

## Chanmin Kim

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CONTACT INFORMATION	801 Massachusetts Ave. CT303 Boston, MA 02118	617-638-5126 chanmink@bu.edu
RESEARCH INTERESTS	Causal inference and Mediation analysis Bayesian nonparametrics, clustering and mixture of distributions. Environmental health statistics, health policy, and behavioral sciences	
CURRENT POSITION	<b>Boston University</b> , Department of Biostatistics, Boston, MA <b>Assistant Professor</b> of Biostatistics,	Sep 2017 -
EDUCATION / TRAINING	<b>Harvard University</b> , Department of Biostatistics, Boston, MA Research Associate & Postdoctoral Research Fellow July 2014 - Aug 2017 Project: <i>Developing Bayesian causal inference methods for evaluating air pollution regulatory policies.</i> Mentor: Corwin M. Zigler, Ph.D.  <b>University of Florida</b> , Gainesville, FL Ph.D., Statistics Aug 2013 Thesis: <i>Bayesian methods for inference on the causal effects of mediation.</i> Advisor: Michael J. Daniels, Sc.D.  <b>Columbia University in the City of New York</b> , New York, NY M.A., Statistics May 2008  <b>Sogang University</b> , Seoul, Korea B.B.A., B.A., Business and History (Double Major) Feb 2006 <i>Magna Cum Laude</i> the second highest GPA in the department.	
RESEARCH AND PROFESSIONAL EXPERIENCE	Postdoctoral Research Fellow Aug 2013 - Jun 2014 Department of Integrative Biology, The University of Texas, Austin - Developed Bayesian nonparametric methods for causal mediation in various settings (single, multiple, or longitudinal mediators). Mentor: Michael J. Daniels, Sc.D.  Research Assistant Jan 2010 - Jul 2013 Department of Statistics, University of Florida - Causal mediation analysis in the TOURS project (weight management trial) and the Rural LITE project. Supervisor: Michael J. Daniels, Sc.D.  Research Assistant Jan 2007 - Dec 2007 Applied Statistics Center, Columbia University  Employee, Samsung Electronics, South Korea Jan 2006 - May 2006 - Worked at the HR headquarters of the Tele-Communication Business Division which is in charge of Samsung's cell phone business.  Internship, Bearing Point Consulting formerly KPMG Korea Jul 2004 - Aug 2004 - As a member of PMO, evaluated daily outputs for a project to construct a new banking system for Korean Exchange Bank (KBE). Worked with 600 IT experts.	

### Publication in Statistical Methodology

Liu, Y., **Kim, C.**, Wu, A. D., Gustafson, P., Zumbo, B. D. Investigating Causal Differential Item Functioning (DIF) via Propensity Scores Methods, *Journal of Modern Applied Statistical Methods*, in press.

**Kim, C.**, Daniels, M. J., Li, Y., A Bayesian Semiparametric Latent Variable Approach to Causal Mediation, *Statistics in Medicine*, 37(7), 1149-1161, 2018.

**Kim, C.**, Daniels, M.J., Marcus, B., Roy, J., A framework for Bayesian nonparametric model for the causal mediation analysis, *Biometrics*, 73(2), 401-409, 2017.

Zigler, C. M., **Kim, C.**, Choirat, C. Hansen, J. B., Wang, Y., Hund, L., Samet, J., King, G., Dominici, F., Causal Inference Methods for Estimating Long-Term Health Effects of Air Quality Regulations, *Health Effects Institute Research Report*, 187, 5-49, 2016 (peer-reviewed).

Daniels, M. J., Roy, J., **Kim, C.**, Hogan, J. W., Perri, M., Bayesian Inference for the Causal Effects of Mediation, *Biometrics*, 68(4), 1028-1036, 2012.

### Collaborative Publications

Perri, M., Limacher, M., von Castel-Roberts, K., Daniels, M., Durning, P., Janicke, D., Bobroff, L., Radcliff, T., Milsom, V., **Kim, C.**, Martin, A., Comparative Effectiveness of Three Doses of Behavioral Weight Loss Counseling: Two-Year Findings from the Rural LITE Trial, *Obesity*, 22, 2293-2300, 2014.

Zhang, Z., Zheng, C., **Kim, C.**, Van Poucke, S., Lin, S., Lan, P., Causal Mediation Analysis in the Context of Clinical Research, *Annals of Translational Medicine*, 4(21), 1-20, 2016.

### Manuscripts Submitted or Under Revision

**Kim, C.**, Daniels, M. J., Hogan, J. W., Choirat, C., Zigler, C. M. Bayesian Methods for Multiple Mediators: Relating Principal Stratification and Causal Mediation in the Analysis of Power Plant Emission Controls, awarded ASA 2017 Biometrics section travel award; resubmitted after revision.

**Kim, C.**, Daniels, M. J., Roy, J., Marcus, B., Longitudinal Causal Mediation Analysis for Behavioral Trials, submitted.

**Kim, C.**, Deviance Information Criteria for Mixtures of Distributions, submitted.

Cummiskey, K., **Kim, C.**, Choirat, C., Schwartz, J., Zigler, C. A Source-Oriented Approach to Coal Combustion PM<sub>2.5</sub> Health Effects, submitted

**Kim, C.**, Hogan, J. W., Marcus, B., Daniels, M. J., A Framework for Causal Inference for Multiple Mediators, In preparation (draft available upon request).

**Kim, C.**, Choirat, C., Zigler, C. M., Dominici, F., The Public Health Impact of Power Plant Emissions: Mediated Effects of Ambient PM, In preparation (draft available upon request).

**Kim, C.**, Kerrie, N., Edwards, D. (order TBD), Modeling rater diagnostic skills in ordinal classification processes, In preparation

Henneman, L., Ivey, C., **Kim, C.**, Choirat, C., Zigler, C. Characterizing Population Exposure to Coal Emissions, In preparation

Mahalingaiah, S., Lane, K., Cheng, J. **Kim, C.**, Hart, J., Impacts of Air Pollution and Disorders of the Female Reproductive System, In preparation

**Kim, C.**, An Efficient Bayesian inference for Gaussian copula in Causal Inference, In preparation

#### UNREFEREED PUBLICATIONS

**Kim, C.**, Choi, S. *Marginal Structural Models for the Causal Effects of Higher Education Rates on Cancer Mortality*, Proceedings of Joint Meeting of the IASC Satellite Conference and the 8th Conference of the Asian Regional Section of the IASC, 424-428, 2013.

#### PACKAGE / SOFTWARE

**BNPMediation**, an R package. Implements Bayesian nonparametric methods to estimate the causal effects of mediation. Available in CRAN.

#### AWARDS

##### HONORS

ASA Biometrics Section Paper Award Aug 2017  
- Invited to present the paper at the 2017 JSM

Winner (1st place), 2013 IASC data analysis competition Aug 2013  
- Invited to present the result at the joint meeting of the IASC Satellite Conference for the 59th ISI WSC and the 8th Conference of the Asian regional section of the IASC, Seoul, Korea (22-23 August 2013)

Honorable Mention, NSF research day poster competition, UF Oct 2011

3rd Place, Human Consulting Group case competition, May 2003  
NEMO Partners, South Korea

##### TRAVEL AWARDS

Sackler Travel Award (granted by NSF) Mar 2015  
for the Sackler Colloquium Drawing Causal Inference from Big Data, D.C.

Graduate Student Council (GSC) at UF May 2013  
for 2013 Atlantic Causal Inference Conference, Boston, MA

College of Liberal Arts and Sciences (CLAS) at UF May 2013  
for 2013 Atlantic Causal Inference Conference, Boston, MA

Boyd Harshbarger Travel Award (granted by NSF) Jun 2012  
for SRCOS 2012 Summer Research Conference, GA

College of Liberal Arts and Sciences (CLAS) at UF May 2012  
for 2012 Atlantic Causal Inference Conference, Baltimore, MD

Centre de recherches mathématiques (CRM) at University of Montreal May 2011  
for Workshop on Causal Inference in Health Research, Canada

Graduate Student Council (GSC) at UF  
for Workshop on Causal Inference in Health Research, Canada

May 2011

PRESENTATIONS INVITED TALKS

2018 Joint Statistical Meeting, Vancouver, Canada Aug 2018  
-*Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution*

The 3rd ISBA-EAC Conference , Seoul, Korea Jul 2018  
-*Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution*

2018 ICSA China Conference with the Focus on Data Science, Qingdao, Shangdong, China Jul 2018  
-*Bayesian nonparametric causal inference methods for health outcomes*

2018 IISA International Conference on Statistics, Gainesville, FL May 2018  
-*Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution*

Environmental Statistics Seminar, Harvard University, MA May 2018  
-*Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution*

Statistics and Probability Seminar Series, Boston University, MA Apr 2018  
-*Bayesian Methods for Multiple Intermediate Variables: Principal Stratification and Causal Mediation Analysis*

Biostatistics Student Association (BSA) Seminar, Boston University, MA Nov 2017  
-*A Bayesian Semiparametric Latent Variable Approach to Causal Inference*

Global Health Research Seminar Series, Boston University, MA Oct 2017  
-*Bayesian methods for Causal Inference and Mediation Analysis*

Environmental Statistics Seminar, Harvard University, MA May 2017  
-*Public Health Impact of Pollutant Emissions*

The 31st New England Statistics Symposium, Univ. of Connecticut, CT Apr 2017  
-*Public Health Impact of Pollutant Emissions*

Department of Biostatistics, Boston University, MA Feb 2017  
-*Bayesian Methods for Causal Mediation Analysis*

Department of Biostatistics and Bioinformatics, Duke University, NC Jan 2017  
-*Bayesian Methods for Causal Mediation Analysis*

Department of Biostatistics, Indiana University, Indianapolis, IN Jan 2017  
-*Bayesian Methods for Causal Mediation Analysis*

Div. of Sleep and Circadian Disorders, Brigham and Women's Hospital Nov 2016  
-*Bayesian Methods for Causal Mediation Analysis*

P01 Retreat, Harvard University - <i>Bayesian Latent Mediation Model</i>	Oct 2016
Department of Statistics, SungKyunKwan University, South Korea - <i>Bayesian Methods for Multiple Intermediate Variables: Principal Stratification and Causal Mediation Analysis</i>	Apr 2016
Environmental Statistics Seminar at Harvard Biostatistics - <i>Bayesian Methods for Multiple Mediators: Principal Stratification and Causal Mediation Analysis of Power Plant Emission Controls</i>	Sep 2015
2015 Atlantic Causal Inference Conference, Philadelphia, PA - <i>A Bayesian Approach to the Estimating Causal Effect of Air Quality Regulations with Multiple Mediators</i>	May 2015
Department of Biostatistics, Harvard School of Public Health - <i>Longitudinal causal mediation analysis for behavioral trials</i>	Dec 2013
Joint meeting of the IASC satellite conference for the 59th ISI WSC and the 8th conference of the ARS of the IASC, South Korea - <i>Marginal structural models for causal effects of higher education rates on cancer mortalities</i>	Aug 2013

#### TOPIC-CONTRIBUTED TALKS

2017 Joint Statistical Meeting, Baltimore, MD (Missed) - Biometrics Section Award Presentation : <i>Bayesian Methods for Multiple Intermediate Variables: Principal Stratification and Causal Mediation Analysis</i>	Aug 2017
2016 Joint Statistical Meeting, Chicago, IL - <i>Bayesian Semiparametric Latent Mediation Model</i>	Aug 2016
2014 Joint Statistical Meeting, Boston, MA - <i>A Bayesian approach to the causal effect of multiple mediators with sensitivity analysis</i>	Aug 2014

#### CONTRIBUTED TALKS

2017 ENAR Meeting, DC - <i>Bayesian Latent Mediation Model</i>	Mar 2017
2016 ENAR Meeting, Austin, TX - <i>Bayesian Methods for Multiple Intermediate Variables</i>	Mar 2016
P01 retreat at Harvard Biostatistics - <i>Bayesian Approach to Estimating the Causal Effect of Air Quality Regulations with Multiple Mediators</i>	Oct 2015
Bayesian Causal Inference Group Seminar at Harvard Biostatistics - <i>Bayesian semiparametric latent mediation model</i>	Jun 2015
Bayesian Causal Inference Group Seminar at Harvard Biostatistics - <i>Bayesian Causal Inference with Multiple Mediators</i>	Jan 2015
Bayesian Causal Inference Group Seminar at Harvard Biostatistics - <i>Bayesian Longitudinal Mediation Analysis</i>	Sep 2014

Acid Rain Program Group Seminar at Harvard <i>-Causal Inference with Interference</i>	Sep 2014, Feb 2015
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2015 ENAR Meeting, Miami, FL <i>-Bayesian semiparametric latent mediation model</i>	Mar 2015
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2014 ENAR Meeting, Baltimore, MD <i>-Longitudinal causal mediation analysis for behavioral trials</i>	Mar 2014
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2013 Joint Statistical Meeting, Montreal, Canada <i>-Bayesian inference for longitudinal mediation analysis</i>	Aug 2013
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POSTER PRESENTATIONS

2015 International Health Policy Statistics Conference, Providence, RI <i>-The public health impact of air quality regulations through change in ambient PM2.5</i>	Oct 2015
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2015 Atlantic Causal Inference Conference, Philadelphia, PA <i>-Bayesian semiparametric latent mediation model</i>	May 2015
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2013 Atlantic Causal Inference Conference, Boston, MA <i>-Bayesian inference for longitudinal mediation analysis</i>	May 2013
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2012 SRCOS Summer Research Conference, GA <i>-A Bayesian approach to the causal effect of multiple mediators</i>	Jun 2012
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2012 Atlantic Causal Inference Conference, Baltimore, MD <i>-A Bayesian approach to the causal effect of multiple mediators</i>	May 2012
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Workshop on Causal Inference and Graphical Models, Winter Workshop 2012, University of Florida <i>-Bayesian inference for the causal effect of mediation with baseline covariates</i>	Jan 2012
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NSF Research Day, University of Florida <i>-Bayesian inference for the causal effect of mediation with baseline covariates</i>	Oct 2011
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Workshop on Causal Inference in Health Research, CRM, University of Montreal, Canada <i>-Bayesian inference for the causal effect of mediation with baseline covariates</i>	May 2011
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PROFESSIONAL  
SERVICE

REVIEWER

*Journal of American Statistical Association (1 theory and methods; 1 applications and case studies), Statistics in Medicine (3), Bayesian Analysis (2), Journal of Royal Statistical Society: Series C (2), Journal of Causal Inference (2), Statistica Sinica (1), Annals of Applied Statistics (1), Biostatistics (1), BMJ Open (1), BMC Medical Research Methodology (1), Computational Statistics and Data Analysis (1)*

PROFESSIONAL SOCIETY

Elected Member of ENAR Council for Emerging and New Statisticians. 2014 - 2016

CONFERENCE ORGANIZATION

Session Organizer : Invited Sessions at JSM (2018), Topic-contributed sessions at JSM (2016, 2017), Invited Session at ACIC (2018)

Session Chair : ENAR (2015), JSM (2016)

Others: Judge of 2014 ENAR spring meeting RAB poster competition.

DEPARTMENTAL SERVICE	PHD COMMITTEES	
	Kevin Cummiskey (Harvard Biostatistics, In progress). Advisor: Corwin M. Zigler	
	QUAL EXAMINER	
	Chloe Kim (Boston University Environmental Health, In progress). Advisor: Michael McClean	
	OTHER SERVICES	
	Co-Organizer, Epidemiology+Biostatistics Joint Seminar Series, Boston University 2018	
	Co-Organizer, Seminar Series, Department of Biostatistics, Boston University 2017 - 2018	
	Co-Chair, Course Development Task Force (Topics in Causal Inference), Department of Biostatistics, Boston University 2018	
	Convener, PhD Program Review Committee, Department of Biostatistics, Boston University 2018	
TEACHING EXPERIENCE	INSTRUCTOR	Spring 2018
	BS730 - Introduction to Statistical Computing	
	Teaching core statistical concepts and computing skills with R	
	Department of Biostatistics, Boston University	
	POSTDOC MENTOR	Summer 2017
	6 weeks mentoring of summer project participants (Pipelines into Biostatistics)	
	Department of Biostatistics, Harvard T. H. Chan School of Public Health	
	POSTDOC MENTOR	Summer 2016
	6 weeks mentoring of summer project participants (Pipelines into Biostatistics)	
	Department of Biostatistics, Harvard T. H. Chan School of Public Health	
	GUEST LECTURER	Fall 2014
	Causal Mediation Analysis (2 hours) in BIO 249 (Bayesian Methodology in Biostatistics)	
	Department of Biostatistics, Harvard T. H. Chan School of Public Health	
	GUEST LECTURER	Spring, Fall 2013
	2 hour BUGS tutorial in the course SSC 384.7 (spring)	
	1 hour BUGS tutorial in the course SSC 383C (Fall)	
	Division of Statistics and Scientific Computation, The University of Texas at Austin	
	LAB-INSTRUCTOR	Fall 2008, Spring 2009
	STA 2023 - Introduction to Statistics	
	Teaching lab sessions of the course 3 hours a week	
	Evaluation: 4.31/5 (Spring 2009), 4.38/5, 4.26/5, 4.35/5 (Fall 2008)	
	Department of Statistics, University of Florida	
	TEACHING ASSISTANT AT UF	Spring, Fall 2009
	STA 3032 - Engineering Statistics	
	STA 4210 - Regression Analysis	
	STA 4183 - Theory of Interest	
	ESI 6546 - Stochastic Modeling and Analysis (Grader)	
	TEACHING ASSISTANT AT COLUMBIA UNIVERSITY	Spring 2007
	W1211 - Introduction to Statistics (with Calculus)	

GRANT FUNDING    PENDING

NIH (PI: Sebastien Haneuse)                      \$337,221(requested)  
Adjustment of selection Bias in Secondary Analyses of Electronic Health Records  
Policies  
Role: **co-Investigator**

PENDING

EPA (PI: Antonella Zanobetti)                      \$81,149(requested)  
Built, Nature and Social Environmental Stressors on Asthma Development in Early  
Life Course  
Role: **co-Investigator**

FUNDED

NIH (PI: Jason Roy)                      \$344,001                      Sep 2014 - Aug 2018  
Non-Parametric Bayesian Methods of Causal Inference.  
Role: **PI on subcontract**, subcontract from University of Pennsylvania, 20% effort

FUNDED

NIH (PI: Corwin Zigler)                      \$397,344                      Sep 2015 - Aug 2020  
Causal Inference with Interference for Evaluating Air Quality Policies  
Role: **co-Investigator**, 60% effort

COMPUTING

STATISTICAL PROGRAMS (PACKAGES)

R, SAS, BUGS (WinBUGS, OpenBUGS), Stan, MATLAB, Minitab, E-views  
- SAS Certified Base Programmer for SAS 9 Credential                      May 2012  
- SAS Certified Advanced Programmer for SAS 9 Credential                      Sep 2012

PROGRAMMING LANGUAGES

Some experience in Python, C++

OPERATING SYSTEM

Unix, Linux, Windows

MISCELLANEOUS

Exam P pass, Society of Actuaries                      Mar 2011

REFERENCES

Corwin Zigler  
Assistant Professor                      Phone: 617-432-5014  
Department of Biostatistics                      E-mail: czigler@hsph.harvard.edu  
Harvard T. H. Chan School of Public Health

Michael Daniels  
Professor and Chair                      Phone: 512-471-4128  
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Professor  
Department of Integrative Biology  
Division of Statistics and Scientific Computation  
The University of Texas at Austin

Francesca Dominici  
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Senior Associate Dean for Research



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