Curriculum Vitae: Corwin Matthew Zigler, Ph.D.

September 17, 2018

Contact Information

University of Texas at Austin
Department of Statistics and Data Science
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Austin, Texas 78712-1823

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Citizenship: United States Citizen

Current Position

Associate Professor, Department of Statistics and Data Sciences — 2018 - present
Associate Professor, Department of Women's Health, Dell School of Medicine
University of Texas, Austin, TX

Previous Positions

Associate Professor, Department of Biostatistics — 2018
Harvard T.H. Chan School of Public Health, Boston, MA

Assistant Professor, Department of Biostatistics — 2013 - 2018
Harvard T.H. Chan School of Public Health, Boston, MA

Education

B.A. Mathematics with Specialization in Probability and Statistics, Boston University — 2005
Summa Cum Laude

M.A. Mathematics with Specialization in Probability and Statistics, Boston University — 2005
Summa Cum Laude

Ph.D. Biostatistics, University of California, Los Angeles — 2010
Thesis: Bayesian strategies for posttreatment variable adjustment using principal stratification: Application to treatment noncompliance and principal surrogate endpoints.
Advisor: Professor Thomas R. Belin

Postdoctoral and Other Research Training

Intern, Center for Birth Defects Research and Prevention — 2004–2005
Massachusetts Department of Public Health, Boston, MA

Research Statistician, Center for AIDS Research, Education, and Services — 2005
Charles Drew University, Los Angeles, CA

Research Assistant, Section of Oral and Maxillofacial Surgery — 2005–2010
UCLA School of Dentistry, Los Angeles, CA

Postdoctoral Research Fellow, Department of Biostatistics — 2010–2011
Harvard School of Public Health, Boston, MA
Faculty Mentor: Professor Francesca Dominici

Research Associate, Department of Biostatistics — 2011–2013
Harvard School of Public Health, Boston, MA

Teaching Experience

Instructor, Harvard Department of Biostatistics — 2012 - 2015
Course: Bayesian methodology in biostatistics.

Instructor, Harvard Department of Biostatistics — 2016 - 2017
Course: Applied Bayesian analysis

Honors and Awards

Scholarship Recipient, Summer Institute for Training in Biostatistics, NHLBI, 2004.

College Prize for Excellence in Statistics, Boston University, 2005.

Oral and Maxillofacial Surgery Foundation (OMSF) Daniel M. Laskin Award for the most outstanding article published in the *Journal of Oral and Maxillofacial Surgery* in 2008.

2010 Carolbeth Korn Prize awarded to the most outstanding graduating student in the UCLA School of Public Health.

2012 American Statistical Association Statistics in Epidemiology Section Young Investigator Award.

Publications

Publications in Statistical Methodology and Epidemiology

1. **Zigler CM** and Belin TR. The potential for bias in principal causal effect estimation when treatment received depends on a key covariate. *Annals of Applied Statistics* 2011; **5**(3): 1876-1892.
2. **Zigler CM**, Dominici F, and Wang Y. Estimating causal effects of air quality regulations using principal stratification for spatially-correlated multivariate intermediate outcomes. *Biostatistics* 2012; **13**(2): 289–302.
3. **Zigler CM** and Belin TR. A Bayesian approach to improved estimation of causal effect predictiveness for a principal surrogate endpoint. *Biometrics* 2012; **68**(3): 922-932.
4. **Zigler CM**, Watts K, Yeh RW, Wang Y, Coull BA, and Dominici F. Model feedback in Bayesian propensity score estimation. *Biometrics* 2013; **69**(1): 263 -273.
5. **Zigler CM** and Dominici F. Uncertainty in propensity score estimation: Bayesian methods for variable selection and model averaged causal effects. *Journal of the American Statistical Association* 2014; **109**(505): 95–107.
6. **Zigler CM** and Dominci F. Clarifying Policy Evidence with Potential-Outcomes Thinking: Beyond Exposure-Response Estimation in Air Pollution Epidemiology. *American Journal of Epidemiology* 2014; **180**(12): 1133–1140.
7. Wang C, Parmigiani G, and Dominici, F, and **Zigler CM**. Accounting for Uncertainty in Confounder and Effect Modifier Selection when Estimating Average Causal Effects in Generalized Linear Models. *Biometrics* 2015; **71**(3): 654–665.
8. **Zigler, CM**. The Central Role of Bayes Theorem for Joint Estimation of Causal Effects and Propensity Scores. *The American Statistician* 2016; **70**(1): 47–54.
9. **Zigler, CM**, Kim C*, Choirat C, Hansen JB, Wang Y, Hund L*, Samet J, King G, and Dominici F. Causal Inference Methods for Estimating Long-Term Health Effects of Air Quality Regulations; Research Report 187; *Health Effects Institute*. Boston, MA 2016.
10. Antonelli JL*, **Zigler CM**, and Dominici F. Guided Bayesian imputation to adjust for confounding when combining heterogeneous data sources in comparative effectiveness research. *Biostatistics* 2017; **18**(3) 553–569.
11. Braun D*, Gorfine M, Parmigiani G, Arvold ND, Dominici F, and **Zigler CM**. Propensity scores with misclassified treatment assignment: a likelihood-based approach *Biostatistics* 2017; **8**(4) 695–710.
12. Dominici F and **Zigler CM**. Best practices for gauging evidence of causality in air pollution epidemiology. *American Journal of Epidemiology* 2017; **186**(12) 1303–1309.
13. **Zigler CM**, Choirat C, and Dominici F. Impact of National Ambient Air Quality Standards nonattainment designations on particulate pollution and health. *Epidemiology* 2018 **292**(2) 165–174.

* Denotes student or postdoctoral mentee

14. Papadogeorgou G*, Choirat C, and **Zigler CM**. Adjusting for Unmeasured Spatial Confounding with Distance Adjusted Propensity Score Matching. *Biostatistics* 2018. https://doi.org/10.1093/biostatistics/kxx074.

    * Georgia Papadogeorgou recognized with JSM 2016 Student Paper Award from HPSS, ICHPS 2015 student travel award

15. Wilson A*, **Zigler CM**, Patel CJ, Dominici F. Model?averaged confounder adjustment for estimating multivariate exposure effects with linear regression. *Biometrics* **in press**.

16. Anoke S*, Normand S-L, and **Zigler CM**, Approaches to Treatment Effect Heterogeneity in the Presence of Confounding. *Statistics in Medicine* **to appear**.

Collaborative Publications

17. Shetty V, Murphy DA, **Zigler C**, Resell J, and Yamashita DD. Accuracy of data collected by surgical residents. *Journal of Oral and Maxillofacial Surgery* 2008; **66**:1335–1342.

18. Shetty V, Atchison K, Leathers R, Black E, **Zigler C**, Belin T. Do the benefits of rigid internal fixation of mandible fractures justify the added costs? Results from a randomized controlled trial. *Journal of Oral and Maxillofacial Surgery* 2008; **66**:2203–2212.

19. **Zigler CM** and Shetty V. Article analysis and evaluation for: Manual reduction to assist intraoperative maxillomandibular fixation may suffice for mandibular angle fractures treated with open reduction and internal fixation. *Journal of Evidence Based Dental Practice.* 2009; **9**:236–237.

20. Murphy DA, Shetty V, Resell J, **Zigler C**, Yamashita D. Substance use in vulnerable patients with orofacial injury: prevalence, correlates, and unmet service needs. *Journal of Trauma* 2009; **66**:477–484.

21. Murphy DA, Shetty V, **Zigler C**, Resell J, Yamashita, D. Willingness of facial injury patients to change causal substance using behaviors. *Substance Abuse* 2010; **31**: 35–42.

22. Shetty V, Mooney LJ, **Zigler CM**, Belin TR, Murphy D, Rawson R. The relationship between methamphetamine use and increased dental disease. *Journal of the American Dental Association* 2010; **141**: 307–318.

23. Shetty V, **Zigler CM**, Robles T, Elashoff D, and Yamaguchi M. Developmental validation of a point-of-care, salivary α-amylase biosensor. *Psychoneuroendocrinology* 2011; **36**: 193–199.

24. Robles T, Shetty V, **Zigler CM**, Glover D, Elashoff D, Murphy D, and Yamaguchi M. The feasibility of ambulatory biosensor measurement of salivary alpha amylase: Relationships with self-reported and naturalistic psychological stress. *Biological Psychology* 2011; **86**: 50–56.

25. Shetty V, Murphy DA, **Zigler CM**, Yamashita DD, and Belin TR. Randomized controlled trial of personalized motivational interventions in substance using patients with facial injuries. *Journal of Oral and Maxillofacial Surgery* 2011; **69**: 2396–2411.

26. Belin TR, Fischer HJ, and **Zigler CM**. Using a Density-Variation/Compactness measure to evaluate redistricting plans for partisan bias and electoral responsiveness. *Statistics, Politics, and Policy* 2011; **2**.

27. Arcaya M, Brewster M, **Zigler CM**, and Subramanian SV. Area variations in health: A spatial multilevel modeling approach. *Health and Place.* 2012; **18**(4): 824-831.

28. Arvold ND, Wang Y, **Zigler CM**, Schrag D, and Dominici F. Hospitalization burden and survival among elderly patients with glioblastoma. *Neuro-Oncolog.* 2014; **16**(11): 1530-1540.

29. Arvold ND, Cefalu M, Wang Y, **Zigler CM**, Schrag D, and Dominici F. Comparative Effectiveness of Radiotherapy With vs. Without Temozolomide in Older Patients with Glioblastoma. *Journal of Neuro-Oncology.* 2017; **131**(2): 301-311.

30. Connelly M, Sullivan A, Chinchilla M, Dale M, Emans J, Nadelson C, Notman M, Tarbell N, **Zigler CM**, and Shore E. Impact of a junior faculty fellowship award on academic advancement and retention. *Academic Medicine*. 2017; **92**(8): 1160-1167

31. Wasfy JH, **Zigler CM**, Choirat C, Wang Y, Dominici F, and Yeh RW. Readmission Rates Following Passage of the Hospital Readmissions Reduction Program. *Annals of Internal Medicine*. 2017; **166**(5) 324.

32. Waldo S, McCabe J, Kennedy K, **Zigler CM**, Pinto D, and Yeh RW. Quality of care at hospitals identified as outliers in publicly reported mortality statistics for percutaneous coronary intervention. *Circulation* 2017. **135**(20) 1897–1907.

33. Lin C-K, Lin R-T, Chen P-C, Wang P, De Marcellis N, **Zigler CM**, and Christiani DC. A Global Perspective on Sulfur Oxide Controls in Coal-Fired Power Plants and Cardiovascular Disease. *Scientific Reports* 2018. **8** Article number 2611.

34. Ruiz ES, Morgan FC, **Zigler CM**, Besaw RJ, Schmults CD. National Skin Cancer Expenditure Analysis in the United States Medicare Population, 2013. *Journal of the American Academy of Dermatology* 2018, https://doi.org/10.1016/j.jaad.2018.04.035.

Manuscripts Submitted or Under Revision

Papadogeorgou G*, Mealli F, and **Zigler CM**. Causal Inference for Interfering Units with Cluster and Population Level Treatment Allocation Programs. *Biometrics* **Under revision**. http://arxiv.org/abs/1711.01280

Zigler CM and Cefalu M. Posterior Predictive Treatment Assignment for Estimating Causal Effects with Limited Overlap. *Bayesian Analysis* **Under revision**. http://arxiv.org/abs/1710.08749

Kim C*, Daniels MJ, Hogan JW, Choirat C, and **Zigler CM**. Bayesian Methods for Multiple Mediators: Principal Stratification and Causal Mediation Analysis of Power Plant Emission Controls. *Annals of Applied Statistics* **Under revision**.

* Chanmin Kim recognized with JSM Student Paper Award from Biometrics Section

Braun D*, **Zigler CM**, Gorfine M, Dominici F. The Effect of Measurement Error in the Treatment Assignment on the Estimation of the Average Treatment Effect. *Epidemiology* **Under revision**.

Zigler CM and Papadogeorgou G*. Bipartite Causal Inference with Interference. *Submitted*. https://arxiv.org/abs/1807.08660.

Henneman L*, Choirat C, **Zigler C**. Health Improvements in the United States Associated with Reduced Coal Emissions between 2005 and 2012. *Submitted*.

Henneman L*, Choirat C, Cesunica I, Cummiskey K*, **Zigler C**. Characterizing Population Exposure to Coal Emissions Sources in the United States. *Submitted*.

Papadogeorgou G*, Mealli F, **Zigler C**, Dominici F, Wasfy J, and Choirat C. Causal Impact of the Hospital Readmissions Reduction Program on Hospital Readmissions and Mortality. *Submitted*.

Cummiskey K*, Kim C*, Choirat C, Henneman L*, Schwartz J, and **Zigler CM**. A Source-Oriented Approach to Coal Power Plant Health Effects. *Submitted*.

* Kevin Cummiskey recognized with ICHPS 2018 Student Paper Award

Liao S* and **Zigler CM**. Uncertainty in the Design Stage of Two-Stage Bayesian Propensity Score Analysis. *Submitted*.

Lin C-K, Lin R-T, Chen T, Wei Y, Weng W-HW, **Zigler CM**, and Christiani DC. A Global Perspective on Coal-Fired Power Plants and Lung Cancer Mortality. *Submitted*.

Powers CI, Ezzati M, Butler JP, **Zigler CM**, and Spengler JD. Chronic CO Exposure Patterns Among Tibetan Nomads. *Submitted*.

Talks and Conference Participation

1. Contributed Poster Presentation: "Identification of treatment effects in the presence of deviation from randomized assignment: application to a surgical setting." Joint Statistical Meetings, 2007.
2. Contributed Talk:"Sensitivity analysis for the effect of treatment received in a principal stratification framework." Joint Statistical Meetings, 2008.
3. Invited Speaker: "Evaluating candidate surrogate endpoints with principal stratification." Center for HIV Identification Prevention Treatment and Services (CHIPTS) Methods Seminar Series, 2008.
4. Topic-Contributed Talk: "Principal stratification for evaluation of surrogate endpoints with variable control-group response." Joint Statistical Meetings, 2009.
5. Session Organizer: "Advancements in principal stratification for causal inference." Joint Statistical Meetings, 2009.
6. Contributed Talk: "Estimating treatment effects in a principal stratification framework when treatment received depends on a key covariate." International Conference on Health Policy Statistics, 2010.
7. Invited Speaker: "Principal stratification for evaluation of surrogate endpoints with varying control-group response." Bayesian Biostatistics Conference, 2010.
8. Invited Seminar Speaker: "An Approach to Multipollutant Accountability Research Using Principal Stratification." Harvard University Department of Biostatistics Environmental Health Seminar, 2011.
9. Invited Seminar Speaker: "Bayesian Evaluation of Principal Surrogate Endpoints." Harvard University Department of Biostatistics HIV Working Group Seminar, 2011.
10. Contributed Talk: "Multipollutant accountability research using principal stratification." Joint Statistical Meetings, 2011.
11. Invited Symposium Participant: "What will be the role of epidemiological research in the future of air quality management?" International Society for Environmental Epidemiology, 2011.
12. Invited Seminar Speaker: "Estimating Causal Effects of Air Quality Regulations Using Principal Stratification for Spatially-Correlated Multivariate Intermediate Outcomes." Brown University Center for Statistical Science, 2011.
13. Contributed Talk: "Accountability research for air quality regulations using principal stratification." International Conference on Health Policy Statistics, 2011.
14. Invited Seminar Speaker: "Estimating Causal Effects of Air Quality Regulations Using Principal Stratification for Spatially-Correlated Multivariate Intermediate Outcomes." Brigham Young University Department of Statistics, 2011.
15. Invited Speaker: "Estimating causal effects of air quality regulations using principal stratification for spatially-correlated multivariate intermediate outcomes." Atlantic Causal Inference Conference, 2012.
16. Contributed Talk: "Estimating causal effects of air quality regulations using principal stratification for spatially-correlated multivariate intermediate outcomes." Joint Statistical Meetings, 2012.
17. Invited Seminar Speaker: "Bayesian Variable Selection and Model Averaging for Propensity Score Estimation." Harvard University Department of Biostatistics Environmental Health Seminar, 2012.
18. Session organizer: "The role of causal inference in policy and regulatory decision making." Atlantic Causal Inference Conference, 2013.
19. Panel discussant: "Workshop on assessing the effectiveness of policies reducing PM2.5." US EPA, 2013.

20. Invited Seminar Speaker: "Uncertainty in Propensity Score Estimation: Bayesian Methods for Variable Selection and Model Averaged Causal Effects." Johns Hopkins University Department of Biostatistics. Baltimore, MD 2013.
21. Invited Seminar Speaker: "Uncertainty in Propensity Score Estimation: Bayesian Methods for Variable Selection and Model Averaged Causal Effects." University of Texas Statistical Science Seminar. Austin, TX 2013.
22. Invited Seminar Speaker: "Uncertainty in Propensity Score Estimation: Bayesian Methods for Variable Selection and Model Averaged Causal Effects." RAND Statistics Seminar. Santa Monica, CA 2013.
23. Invited Seminar Speaker: "Uncertainty in Propensity Score Estimation: Bayesian Methods for Variable Selection and Model Averaged Causal Effects." Harvard University Statistics Department Colloquium. Cambridge, MA 2013.
24. Invited Speaker: "How It's Done: Propensity Scores." Dana Farber Cancer Institute How It's Done Seminar Series, Boston, MA, 2014.
25. Invited Discussant for session: "'Causal Inference with Intermediate Variables" International Biometric Conference, Florence, Italy, 2014.
26. Invited Symposium Speaker: "Causal Effects of Regulatory Interventions: Beyond Exposure-Response Functions in Air Pollution Epidemiology." New methods to assess the health effects of air quality actions, International Society for Environmental Epidemiology, Seattle, WA 2014.
27. Topic-Contributed Talk: "CER with Ever-Increasing Amounts of Administrative Data: Bayesian Methods for Confounding Uncertainty and Heterogeneous Treatment Effects." Joint Statistical Meetings, Boston, MA 2014.
28. Invited Seminar Speaker: "Posterior-predictive treatment assignments and the estimation of causal effects." University of Chicago Booth School of Business Econometrics and Statistics Colloquium. Chicago, MA, 2014.
29. Invited Seminar Speaker: "Posterior-predictive treatment assignments and the estimation of causal effects." University of Connecticut Department of Statistics Colloquium. Storrs, CT, 2014.
30. Invited Speaker: "Confounding Uncertainty and treatment effect heterogeneity in comparative effectiveness research." Fields Institute Workshop on Big Data for Health Policy. Toronto, Canada, 2015.
31. Invited Seminar Speaker: "Posterior-predictive treatment assignments and the estimation of causal effects." Yale University Department of Biostatistics Department Seminar. New Haven, CT, 2015.
32. Invited Speaker: "CER with Administrative Data: Methods for Confounding Uncertainty and Heterogeneous Treatment Effects." Harvard Catalyst Biostatistics Seminar Series. Boston, MA, 2015.
33. Invited Seminar Speaker: "Bayesian Methods for Multiple Mediators: Principal Stratification and Causal Mediation Analysis of Power Plant Emission Controls." University of Pennsylvania Department of Biostatistics. Philadelphia, PA, 2015.
34. Invited Speaker: "Causal Methods for Evaluating Air Quality Control Policies." Session on Tools for Policy: Bayesian Assessments to Support Decision Makers, International Conference on Health Policy Statistics. Providence, RI, 2015.
35. Invited session organizer and speaker for session on Environmental Epidemiology. Talk Title: "Evaluating Power Plant Regulatory Policies: Bipartite Causal Inference with Interference." New England Statistics Symposium. New Haven, CT, 2016.
36. Invited Workshop Presenter: "Demystifying Causal Inference Methods for Air Pollution Accountability." Health Effects Institute Annual Conference. Denver, CO, 2016.

37. Invited Discussant, Causal inference with Highly Dependent Data in Communicable Diseases Research. Harvard University, Cambridge, MA, 2016.
38. Invited Speaker, "Evaluating Power Plant Regulatory Policies: Bipartite Causal Inference with Interference." Atlantic Causal Inference Conference. New York, NY, 2016.
39. Topic-Contributed Talk: "Evaluating Air Quality Control Policies: Bipartite Causal Inference with Interference." Joint Statistical Meetings, Chicago, IL, 2016.
40. Invited Speaker, University of North Carolina Department of Biostatistics Seminar Speaker. Chapel Hill, NC, 2016.
41. Invited Symposium Speaker: "Causal inference methods for evaluating national or regional air quality interventions." International Society for Environmental Epidemiology, Rome, Italy, 2016.
42. Invited Speaker, "Causal Inference Methods for Evaluating Policies to Reduce Air Pollution from Power Plants." Emory University Department of Biostatistics. Atlanta, GA, 2016.
43. Invited Speaker, "Causal Inference Methods for Evaluating Policies to Reduce Air Pollution from Power Plants." Brown University Department of Biostatistics. Providence, RI, 2016.
44. Invited Speaker, Workshop on Mixture and latent variable models for causal inference and analysis of socio-economic data. Bologna, Italy, 2017.
45. Invited Speaker, Bayesian Section of the Italian Society of Statistics 2017 Meeting. Rome, Italy, 2017.
46. Invited Pre-Event Workshop Presenter: "Demystifying Causal Inference Methods for Air Pollution Accountability." 14th Annual Air Quality and Health Workshop. Vancouver, BC, 2017.
47. Invited Speaker, 14th Annual Air Quality and Health Workshop. Vancouver, BC, 2017.
48. Invited Speaker, Center for Health Care and Policy Research/Department of Health Policy and Administration, Pennsylvania State University, 2017. "Causal Inference Methods for Evaluating Air Quality Policies."
49. Invited Speaker, International Chinese Statistical Association. Chicago, IL, 2017. "Bayesian Methods for Principal Stratification and Causal Mediation Analysis with Multiple Intermediates: Evaluating Power Plant Regulatory Interventions"
50. Invited Speaker, MIT Energy for Human Development (e4Dev) Seminar, Cambridge, MA, 2017. "Combining Statistical Methods with Atmospheric Models for Direct Accountability Assessment."
51. Invited Speaker, Harvard Data Science Initiative 45/45 Seminar Series, Cambridge, MA, 2017. "Evaluating Air Quality Policies with Statistics, Causal Inference, and Atmospheric Science."
52. Invited Speaker Workshop on Causal Adjustment in the Presence of Spatial Dependence, part of thematic program at Centre de Recherches Mathematique on Causal Inference in the Presence of Dependence and Network Structure, Montreal QC, Canada. 2018
53. Invited Speaker, JSM 2018, Vancouver, BC, Canada. "Beyond Exposure-Response Estimation in Air Pollution Epidemiology: Causal Inference for Informing Air Quality Policies."
54. Invited Speaker, American Statistical Association Biennial Workshop of the Section on Statistics and the Environment, Asheville, NC. 2018

Students and Postdoctoral Trainees

Doctoral Students in Biostatistics

1. Sarah Anoke, Ph.D., Graduated May 2017
2. Kevin Cummiskey, Graduation May 2018
3. Georgia Papadogeorgou, co-Advisor with Francesca Dominici, Graduated May 2018
4. Leah Comment, Expected Graduation: Spring 2019
5. Shirley Liao, Expected Graduation: Spring 2019
6. Federica Licari, visiting Ph.D. student form University of Florence, Fall 2017

Postdoctoral Research Advisees

1. Chanmin Kim, Ph.D., currently Assistant Professor at Boston University
2. Danielle Braun, Ph.D., currently Research Scientist at Harvard TH Chan School of Public Health
3. Lucas Henneman, Ph.D., current postdoctoral advisee

Additional Dissertation Committee Membership

1. Joey Antonelli, Ph.D., Biostatistics, graduated 2015
2. Yan Wang, Biostatistics and Environmental Health, graduated May 2018
3. Catlin Powers, Environmental Health, graduated 2014
4. Cheng-Kuan Lin, Environmental Health, graduated May 2018
5. Dale Barnhardt, Epidemiology, current student

Outside Professional Service

Associate Editor, *Biometrics*, 2018-present

Associate Editor, *Biostatistics*, 2016-present

Program Chair, ASA Health Policy Statistics Section, 2018

ENAR 2018 Distinguished Student Paper Awards Committee

Member, ENAR Regional Advisory Board, 2016 - 2018

International Conference for Health Policy Statistics Student Outreach Committee, 2018

Program Chair Elect, ASA Health Policy Statistics Section, 2017

Peer reviewer for Health Canada's Clean Air Regulatory Agenda, 2016

International Conference for Health Policy Statistics Scientific Organizing Committee, 2015

New England Statistics Symposium Program Committee, 2014

Thomas R. Ten Have Junior Researcher Award Committee, Atlantic Causal Inference Conference, 2012 - 2013

Journal Referee: *Journal of the American Statistical Association*; *Biometrics*; *Journal of the Royal Statistical Society*; *Annals of Applied Statistics*; *Statistics in Medicine*; *Journal of Causal Inference*; *Bayesian Analysis*; *Health Services and Outcomes Research Methodology*; *Statistical Methods in Medical Research*; *Epidemiology*; *Epidemiologic Methods*; *BMC Medical Research Methodology*; *International Journal of Biostatistics*; *Health Affairs*; *Environmental Health Perspectives*; *Environmental Health*; *Spatial Economic Analysis*; *Air Quality, Atmosphere, and Health*; *Journal of Air and Waste Management*; *Journal of General Internal Medicine*; *Circulation: Cardiovascular Quality and Outcomes*; *International Journal of Epidemiology*; *BMJ Open*; *Journal of Oral and Maxillofacial Surgery*; *Journal of the American Dental Association*; *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology.*

Selected Research Funding

Active

Principal Investigator, NIH, R01ES026217. Causal Inference with Interference for Evaluating Air Quality Policies. Funding period: 2016 - 2021.

Principal Investigator, USEPA, RD-83587201. Air Climate and Energy Center: Regional Air Pollution Mixtures: The Past and Future Impacts of Emission Controls and Climate Change on Air Quality and Health, Project 4: A Causal Inference Framework to Support Policy Decisions by Evaluating the Effectiveness of Past Air Pollution Control Strategies for the Entire United States. Funding period: 2016 - 2020.

Co-Investigator, NIH, R01GM111339. Bayesian Methods for Comparative Effectiveness Research with Observational Data (PI: Normand). Funding period: 2015 - 2019

Co-Investigator, Health Effects Institute, HEI 4953. Assessing Adverse Health Effects of Long-Term Exposure to Low Levels of Ambient Pollution (PI: Dominici/Zanobetti). Funding period: 2016 - 2020.

Co-Investigator, NIH, R01CA181360. Clustered Semi-Competing Risks Analysis (PI: Haneuse). Funding period: 2014 - 2018.

Co-Investigator, NIH, R01HL136708. Use of Registries, Claims and Health System Data to Enhance the Evaluation of Cardiovascular Therapies in Clinical Trials (PI: Yeh). Funding period: 2017 - 2022.

Completed

Principal Investigator, Health Effects Institute, HEI4909: Causal Inference Methods for Estimating Long Term Health Effects of Air Quality Regulations. Funding period: 2012 - 2015.