the Promotion of Research Involving Innovative Statistical Methodology *New York University*

PROFESSIONAL EXPERIENCE

2001-2018	Consulting Statistician. *Penn, Schoen and Berland Associates* Designed and implemented: machine learning models of voter behavior for statewide voter outreach campaigns; survey experiments using optimal, fractional or factorial designs.
2008-2009	Senior Analyst. *Analyst Institute* Designed and implemented: large-scale voter targeting models and models of voter behavior; field experiments evaluating impact of voter outreach and mobilization; research in challenging campaign environments with novel designs that address field-constraints; research dissemination.
2001-2005	Consultant II. *The Rendon Group* Oversaw budgets, designed research and managed analysts for DARPA-funded research. Designed and implemented media coding protocols for quantitative measurement of news content from 40 countries worldwide. Trained eleven foreign language analysts in media coding protocols and oversaw quality control.
1999-2001	Statistician. *Penn, Schoen and Berland Associates* Designed and implemented: survey experiments using optimal, fractional or factorial designs; interactive simulation tools; survey instruments.

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EDUCATION

2011   Doctor of Philosophy in Political Science
Yale University

2004   Master of Science in Statistics
The George Washington University

1999   Master of Science in Psychology
Brown University

1997   Bachelor of Science in Psychology
Lewis and Clark College

RESEARCH: CAUSAL INFERENCE/DESIGN-BASED INFERENCE (DBI)

A Design-based Theory of Optimal Index Construction
Working paper **2022**, with A Demin and C Samii

A Unified Approach to Evaluating Estimators in Complex Experimental Designs
Working paper **2022**, with H Chang

How to Account for Alternatives When Comparing Effects: Revisiting 'Bringing Education to Afghan Girls'
arXiv:2106.15076 **2022**, with D Burde, R Rahnama, and C Samii

Optimized Variance Estimation under Interference and Complex Experimental Designs
arXiv:2112.01709 **2021**, with C Harshaw, and F Sävje

Unifying DBI: A New Variance Estimation Principle
arXiv:2109.09236 **2021**

Unifying DBI: On Estimating the Variance of Linear Estimators in any Experimental Design
arXiv:2109.09220 **2021**

Exact Bias Correction for Linear Adjustment of Randomized Controlled Trials
arXiv:2110.08425 **2021**, with H Chang and P M Aronow

A Unified Theory of Regression Adjustment for Design-based Inference
arXiv:1803.06011 **2018**

Potential for Bias Inflation with Grouped Data: A Comparison of Estimators and Sensitivity Analysis Strategy
Observational Studies **2018**, with M Scott, R Diakow, and J Hill

Bias Amplification and Bias Unmasking
Political Analysis **2017, 24(3): 307-323**, with J Hill and M Scott

A Class of Unbiased Estimators of the Average Treatment Effect in Randomized Experiments
Journal of Causal Inference **2013, 1(1): 135–154**, with P M Aronow

Unbiased Estimation of the Average Treatment Effect in Cluster Randomized Experiments
Statistics, Politics and Policy **2015, 1: 39-75**, with P M Aronow

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Bias of the Regression Estimator for Experiments Using Clustered Random Assignment
    Statistics and Probability Letters **2008, 78: 2654–2659**

RESEARCH: EXPERIMENTS AND QUASI-EXPERIMENTS

Can Communities Take Charge? A Randomized Controlled Trial on Sustaining Schools in Afghanistan
    Working paper **2022**, with D Burde, C Samii and Y Wang

Can Foreign Aid Boost State Legitimacy During Conflict? Experimental Evidence from Afghanistan
    Working paper **2022**, with D Burde, R Deitz, and C Samii

Political Communication: Insights from Field Experiments
    Oxford Handbook of Political Communication **2017, 1-15**, with D P Green and A Carnegie

Are Ballot Initiative Outcomes Influenced by Independent Groups? A Precinct-Randomized Experiment
    Political Behavior **2015, 37(3): 1-27**, with T Rogers

Priming Under Fire: Reverse Causality and the Classic Media Priming Hypothesis
    Journal of Politics **2014, 76(2): 581-592**, with A Hart

Do Community-Based Voter Mobilization Campaigns Work Even in Battleground States? Evaluating the Effectiveness of MoveOn's 2004 Outreach Campaign
    Quarterly Journal of Political Science **2008, 3: 63–82**, with D P Green

POLICY PAPERS

Assessment of Learning Outcomes and Social Effects of Community-Based Education: A Randomized Field Experiment in Afghanistan. *New York University*, with D Burde, and C. Samii

    Reports:
    – Phase Two Endline Report. **2019**, also with M Lisiecki and O Okhidoi
    – Phase Two Baseline Report. **2018**
    – Phase One Outcomes Report. **2016**
    – Phase One Baseline Report. **2015**

    Briefs:
    – Can Communities Take Charge? Sustainability and CBE. **2019, 3(3)**
    – Capacity Building for Village Level Community Institutions. **2018, 3(2)**
    – Enhancing Female Representation in the Education Sector. **2018, 3(1)**
    – Teacher Motivations and Implications for Models of Community-based Education. **2017, 2(4)**
    – Institutional Management Practices of Village Shuras in Rural Afghanistan. **2017, 2(3)**
    – Community Capacity to Co-manage Primary Education. **2017, 2(2)**
    – Community Participation and the Sustainability of Rural Schools in Afghanistan. **2017, 2(1)**
    – Prioritizing Community-based Education Resources by Age Groups. **2016, 1(4)**
    – Evaluating the Trade-Offs in Teacher Recruitment. **2016, 1(3)**
    – Cost-Effectiveness Analysis. **2016, 1(2)**
    – Community-Based Education in Afghanistan: A Primer. **2016, 1(1)**

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GRANTS

2014-2017	Awarded: $7.2 million. Co-PI with Cyrus Samii, and Dana Burde, PI. Title: Social Effects and Learning Outcomes from Community-based Education: A Randomized Field Experiment in Afghanistan. *United States Agency for International Development* (USAID)
2013	Awarded: $250,000. Co-PI with Dana Burde, PI. Title: Social Effects and Learning Outcomes from Community-based Education: A Randomized Field Experiment in Afghanistan. *Danish International Development Agency*
2013	Awarded: $17,833. Co-PI with Dana Burde, PI. Title: Community-based Schools and Trust in Government: A Randomized Field Experiment in Afghanistan. *Institute for Human Development and Social Change*

CONFERENCES AND INVITED TALKS

2020	*UC Berkeley Economics Seminar.* Invited talk. Unifying Design-based Inference: Variance Estimation
2019	*UC Berkeley Research Workshop in American Politics.* Invited talk. Index Construction
2018	*American Political Science Association.* Talk. Exactly Unbiased Regression Adjustment
2018	*Society for Political Methodology.* Talk. A Unified Theory of Regression Adjustment for Design-based Inference
2018	*UC Berkeley Causal Inference Seminar.* Invited talk. A Unified Theory of Regression Adjustment for Design-based Inference
2017	*Association for Analytical Learning about Islam and Muslim Societies.* Talk. Bringing Education to Afghan Girls Revisited: Understanding When and Why Effects Vary
2016	*Yale International Methods Workshop.* Invited talk. Estimation Approaches for Rerandomized Designs
2016	*Harris School Political Economy Workshop.* Invited talk. Bias Amplification and Bias Unmasking
2016	*Midwest Political Science Association.* Talk. Bias Amplification and Bias Unmasking
2016	*Society for Political Methodology.* Poster. Design-based Inference for Complex Experimental Designs
2015	*Joint Statistical Meetings.* Talk. Bias Amplification in Context: The Case of Fixed Effects
2015	*Joint Statistical Meetings.* Talk. Bias Amplification Bounds
2015	*Stanford Political Methods Workshop.* Invited talk. Bias Amplification and Bias Unmasking

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2013   *Joint Statistical Meetings*. Talk. Inclusion/Exclusion Criteria for Bias Amplifying Covariates: A Sensitivity Analysis Framework

2013   *Joint Statistical Meetings*. Talk. Shrinkage for Improved Inference in High Dimensional Factorial Experiment on Voter Mobilization

2011   *Midwest Political Science Association*. Talk. Direct-Mail Campaigns Can Persuade Voters: Evidence from a Randomized Field Experiment Studying Ballot Guides in Oregon

2011   *Analyst Group Meeting*. Invited talk. Priming, Projection or Both: Reevaluating the Classic Media Priming Hypothesis

2009   *Society for Political Methodology*. Poster. What Characteristics Must an Omitted Variable Have to Bias an Estimator by a Given Amount?

2008   *Society for Political Methodology*. Poster. Is Matching Really "Essential" for Cluster Randomized Experiments?

TEACHING

Department of Political Science, *University of California, Berkeley*
   – Quantitative Analysis in Political Research (PS 231A)
   – Design-based Causal Inference (PS 239)
   – Research Workshop in Quantitative Modeling (PS 291F)
   – Public Opinion and Voting (PS 161)

Department of Applied Statistics, Social Science and Humanities, *New York University*
   – Survey Research Methods (RESCH-GE 2139)
   – Large Databases in Education Research (E10.2110)
   – Introductory Statistics (RESCH-GE 1085)

PROFESSIONAL SERVICE

2016-present   Member, *Experiments in Governance and Politics* (EGAP)

2019   Graduate Admissions Committee, *UC Berkeley*

2017   Coordinator for Research Workshop in American Politics, *UC Berkeley*

2014-2015   Editor, *Statistics, Politics and Policy*

2011-2013   Committee on Statistics Education, *PRIISM Center, New York University*

2011   Survey Methods Consultant, *CARE International*