

Chanmin Kim

CONTACT INFORMATION	801 Massachusetts Ave. CT303 Boston, MA 02118	617-638-5126 chanmink@bu.edu
RESEARCH INTERESTS	Bayesian nonparametric methods and Machine learning Causal modeling and Causal mechanism Policy Evaluation, Environmental statistics, and behavioral sciences	
CURRENT POSITION	Boston University , Department of Biostatistics, Boston, MA Assistant Professor of Biostatistics,	Sep 2017 -
EDUCATION / TRAINING	Harvard University , 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. University of Florida , 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. Columbia University in the City of New York , New York, NY M.A., Statistics May 2008 Sogang University , 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., Milbury, K., Cohen, L., 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 inference for causal effects of mediation, *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

Mahalingaiah, S., Lane, K.J., **Kim, C.**, Cheng, J., Hart, J., Impacts of Air Pollution on Gynecologic Disease: Infertility, Menstrual Irregularity, Uterine Fibroids, and Endometriosis: a Systematic Review and Commentary, *Current Epidemiology Reports*, 5(3), 197-204, 2018.

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.

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 Weight Loss Counseling: Two-Year Findings from the Rural LITE Trial, *Obesity*, 22, 2293-2300, 2014.

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., Henneman, L., Choirat, C. Zigler, C. M., Health Effects of Power Plant Emissions through Ambient Air Quality. submitted.

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_{2.5} Health Effects, submitted

Liu, Y., Wu, A. D., Hubley, A. M., **Kim, C.**, Chen, Y., Beliveau, A., Zumbo, B. D., Understanding Item Response Processes of CES-D from a Social-Cognitive Perspective via Bayesian Mixed Effects Models. Paper presented at the Annual meeting of the American Educational Research Association, New York, NY, April 13-17, 2018, submitted

Liu, Y., Besche, H., Beliveau, A., Zhang, X., Kroc, E., Stefan, M., Gutlerner, J., **Kim, C.**, Challenges from Modeling Open Online Assessment Data , submitted

PAPERS IN PREPARATION

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., Kerrie, N., Edwards, D. (order TBD), Modeling rater diagnostic skills in ordinal classification processes, 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) for SRCOS 2012 Summer Research Conference, GA	Jun 2012
College of Liberal Arts and Sciences (CLAS) at UF for 2012 Atlantic Causal Inference Conference, Baltimore, MD	May 2012
Centre de recherches mathématiques (CRM) at University of Montreal for Workshop on Causal Inference in Health Research, Canada	May 2011
Graduate Student Council (GSC) at UF for Workshop on Causal Inference in Health Research, Canada	May 2011

PRESENTATIONS INVITED TALKS

Graduate School of Public Health, Yonsei University, Seoul, Korea <i>-Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution</i>	Sep 2018
Graduate School of Future Strategy, KAIST, Daejeon, Korea <i>-Bayesian Methods for Causal Mediation: Causal Inference in the Analysis of Power Plant Emission Control Policies</i>	Aug 2018
2018 Joint Statistical Meeting, Vancouver, Canada <i>-Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution</i>	Aug 2018
The 3rd ISBA-EAC Conference , Seoul, Korea <i>-Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution</i>	Jul 2018
2018 ICSA China Conference with the Focus on Data Science, Qingdao, Shangdong, China <i>-Bayesian nonparametric causal inference methods for health outcomes</i>	Jul 2018
2018 IISA International Conference on Statistics, Gainesville, FL <i>-Bayesian longitudinal causal inference in the analysis of the public health impact of air pollution</i>	May 2018
Statistics and Probability Seminar Series, Boston University, MA <i>-Bayesian Methods for Multiple Intermediate Variables: Principal Stratification and Causal Mediation Analysis</i>	Apr 2018
Biostatistics Student Association (BSA) Seminar, Boston University, MA <i>-A Bayesian Semiparametric Latent Variable Approach to Causal Inference</i>	Nov 2017
Global Health Research Seminar Series, Boston University, MA <i>-Bayesian methods for Causal Inference and Mediation Analysis</i>	Oct 2017
Environmental Statistics Seminar, Harvard University, MA <i>-Public Health Impact of Pollutant Emissions</i>	May 2017
The 31st New England Statistics Symposium, Univ. of Connecticut, CT <i>-Public Health Impact of Pollutant Emissions</i>	Apr 2017

Department of Biostatistics, Boston University, MA - <i>Bayesian Methods for Causal Mediation Analysis</i>	Feb 2017
Department of Biostatistics and Bioinformatics, Duke University, NC - <i>Bayesian Methods for Causal Mediation Analysis</i>	Jan 2017
Department of Biostatistics, Indiana University, Indianapolis, IN - <i>Bayesian Methods for Causal Mediation Analysis</i>	Jan 2017
Div. of Sleep and Circadian Disorders, Brigham and Women's Hospital - <i>Bayesian Methods for Causal Mediation Analysis</i>	Nov 2016
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	Oct 2015

-*Bayesian Approach to Estimating the Causal Effect of Air Quality Regulations with Multiple Mediators*

Bayesian Causal Inference Group Seminar at Harvard Biostatistics Jun 2015
-*Bayesian semiparametric latent mediation model*

Bayesian Causal Inference Group Seminar at Harvard Biostatistics Jan 2015
-*Bayesian Causal Inference with Multiple Mediators*

Bayesian Causal Inference Group Seminar at Harvard Biostatistics Sep 2014
-*Bayesian Longitudinal Mediation Analysis*

Acid Rain Program Group Seminar at Harvard Sep 2014, Feb 2015
-*Causal Inference with Interference*

2015 ENAR Meeting, Miami, FL Mar 2015
-*Bayesian semiparametric latent mediation model*

2014 ENAR Meeting, Baltimore, MD Mar 2014
-*Longitudinal causal mediation analysis for behavioral trials*

2013 Joint Statistical Meeting, Montreal, Canada Aug 2013
-*Bayesian inference for longitudinal mediation analysis*

POSTER PRESENTATIONS

2015 International Health Policy Statistics Conference, Providence, RI Oct 2015
-*The public health impact of air quality regulations through change in ambient PM_{2.5}*

2015 Atlantic Causal Inference Conference, Philadelphia, PA May 2015
-*Bayesian semiparametric latent mediation model*

2013 Atlantic Causal Inference Conference, Boston, MA May 2013
-*Bayesian inference for longitudinal mediation analysis*

2012 SRCOS Summer Research Conference, GA Jun 2012
-*A Bayesian approach to the causal effect of multiple mediators*

2012 Atlantic Causal Inference Conference, Baltimore, MD May 2012
-*A Bayesian approach to the causal effect of multiple mediators*

Workshop on Causal Inference and Graphical Models, Jan 2012
Winter Workshop 2012, University of Florida
-*Bayesian inference for the causal effect of mediation with baseline covariates*

NSF Research Day, University of Florida Oct 2011
-*Bayesian inference for the causal effect of mediation with baseline covariates*

Workshop on Causal Inference in Health Research, May 2011
CRM, University of Montreal, Canada
-*Bayesian inference for the causal effect of mediation with baseline covariates*

PROFESSIONAL
SERVICE

REVIEWER

Journal of American Statistical Association (theory and methods; applications and case studies), Statistics in Medicine, Bayesian Analysis, Journal of Royal Statistical

Society: Series C, Journal of Causal Inference, Statistica Sinica, Annals of Applied Statistics, Biostatistics, BMJ Open, BMC Medical Research Methodology, Computational Statistics and Data Analysis, Biometrics

PROFESSIONAL SOCIETY

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

CONFERENCE ORGANIZATION

Session Organizer : Invited Session at ENAR (2019), Invited Session at JSM (2018),
Invited Session at ACIC (2018), Topic-contributed sessions at JSM (2016, 2017)
Session Chair : ENAR (2015), JSM (2016)
Others: Judge of 2014 ENAR spring meeting RAB poster competition.

DEPARTMENTAL SERVICE

PHD COMMITTEES

Kevin Cummiskey (Harvard Biostatistics, 2018). Advisor: Corwin M. Zigler

MS COMMITTEES

Amelia Williams (Boston University Epidemiology, 2018). Advisor: Kimberly Shea

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
Faculty Search Committee, Department of Biostatistics, Boston University 2018 -
2019
Co-Organizer, Causal Inference Seminar Series, Departments of Biostatistics + Mathematics
and Statistics, Boston University 2018-2019

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

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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
Associate 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: 352-262-9892
Andrew Banks Family Endowed Chair E-mail: daniels@ufl.edu
Department of Statistics
University of Florida

Jason Roy
Professor of Biostatistics Phone: 732-235-9168
Chair of Biostatistics and Epidemiology E-mail: jason.roy@rutgers.edu
Co-Director, Center for Causal Inference
Rutgers School of Public Health