

## Joseph Lawrence Antonelli, Ph.D.

---

CONTACT INFORMATION	Harvard T.H. Chan School of Public Health Department of Biostatistics 655 Huntington Avenue, SPH2 Boston, Massachusetts 02115	Mobile phone: 352-359-8037 jantonelli111@gmail.com Citizenship: United States
CURRENT POSITION	Postdoctoral Research Fellow, Department of Biostatistics Harvard T.H. Chan School of Public Health, Boston, MA	2015 - present
EDUCATION	Ph.D. Biostatistics, Harvard University <i>Thesis:</i> Statistical methods for analyzing complex spatial and missing data <i>Advisors:</i> Professors Francesca Dominici and Brent Coull	2015
	M.A. Biostatistics, Harvard University	2013
	B.S. Statistics, The University of Florida <i>Summa Cum Laude</i>	2011
RESEARCH AND PROFESSIONAL EXPERIENCE	Statistical Consultant, Brigham and Women's Hospital Boston, MA	2015 - present
	Decision Support Analyst Intern, Google Inc. Mountain View, CA	2013
	Environmental Statistics Trainee, National Institutes of Health Boston, MA	2011 - 2015
	Statistical Programming Intern, Department of Pharmaceutical Outcomes and Policy Gainesville, FL	2010 - 2011
	Actuarial Intern, Tower Hill Insurance Company Gainesville, FL	2009
TEACHING EXPERIENCE	Course Developer, Harvard Department of Biostatistics <i>Course:</i> Applied Bayesian Methodology	2016
	Teaching Assistant, Harvard Department of Biostatistics <i>Course:</i> Advanced Topics in Clinical Trials	2014
	Teaching Assistant, Harvard Department of Biostatistics <i>Course:</i> Bayesian Methodology in Biostatistics.	2013 - 2014
	Teaching Assistant, Harvard Department of Biostatistics <i>Course:</i> Statistical Programming in R	2012
	Teaching Assistant, Harvard Department of Biostatistics <i>Course:</i> Introduction to Python	2012
ADVISING EXPERIENCE	Armando Turchetta, Masters student (Co-advisor)	2017

HONORS AND  
AWARDS

2017 JSM Biometrics section young investigators award for “Doubly robust matching estimators for high dimensional confounding adjustment”  
2016 International Society for Bayesian Analysis (ISBA) young investigator travel award  
2015 Harvard Biostatistics award for excellence in teaching  
2015 International Conference on Health Policy Statistics (ICHPS) student travel award  
2014 ENAR distinguished student paper award for “Mitigating bias in generalized linear mixed models: The case for Bayesian nonparametrics”  
Recipient of Harvard scholarship to attend a course on environmental genetics in Cyprus, 2012  
Phi Beta Kappa, 2010

REFEREED  
JOURNAL  
PUBLICATIONS

**Antonelli, JL**, Cefalu M, Palmer N, Agniel D. Doubly robust matching estimators for high dimensional confounding adjustment. *Biometrics*. To appear. *arXiv:1612.00424*  
**Antonelli, JL**, Han B, Cefalu M. A synthetic estimator for the efficacy of clinical trials with all-or-nothing compliance. *Statistics in Medicine*. 36.29 (2017): 4604-4615.  
Makar M, **Antonelli, JL\*** (Co-first author), Di Q, Cutler D, Schwartz J, Dominici F. Estimating the causal effect of low levels of fine particulate matter on hospitalization. *Epidemiology*. 28.5 (2017): 627-634.  
**Antonelli, JL**, Zigler CM, Dominici F. Guided Bayesian imputation to adjust for confounding when combining heterogeneous data sources in comparative effectiveness research. *Biostatistics*. 2017  
**Antonelli, JL**, Schwartz J, Kloog I, Coull B. Spatial multiresolution analysis of the effect of PM<sub>2.5</sub> on birth weights. *The Annals of Applied Statistics* 2017; 11.2: 792-807.  
**Antonelli, JL**, Cefalu M, Bornn L. The positive effects of preferential sampling in environmental epidemiology. *Biostatistics* 2016; 17(4): 764-778.  
**Antonelli, JL**, Trippa L, Haneuse S. Mitigating bias in generalized linear mixed models: The case for Bayesian nonparametrics. *Statistical Science* 2016; 31.1: 80-95.

PUBLICATIONS  
UNDER REVIEW

**Antonelli JL** Dominici F. A Bayesian semiparametric framework for causal inference in high-dimensional data. *arXiv: 1805.04899*  
Claggett B, **Antonelli, JL\*** (Co-first author), Henglin M, Watrous J, Lehmann K, Musso G, Correia A, Jonnalagadda S, Demler O, Ramachandran V, Larson M, Jain M, Cheng S. Quantitative comparison of statistical methods for human disease trait association with mass spectrometry based metabolomics data. Under Revision. *BMC Bioinformatics*  
**Antonelli JL**, Parmigiani G, Dominici F. High dimensional confounding adjustment using continuous spike and slab priors. *arXiv:1704.07532*.  
**Antonelli JL**, Mazumdar M, Bellinger D, Christiani D, Wright R, Coull B. Bayesian variable selection for multi-dimensional semiparametric regression models. *arXiv:1711.11239*  
Henglin M, Niiranen T, Watrous J, Lehmann K, **Antonelli JL**, Claggett B, Demosthenes E, Von Jeinsen B, Ramachandran V, Larson M, Jain M, Cheng S. A Single Visualization Technique for Displaying Multiple Metabolite-Phenotype Associations  
Kurtz S, **Antonelli JL**, Persia T, Lehmann L. A national survey of physician assistants attitudes on assisted dying.

## INVITED TALKS

Invited seminar speaker: “Bayesian variable selection for multi-dimensional semiparametric regression models.” Yale University. 2017.

Invited seminar speaker: “Bayesian variable selection for multi-dimensional semiparametric regression models.” McGill University. 2017.

Invited seminar speaker: “Bayesian variable selection for multi-dimensional semiparametric regression models.” University of Florida. 2017.

Invited seminar speaker: “Bayesian variable selection for multi-dimensional semiparametric regression models.” New York University. 2017.

Invited conference speaker: “High dimensional confounding adjustment using continuous spike and slab priors”. CMStatistics. London. 2017

Webinar: “Estimating the causal effect of low levels of fine particulate matter on hospitalization”. EPA STAR Webinar. 2017

Invited seminar speaker: “Spatial multiresolution analysis of irregularly spaced grids with application to the effect of PM2.5 on birth weights”. Georgetown University. 2017

Invited lecture: “Using wavelets to decompose air pollution surfaces”. Georgetown University. 2017

Webinar: “Estimating the causal effect of lowering particulate matter levels below the United States standards on hospitalization and death: An observational study using an open cohort”. Health Effects Institute Webinar Series. 2016

Invited seminar speaker: “A synthetic estimator for the efficacy of clinical trials with all-or-nothing compliance” RAND corporation. Los Angeles, CA, 2016.

Invited seminar speaker: “Spatial multiresolution analysis of irregularly spaced grids with application to the effect of PM2.5 on birth weights.” Harvard University Department of Biostatistics Environmental Health Seminar, 2014.

## CONTRIBUTED TALKS

Contributed talk: “Nonparametric Bayes models for doubly robust causal inference for high-dimensional data”. European Causal Inference Conference. Florence, Italy. 2018

Topic contributed talk: “Doubly robust matching estimators for high dimensional confounding adjustment.”. Joint Statistical Meetings. Baltimore, MD. 2017

Contributed poster: “A flexible, tensor regression approach to estimating the health effects of chemical mixtures.”. IMS New Researchers Conference. Baltimore, MD. 2017

Contributed poster: “A flexible, tensor regression approach to estimating the health effects of chemical mixtures.”. Bayesian Nonparametric Conference. Paris, France. 2017

Contributed poster: “High dimensional confounding adjustment using continuous spike and slab priors”. Atlantic Causal Inference Conference. Raleigh, NC. 2017

Contributed talk: “High dimensional confounding adjustment using continuous spike and slab priors”. Eastern North American Region Conference. Washington DC. 2017

Contributed talk: “Guided Bayesian imputation to adjust for confounding when combining heterogeneous data sources in comparative effectiveness research.” Joint Statistical Meetings. Chicago, IL, 2016.

Contributed poster: “Guided Bayesian imputation to adjust for confounding when combining heterogeneous data sources in comparative effectiveness research.” International society for Bayesian Analysis Conference. Sardinia, Italy, 2016.

Contributed talk: “Guided Bayesian imputation to adjust for confounding when combining heterogeneous data sources in comparative effectiveness research.” Eastern North American Region Conference. Austin, Texas, 2016.

Contributed poster: “Guided Bayesian imputation to adjust for confounding when combining heterogeneous data sources in comparative effectiveness research.” International Conference on Health Policy Statistics. Providence, RI, 2015.

Contributed talk: “Spatial multiresolution analysis of irregularly spaced grids with application to the effect of PM2.5 on birth weights.” Joint Statistical Meetings. Seattle, WA, 2015.

Contributed talk: “Mitigating bias in generalized linear mixed models: The case for Bayesian non-parametrics.” Eastern North American Region Conference. Miami, FL, 2015.

Contributed poster: “The positive effects of preferential sampling in environmental epidemiology.” New England Statistics Symposium. Boston, MA, 2014.

JOURNAL REFEREE *Biometrics; Annals of Applied Statistics; Journal of Causal Inference; Statistics in Medicine; Journal of Behavioral and Educational Statistics; Epidemiology; International Journal of Environmental Science and Technology*

DEPARTMENTAL SERVICE	HSPH Environmental Statistics Seminar organizer	2016 - 2017
	Harvard Biostatistics Computing Committee	2015 - 2016

OTHER ACTIVITIES Academic volunteer, Squashbusters Boston  
Manager and player, Warehouse Gunners soccer team (Massachusetts state champions)

REFERENCES Francesca Dominici, Professor and Co-Director of Harvard Data Science Initiative  
Department of Biostatistics  
Harvard T.H. Chan School of Public Health  
*email: fdominic@hsph.harvard.edu*

Brent Coull, Professor and Associate Chair  
Department of Biostatistics  
Harvard T.H. Chan School of Public Health  
*email: bcoull@hsph.harvard.edu*

Corwin Zigler, Assistant Professor  
Department of Biostatistics  
Harvard T.H. Chan School of Public Health  
*email: czigler@hsph.harvard.edu*

Susan Cheng, Assistant Professor  
Department of Medicine  
Brigham and Womens Hospital  
*email: scheng@rics.bwh.harvard.edu*