

Chanmin Kim

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| CONTACT INFORMATION | 25-2, Sungkyunkwan-ro, Jongno-gu Seoul 03063, Korea | 02-760-0495 chanmin.kim@skku.edu |
| RESEARCH INTERESTS | Bayesian nonparametric methods and Machine learning Causal modeling and Causal mechanism Policy Evaluation, Environmental statistics, and behavioral sciences | |
| CURRENT POSITION | SungKyunKwan University , Department of Statistics, Seoul, Korea Assistant Professor of Statistics, | Jan 2020 - |
| | Boston University , Department of Biostatistics, Boston Adjunct Assistant Professor of Biostatistics, | Jan 2020 - |
| 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 | Assistant Professor Department of Biostatistics, Boston University, Boston, MA | Sep 2017 - Dec 2019 |
| | Advisory Committee Hyundai Motor Group, Seoul, Korea | Nov 2020 - Feb 2021 |
| | Postdoctoral Research Fellow 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. | Aug 2013 - Jul 2014 |
| | Research Assistant 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. | Jan 2010 - Jul 2013 |
| | Research Assistant Applied Statistics Center, Columbia University | Jan 2007 - Dec 2007 |
| | Employee, Samsung Electronics, South Korea - Worked at the HR headquarters of the Tele-Communication Business Division which is in charge of Samsung's cell phone business. | Jan 2006 - May 2006 |

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.

AWARDS

HONORS

Mitchell Prize, honorable mention (2nd place), ISBA Jun 2020
 - The Mitchell Prize is awarded in recognition of an “outstanding paper” that describes how a Bayesian analysis has solved an important applied problem. The Prize is jointly sponsored by the Section on Bayesian Statistical Science (SBSS) of the ASA, the International Society for Bayesian Analysis (ISBA), and the Mitchell Prize Founders’ Committee.

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 May 2011
 for Workshop on Causal Inference in Health Research, Canada

REFEREED

JOURNAL PUBLICATIONS

Publication in Statistical Methodology

Kim, C., Henneman, L., Choirat, C. Zigler, C. M., Health Effects of Power Plant Emissions through Ambient Air Quality, *Journal of the Royal Statistical Society: Series A*, 183(4), 1677-1703, 2020.

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; and awarded an honorable mention for the Mitchell Prize 2019, ISBA, The Annals of Applied Statistics*, 13(3), 1927-1956, 2019.

Kim, C., Deviance Information Criteria for Mixtures of Distributions, *Communications in Statistics - Simulation and Computation*, 2019, DOI:10.1080/03610918.2019.1617878.

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*, 18(1), 2-26, 2019.

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

Peer, K., Adams W. G., Legler, A., Sandel, M., Levy, J., Boynton-Jarrett, R., **Kim, C.**, Leibler, J. H., Fabian, M. P., Developing and evaluating a pediatric asthma severity computable phenotype derived from electronic health records, *The Journal of Allergy and Clinical Immunology*, In print.

Nguyen, M., Feeney, T., **Kim, C.**, Drake, T., Mitchell, S., Bednarczyk, M., Sanchez, S., Patient-Level Factors Influencing Palliative Care Consultation at a Safety-Net Urban Hospital, *American Journal of Hospice and Palliative Medicine*, In print.

Liu, Y., Beliveau, A., Besche, H., Wu, A., Zhang, X., Stefan, M., Gutlerner, J., **Kim, C.**, Bayesian Mixed Effects Model and Data Visualization for Understanding Item Response Time and Response Order in Open Online Assessment, *Frontiers in Education, section Assessment, Testing and Applied Measurement*, In print.

Nguyen, M., Feeney, T., **Kim, C.**, Drake, T., Mitchell, S., Bednarczyk, M., Sanchez, S., Differential Utilization of Palliative Care Consultation between Medical and Surgical Services, *American Journal of Hospice and Palliative Medicine*, 37(4), 250-257, 2020.

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., Zigler, C. M., Daniels, M. J., Choirat, C., Roy, J. A., Bayesian Longitudinal Causal Inference in the Analysis of the Public Health Impact of Pollutant Emissions [arXiv].

Kim, C., Lin, X., Nelson, K., Measuring Rater Bias in Diagnostic Tests with Ordinal Ratings, under the 2nd round revision.

Kim, C., Bayesian Additive Regression Trees in Spatial Data Analysis with Sparse Observations, under revision.

Cummiskey, K., **Kim, C.**, Choirat, C., Schwartz, J., Zigler, C. A Source-Oriented Approach to Coal Combustion PM_{2.5} Health Effects [arXiv], under revision.

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., Daniels, M. J., Bayesian Nonparametric Method for Causal Effect Heterogeneity, In preparation

Kim, C., Li, Y., Bayesian Nonparametric Method for Causal Mediation Analysis in Zero-inflated Data, In preparation

Kim, C., Nelson, K., Enhanced Method for Measuring Rater Bias in Diagnostic Tests with Ordinal Ratings, In preparation

Kim, C., Zigler, C., Confounder Selection via Bayesian Additive Regression Trees, 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.

BayesODT, an R package. Implements Bayesian hierarchical model to measure rater bias for ordinal classification processes. Available in [lit777.github.io](https://github.com/lit777).

PRESENTATIONS INVITED TALKS

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| Working Group on Causal Inference and Machine Learning, Harvard University, Jan 2021 | |
| Invited Section for Bayesian Statistics, The Korean Statistical Society, | Dec 2020 |
| Department of Statistics, SungKyunKwan University, South Korea | Oct 2020 |
| Department of Statistics, Ewha University, South Korea | Aug 2020 |
| 10th Bernoulli-IMS World Congress in Probability and Statistics, Seoul, Korea, Aug 2020 (postponed) | |
| 4th International Conference on Econometrics and Statistics, Seoul, Korea, 2020 (postponed) | Jul |
| Bayesian Causal Inference Workshop, Ohio State University, OH (Cancelled) 2019 | Jun |
| Atlantic Causal Inference Conference, McGill University, Canada | May 2019 |
| Institute for Computational and Experimental Research in Mathematics, Brown University, RI | Jan 2019 |
| Graduate School of Future Strategy, KAIST, Daejeon, Korea | Aug 2018 |
| 2018 Joint Statistical Meeting, Vancouver, Canada | Aug 2018 |
| The 3rd ISBA-EAC Conference , Seoul, Korea | Jul 2018 |
| 2018 ICSA China Conference with the Focus on Data Science, Qingdao, Shangdong, China | Jul 2018 |
| 2018 IISA International Conference on Statistics, Gainesville, FL | May 2018 |
| Statistics and Probability Seminar Series, Boston University, MA | Apr 2018 |
| Biostatistics Student Association (BSA) Seminar, Boston University, MA | Nov 2017 |
| Global Health Research Seminar Series, Boston University, MA | Oct 2017 |
| Environmental Statistics Seminar, Harvard University, MA | May 2017 |
| The 31st New England Statistics Symposium, Univ. of Connecticut, CT | Apr 2017 |
| Department of Biostatistics, Boston University, MA | Feb 2017 |
| Department of Biostatistics and Bioinformatics, Duke University, NC | Jan 2017 |
| Department of Biostatistics, Indiana University, Indianapolis, IN | Jan 2017 |
| Div. of Sleep and Circadian Disorders, Brigham and Women's Hospital | Nov 2016 |
| P01 Retreat, Harvard University | Oct 2016 |

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| Department of Statistics, SungKyunKwan University, South Korea | Apr 2016 |
| Environmental Statistics Seminar at Harvard Biostatistics | Sep 2015 |
| 2015 Atlantic Causal Inference Conference, Philadelphia, PA | May 2015 |
| Department of Biostatistics, Harvard School of Public Health | 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 | Aug 2013 |

TOPIC-CONTRIBUTED TALKS

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| 2017 Joint Statistical Meeting, Baltimore, MD (Missed) | Aug 2017 |
| - Biometrics Section Award Presentation : <i>Bayesian Methods for Multiple Intermediate Variables: Principal Stratification and Causal Mediation Analysis</i> | |
| 2016 Joint Statistical Meeting, Chicago, IL | Aug 2016 |
| 2014 Joint Statistical Meeting, Boston, MA | Aug 2014 |

CONTRIBUTED TALKS

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| 2017 ENAR Meeting, DC | Mar 2017 |
| 2016 ENAR Meeting, Austin, TX | Mar 2016 |
| P01 retreat at Harvard Biostatistics | Oct 2015 |
| Bayesian Causal Inference Group Seminar at Harvard Biostatistics | Jun 2015 |
| Bayesian Causal Inference Group Seminar at Harvard Biostatistics | Jan 2015 |
| Bayesian Causal Inference Group Seminar at Harvard Biostatistics | Sep 2014 |
| Acid Rain Program Group Seminar at Harvard | Sep 2014, Feb 2015 |
| 2015 ENAR Meeting, Miami, FL | Mar 2015 |
| 2014 ENAR Meeting, Baltimore, MD | Mar 2014 |
| 2013 Joint Statistical Meeting, Montreal, Canada | Aug 2013 |

POSTER PRESENTATIONS

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| 2015 International Health Policy Statistics Conference, Providence, RI | Oct 2015 |
| 2015 Atlantic Causal Inference Conference, Philadelphia, PA | May 2015 |
| 2013 Atlantic Causal Inference Conference, Boston, MA | May 2013 |
| 2012 SRCOS Summer Research Conference, GA | Jun 2012 |

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| 2012 Atlantic Causal Inference Conference, Baltimore, MD | May 2012 |
| Workshop on Causal Inference and Graphical Models, Winter Workshop 2012, University of Florida | Jan 2012 |
| NSF Research Day, University of Florida | Oct 2011 |
| Workshop on Causal Inference in Health Research, CRM, University of Montreal, Canada | May 2011 |

PROFESSIONAL
SERVICE

REVIEWER (Publons)

Journal of American Statistical Association (theory and methods; applications and case studies), Biometrics, Statistics in Medicine, Bayesian Analysis, Journal of Royal Statistical Society: Series C, Journal of Causal Inference, Statistica Sinica, Annals of Applied Statistics, Biostatistics, Epidemiologic Methods, BMJ Open, BMC Medical Research Methodology, Computational Statistics and Data Analysis, The Canadian Journal of Statistics, BMC Public Health, The International Journal of Biostatistics, MRC grant proposal, HEI grant proposal

PROFESSIONAL SOCIETY

Elected Member of ENAR Council for Emerging and New Statisticians. 2014 - 2016
Members of ENAR, ASA, ISBA

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), Invited Session at ENAR (2020)
Others: Judge of 2014 ENAR spring meeting RAB poster competition.

DEPARTMENTAL
SERVICE

MS STUDENTS

Youngho Bae (SKKU), expected Winter 2021
Doyoung Kim (SKKU), expected Winter 2021
Sangho Park (SKKU), expected Winter 2021

PHD COMMITTEES

Kevin Cummiskey (Harvard Biostatistics, 2018). Advisor: Corwin M. Zigler
Aya Mitani (Boston Univ. Biostatistics, 2019). Advisor: Kerrie Nelson
Daniel Nguyen (Boston Univ. Environmental Health). Advisor: Junenette Peters
Komal Basra (Boston Univ. Environmental Health). Advisor: Patricia Fabian
Xiaoyan Liu (Boston Univ. Biostatistics). Advisor: Gheorghe Doros

MS COMMITTEES

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

QUAL EXAMINER

Chloe Kim (Boston University Environmental Health, In progress). Advisor: Michael McClean
Komal Basra (Boston University Environmental Health, 2019). Advisor: Patricia Fabian

OTHER SERVICES

Co-Organizer, Epidemiology+Biostatistics Joint Seminar Series, Boston University 2018

Co-Organizer, Seminar Series, Department of Biostatistics, Boston University 2017 - 2019
 Co-Chair, Course Development Task Force (Topics in Causal Inference), Department of Biostatistics, Boston University 2018 - 2019
 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-
 Biostatistics Program Advisory Committee (BPAC), Departments of Biostatistics, Boston University 2019-
 MA/PhD Admission Committee, Departments of Biostatistics, Boston University 2019-

TEACHING
EXPERIENCE

INSTRUCTOR

STA2016 - Intro. to Statistical Programming (Undergrad) Fall 2020
 Department of Statistics, SungKyunKwan University

STA5004 - Advanced Categorical Data Analysis (Grad) Fall 2020
 Department of Statistics, SungKyunKwan University

STA5030 - Bayesian Statistics (Grad) Spring 2020
 Department of Statistics, SungKyunKwan University

BS730 - Introduction to Statistical Computing Spring 2018, Spring 2019
 Teaching core statistical concepts and computing skills with R
 Department of Biostatistics, Boston University

BS901 - Directed Studies in Biostatistics Summer 2019
 Analyzing datasets using nonparametric methods
 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 2018, Spring 2019, Fall 2019
 Causal Mediation Analysis (3 hours) in BS852 (Bayesian Methodology in Biostatistics)
 Department of Biostatistics, Boston University 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 ACTIVE

NRF (PI: Chanmin Kim) Jun 2020 - Feb 2023
Bayesian non-parametric methods for estimating causal effect heterogeneity.
Role: **Principal Investigator**

COMPLETED

US-EPA (PI: Corwin Zigler) Sep 2016 - Aug 2020
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.
Role: **PI on subcontract**, subcontract from Harvard University

NIH (PI: Kerrie Nelson) Feb 2018 - Aug 2022
Improving Accuracy and Reliability in Cancer Screening Tests
Role: **Biostatistician**

NIH (PI: David Sherr) Sep 2012 - Aug 2020
Superfund Research Program at Boston University
Role: **Biostatistician**

NIH (PI: Lauren Wise and Elizabeth Hatch) Jan 2019 - Oct 2023
A Preconception Cohort Study of Environmental Chemicals, Fertility, and Miscarriage
Role: **Biostatistician**

NIH (PI: Debbie Cheng) Sep 2016 - Aug 2021
Biostatistics and Data Management (BDM) Core - URBAN ARCH Consortium
Role: **Biostatistician**

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

NIH (PI: Corwin Zigler) Sep 2015 - Aug 2020
Causal Inference with Interference for Evaluating Air Quality Policies
Role: **Investigator**

NIH (PI: Kerrie Nelson)
Modeling Agreement in Cancer Diagnostic Tests
Role: **Biostatistician**

Jan 2014 - Dec 2019

COMPUTING

STATISTICAL PROGRAMS (PACKAGES)

R, SAS, Stan, BUGS (WinBUGS, OpenBUGS), MATLAB

- 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

Department of Biostatistics

Harvard T. H. Chan School of Public Health

Phone: 617-432-5014

E-mail: czigler@hsph.harvard.edu

Michael Daniels

Professor and Chair

Andrew Banks Family Endowed Chair

Department of Statistics

University of Florida

Phone: 352-262-9892

E-mail: daniels@ufl.edu

Jason Roy

Professor of Biostatistics

Chair of Biostatistics and Epidemiology

Co-Director, Center for Causal Inference

Rutgers School of Public Health

Phone: 732-235-9168

E-mail: jason.roy@rutgers.edu