

CONTACT INFORMATION Department of Biostatistics University of Pittsburgh A734 Crabtree, 130 De Soto Street Pittsburgh, PA 15261, USA *Phone:* 412-383-6812 *Fax:* 412-624-2183 *E-mail:* crkang@pitt.edu

RESEARCH INTERESTS Personalized/precision medicine, statistical methods in biomarker evaluation for treatment selection and risk prediction, mobile health, statistical learning, empirical processes, statistical methods in HIV vaccine efficacy trials, meta-analysis, schizophrenia and human brain development, comparative effectiveness research, longitudinal-clustered data analysis, and mediation analysis

POSITIONS **Department of Biostatistics, Graduate School of Public Health University of Pittsburgh**
Assistant Professor January, 2015 - Present
Visiting assistant professor September, 2014 - December, 2014

Comparative Effectiveness Research Center (CERC), University of Pittsburgh
Biostatistician March, 2015 - July, 2016

Hepatitis B Research Network (HBRN) Data Coordinating Center, University of Pittsburgh
Biostatistician September, 2014 - May, 2015

EDUCATION & TRAINING **Fred Hutchinson Cancer Research Center, Seattle, WA**
 Vaccine and Infectious Disease Division/ Public Health Sciences Division
Postdoctoral Research Fellow September, 2011 - August, 2014
 Supervisor: Dr. Ying Huang and Dr. Holly Janes

The University of North Carolina at Chapel Hill, Chapel Hill, NC
 PhD, Biostatistics, August 2011

- Thesis Topic: *New statistical learning methods for chemical toxicity data analysis*
- Adviser: Professor and Chair Michael R. Kosorok

Ewha Womans University, Seoul, South Korea.
 MS, Statistics/ BS, Statistics

RESEARCH EXPERIENCE **University of North Carolina, Department of Biostatistics, Chapel Hill, NC**
Graduate Research Assistant
 Supervisor: Professor and Chair Michael R. Kosorok

University of North Carolina, UNC Schizophrenia Research Center, Chapel Hill, NC
Graduate Research Assistant
 Supervisor: Professor Robert M. Hamer, John H. Gilmore, MD

University of North Carolina, North Carolina Center for Children’s Healthcare Improvement (NC CCHI), Chapel Hill, NC
Graduate Research Assistant
 Supervisor: Peter Margolis, MD, PhD

PEER REVIEWED
PUBLICATIONS:

Published:

1. Gilmore, J. H., Lin, W., Corouge, I., Vetsa, YSK, Smith, J.K., **Kang, C.**, Gu, H., Hamer, R. M., Lieberman, J. A. and Gerig, G. Early postnatal development of corpus callosum and corticospinal white matter assessed with quantitative tractography (2007). *American Journal of Neuroradiology*. 28:1789-1795.
2. Gilmore, J. H., Smith, L. C., Wolfe, H. M., Hertzberg, B. S., Smith, J. K., Chescheir, N. C., Evans, D. D., **Kang, C.**, Hamer, R. M., Lin, W. and others. Prenatal mild ventriculomegaly predicts abnormal development of the neonatal brain (2008). *Biological Psychiatry*. 64:1069–1076.
3. Knickmeyer, R. C., Gouttard, S., **Kang, C.**, Evans, D., Wilber, K., Smith, J. K., Hamer, R. M., Lin, W., Gerig, G. and Gilmore, J. H. A structural MRI study of human brain development from birth to 2 years (2008). *Journal of Neuroscience*. 28(47):12176–12182.
4. Mukherjee, N., **Kang, C.**, Wolfe, H. M., Hertzberg, B. S., Smith, J. K., Lin, W., Gerig, G., Hamer, R. M. and Gilmore, J. H. Discordance of prenatal and neonatal brain development in twins (2009). *Early human development*. 85:171–175.
5. Knickmeyer, R. C., Styner, M., Short, S. J., Lubach, G. R., **Kang, C.**, Hamer, R., Coe, C. L. and Gilmore, J. H. Maturational Trajectories of Cortical Brain Development through the Pubertal Transition: Unique Species and Sex Differences in the Monkey Revealed through Structural Magnetic Resonance Imaging (2010). *Cerebral Cortex*. 20(5):1053–1063, doi:10.1093/cercor/bhp166
6. Gilmore, J. H., **Kang, C.**, Evans, D. D., Wolfe, H. M., Smith, M. D., Lieberman, J. A., Lin, W., Hamer, R. M., Styner, M. and Gerig, G. Prenatal and Neonatal Brain Structure and White Matter Maturation in Children at High Risk for Schizophrenia (2010). *American Journal of Psychiatry*. 167(9): 1083–1091, doi:10.1176/appi.ajp.2010.09101492
7. Rebecca C. Knickmeyer, **Chaeryon Kang**, Sandra Woolson, Keith J. Smith, Robert M. Hamer, Weili Lin, Guido Gerig, Martin Styner, John H. Gilmore. Twin-Singleton Differences in Neonatal Brain Structure (2011). *Twin research and human genetics: the official journal of the International Society for Twin Studies*. 14(3):268-276, doi:10.1375/twin.14.3.268
8. **Kang, C.**, Zhu, H., Wright, F. A., Zou, F., and Kosorok, M. R. The Interactive Decision Committee for Chemical Toxicity analysis (2012). *Journal of Statistical Research*, 46(2) (Special Issue on Biostatistics) :157–186.
(<http://publications.isrt.ac.bd/index.php/jsr/article/view/8/7>)
9. **Kang, C.**, Qaqish, B., Monaco, J., Sheridan, S., and Cai, J. Kappa statistic for clustered dichotomous responses from physicians and patients (2013). *Statistics in Medicine*, 32 (21): 3700-3719 doi:10.1002/sim.5796
10. **Chaeryon Kang**, Holly Janes, and Ying Huang. Combining biomarkers to optimize patient treatment recommendation (2014). *Biometrics*, 70(3): 695-707. (**with discussion**)
11. **Chaeryon Kang**, Ying Huang, and Christopher J. Miller. A discrete time survival model with random effects for designing and analyzing repeated low-dose challenge experiments (2015). *Biostatistics*, 16(2): 295–310. doi:10.1093/biostatistics/kxu040
12. Jane N. Kogan, James Schuster, Cara Nikolajski, Patricia Schake, Tracy Carney, Sally C. Morton, **Chaeryon Kang**, and Charles F. Reynolds III. Patient-Centered Comparative Effectiveness Study of Optimal Health Interventions for Adults with Serious Mental Illness: Study Design and Implementation (2017). *Clinical Trials*, 14 (1): 5–16. doi:10.1177/1740774516670895'

13. Faina Linkov, Amin Sanei-Moghaddam, Robert P. Edwards, Paula J. Lounder, Naveed Ismail, Sharon L. Goughnour, **Chaeryon Kang**, Suketu M. Mansuria, and John T. Comerci. Implementation of Hysterectomy Pathway: Impact on Complications (2017). *Women's Health Issues*, 27(4):493-498. doi:10.1016/j.whi.2017.02.004
14. Sara M. Clifton, **Chaeryon Kang**, Jingyi Jessica Li, Qi Long, Nirmish Shah, and Daniel M. Abrams. Hybrid statistical and mechanistic mathematical model guides mobile health intervention for chronic pain (2017). *Journal of Computational Biology*, 24(7):675-688. doi:10.1089/cmb.2017.0059
15. Charles R. Jonassaint, **Chaeryon Kang**, Jude C. Jonassaint, Laura De Castro, Daniel M. Abrams, Jingyi Jessica Li, Jason Mao, Yimeng Jia, Qi Long, and Nirmish Shah. Understanding Patterns and Correlates of Daily Pain using the Sick Cell Disease Mobile Application to Record Symptoms via Technology (SMART)(2018). *British Journal of Haematology*, 183(2): 306-308. doi:10.1111/bjh.14956
16. Amin Sanei-Moghaddam, **Chaeryon Kang**, Robert P. Edwards, Paula J. Lounder, Naveed Ismail, Sharon L. Goughnour, Suketu M. Mansuria, John T. Comerci, and Faina Linkov. Racial and Socioeconomic Disparities in Hysterectomy Route for Benign Conditions (2018). *Journal of Racial and Ethnic Health Disparities*, 5(4): 758-765. doi:https://doi.org/10.1007/s40615-017-0420-7
17. **Chaeryon Kang**, Holly Janes, Parvin Tajik, Henk Groen, Ben W. J. Mol, Corine M. Koopmans, Kim Broekhuijsen, Eva Zwertbroek, Maria G. van Pampus, and Maureen T M Franssen. Evaluation of biomarkers for treatment selection using individual participant data from multiple clinical trials (2018). *Statistics in Medicine*, 37(9):1439-1453. doi:https://doi.org/10.1002/sim.7608
18. James Schuster, Cara Nikolajski, Jane N. Kogan, Patricia Schake, **Chaeryon Kang**, Tracy Carney, and Charles F. Reynolds III. A Payer-Guided Approach to Widespread Diffusion of Behavioral Health Homes in Real-World Settings (2018). *Health Affairs*, 37(2):248-256 (invited for the special issue on diffusion of innovation) doi:https://doi.org/10.1377/hlthaff.2017.1115
19. Stillman, C.M., Donahue, P.T., Williams, M.F., Callas, M., Lwanga, C., Brown, C., Wollam, M. E., Jedrzejewski, M.K., **Kang, C.**, Erickson, K.I. Weight loss outcomes in a pilot trial of African Dance in older African Americans (2018). *Obesity*, 26(12):1893-1897. doi:https://doi.org/10.1002/oby.22331
20. Erickson, K. I., Grove, G., Burns, J. M., Hillman, C., Kramer, A. F., McAuley, E., Vidoni, E. D., Becker, J., Butters, M., Grey, K., Huang, H., Jakicic, J., **Kang, C.**, Klunk, W., Lee, P., Marsland, A., Mettenburg, J., Rogers, R., Stillman, C., Sutton, B. , Szabo-Reed, A., Verstynen, T., Watt, J., Weinstein, A., Wollam, M. Investigating Gains in Neurocognition in an Intervention Trial of Exercise (IGNITE): Protocol (2019). *Contemporary Clinical Trials*, Vol. 85, October 2019, 105832. doi:https://doi.org/10.1016/j.cct.2019.105832.
21. Xiaotian Gao*, Dong, Xinxin, **Chaeryon Kang**, and Abdus S. Wahed. Inference on Mean Quality-adjusted Lifetime Using Joint Models for Continuous Quality of Life Process and Time to Event (2019). *Journal of Statistical Research*, 2019, Vol. 53, No. 2, p. 165-189.
22. Charles R. Jonassaint, **Chaeryon Kang**, Kemar Prussien, Janet Yarboi and Maureen Sanger. Feasibility of Implementing Mobile Technology-Delivered Mental Health Treatment in Routine Adult Sick Cell Disease Care (2020). *Translational Behavioral Medicine*, Vol. 10, Issue 1, February 2020. iby107. doi:https://doi.org/10.1093/tbm/iby107
23. Stillman, C.M., Jakicic, J. , Rogers, R., Alfini, A. J., Smith, C., Watt, J., **Kang, C.**, and Erickson, K. Changes in cerebral perfusion following a 12-month exercise and diet intervention (2020). *Psychophysiology* doi:10.1111/psyp.13589
24. Peven, J. C., Jakicic, J. M., Rogers, R., Lesnovskaya, A., Erickson, K. I., **Kang, C.** Zhou, X. *, Porter, A., Donofry, S. D., Watt, J.C., and Stillman, C. M. The effects of a 12-month

- weight loss intervention on cognitive outcomes in adults with overweight and obesity (2020). *Nutrients*, Vol.12, No.10, p. 2988. doi:<https://doi.org/10.3390/nu12102988>
25. Eric D. Vidoni, Amanda Szabo-Reed, **Chaeryon Kang**, Ashley R. Shaw, Jaime Perales-Puchalt, George Grove, Morgan Hamill, Donovan Henry, Jeffrey M. Burns, Charles Hillman, Arthur F. Kramer, Edward McAuley, and Kirk I. Erickson. The IGNITE Trial: Participant Recruitment Lessons Prior to SARS-CoV-2 (2020). *Contemporary Clinical Trials*, Vol.20, December 2020, p.100666. doi:<https://doi.org/10.1016/j.conctc.2020.100666>
 26. Kristine A. Wilckens, Chelsea M. Stillman, Aashna M. Waiwood, **Chaeryon Kang**, Regina L. Leckie, Jamie C. Peven, Jill E. Foust, Scott H. Fraundorf, Kirk I. Erickson. Move it or lose it: Exercise interventions increase hippocampal volume (2020, accepted by *Hippocampus*).
 27. MacDonald-Wilson, K. L., Williams, K., Nikolajski, C., McHugo, G., **Kang, C.**, Deegan, P., Carpenter-Song, E., and Kogan, J. Promoting Collaborative Psychiatric Care Decision-Making in Community Mental Health Centers: Insights from a Patient-Centered Comparative Effectiveness Randomized Trial (2021). *Psychiatric Rehabilitation Journal*, Vol. 4, No. 1, p.11-21 doi:<https://doi.org/10.1037/prj0000455>.
 28. Kearney, S., Nikolajski, C., Williams, K., Park, M., Kraemer, K., Landsittel, D., **Kang, C.**, Kogan, J., Malito, A., and Schuster, J. Stakeholder Impact on the Implementation of Integrated Care: Opportunities and Barriers to Consider for Patient-Centered Outcomes Research (2021). *Contemporary Clinical Trials*, Vol. 101, p. 106256, doi:<https://doi.org/10.1016/j.cct.2020.106256>
 29. Donahue, P. T. , Grove,G., Stillman, C., **Kang,C.**, Burns,J., Hillman, C.H., Kramer, A.F., McAuley, E., Vidoni,E., and Erickson, K.I. Estimating the Financial Costs Associated with a Phase III, Multi-site Exercise Intervention Trial: The IGNITE Study (2021). *Contemporary Clinical Trials*, Vol.105, p.106401 doi:<https://doi.org/10.1016/j.cct.2021.106401>
 30. Aghjayan, S.L., Bournias, T., **Kang, C.**, Zhou, X.*, Stillman, C.M., Donofry, S.D., Kamarck, T.W., Marsland, A.L., Voss, M. W., Fraundorf, S.H., Erickson, K.I. Aerobic Exercise Improves Episodic Memory in Late Adulthood: A meta-analysis (2022). *Communications Medicine*, 2022 Feb 17. 2(15). doi:<https://doi.org/10.1038/s43856-022-00079-7>.
 31. Orr, B., Mahdi,H., Fang, Y., Strange, M., Uygun, I., Rana, M., Zhang, L., Pusateri, A., Elishaev, E., **Kang, C.**, Tseng, G., Gooding, W., Edwards, R. P., Kalinski, P., and Vlad, A. M. Chemokine-targeting loco-regional chemo-immunotherapy combination for recurrent, platinum sensitive ovarian cancer induces CXCR3 ligands and markers of type 1 immunity (2022). *Clinical Cancer Research*, May 13;28(10):2038-2049.

Submitted:

1. **Chaeryon Kang** and Ying Huang. Identification of immune response combinations associated with heterogeneous infection risk in the immune correlate analysis of HIV vaccine studies (2022, revision under review).
2. **Chaeryon Kang**, Di Zhang*, James Schuster, Jane Kogan, Cara Nikolajski, and Charles F. Reynolds. Bias-corrected and doubly robust inference for the three-level longitudinal cluster-randomized trials with missing continuous outcomes and small number of clusters: application to a study for adults with serious mental illnesses (2022, submitted).
3. Wang, Xianling, **Kang, Chaeryon**, Binion, David, and Tang, Gong. Regression Analysis with a Hierarchically Missing Covariate: Application to the Electronic Health Records Data. (2021, submitted).
4. Raine, L.B, Erickson, K.I., Grove, G. , Watrous, J.N.H., McDonald, K., **Kang, C.**, Jakicic, J.M., Forman, D.E., Kramer, A.F., Burns, J., Vidoni, E., McAuley, E., and Hillman, C.H. The Influence of the COVID-19 Pandemic on Cardiorespiratory Fitness Levels of Older Adults and Children. (2021, submitted).

5. Wei, Y., Bo, N., Zeng, L., **Kang, C.**, and Ding, Y. A Meta-Learner Framework to Estimate Individualized Treatment Effects for Survival Outcomes. (2022, submitted).
 6. Stillman, C.M., Jakicic, J.M., Rogers, R.J., Roecklein, K.A., Watt, J.C., Barrett, G., **Kang, C.**, and Erickson, K.I. The Relationship Between FTO Polymorphism rs993609 and Resting Cerebral Blood Flow in A Midlife Sample with Overweight and Obesity. (2022, submitted).
 7. **Chaeryon Kang**, Hunyong Cho, Rui Song, Moulinath Banerjee, Eric B. Laber, and Michael R. Kosorok. Inference for change-plane regression (2022, submitted).
- (*) indicates students under supervision/co-supervision

NON-REVIEWED
PUBLICATIONS:

1. **Chaeryon Kang**, Holly Janes, and Ying Huang. **Rejoinder**: Combining biomarkers to optimize patient treatment recommendation (2014). *Biometrics*, 70(3): 695-707.

PUBLISHED
ABSTRACTS

1. Gilmore, JH and Lin, W and Evans, DD and **Kang, C** and Hamer, RM and Smith, JK and Lieberman, JA and Gerig, G. Early brain development in children at high risk for schizophrenia (2007). *SCHIZOPHRENIA BULLETI*, 33(2),333-333.
2. Kayvon Salimi, L. Fredrik Jarskog, Lin Sikich, **Chaeryon Kang**, Robert M. Hamer, Brian B. Sheitman, John E. Kraus, John H. Gilmore. Addition of lamotrigine to antipsychotic is associated with reduced positive symptoms early in the course of schizophrenia (2009). *Biological Psychiatry*, 65 (8):210S-210S.
3. Norah Terrault, Marc G. Ghany, **Chaeryon Kang**, Stewart Cooper, Adrian M Di Bisceglie, Michael W. Fried , Steven H Belle, Jay H Hoofnagle. Seroprevalence and Clinical Features of Hepatitis D Virus (HDV) Infection in a North American Cohort (2015). *American Association for the Study of Liver Diseases(AASLD) LiverLearning*, 110842.
4. Eklund, N.M., Donofry, S.D., Gallo, M., Grove, G., Stillman, C. M., Huang, H., **Kang, C**, Burns, J.M., Vidoni, E.D., McAuley, E., Hillman, C. H., Kramer, A.F., Erickson, K.I. Associations between hormone replacement therapy and cardiorespiratory fitness with verbal and visual memory performance in post-menopausal women (2021). *the North American Menopause Society conference* , (submitted).

SOFTWARE
DEVELOPED

- R-package to analyze the data from repeated low-dose (RLD) challenge experiments for evaluating effect of vaccine. "Designing and Analyzing Repeated Low-Dose Challenge Experiments" (2017), Bin Yao, Ying Huang, and **Chaeryon Kang** (CRAN Download).

GRANT SUPPORT:
ACTIVE

- NIH, R01, 1R01AG053952-01, IGNITE: Investigating Gains in Neurocognition in an Intervention Trial of Exercise (PI: Erickson), 9/15/16 – 8/31/21(NOE) (role: co-I).
- PCORI 1609-36670, Leveraging Integrated Models of Care to Improve Patient-Centered Outcomes for Publicly-Insured Adults with Complex Health Care Needs (PI: Schuster) 01/01/18–5/31/23 (role: co-I)
- NIH P01, 2P01HL040962-21A1, eBACH: Biobehavioral studies of cardiovascular disease (PI: Gianaro) 08/15/18 – 06/30/23 (role: co-I).
- Central Research Development Fund (CRDF), University of Pittsburgh, Estimation of optimal individualized treatment rule balancing multiple patient outcomes (PI: **Kang**) 09/01/18 – 06/30/22 (NOE) (role: PI).
- NIH, R01, 1R01AG060741-01, REACT: Rhythm Experience and African Culture Trial (PI: Erickson), 09/01/18 – 05/31/23 (role: co-I).
- NIH, R01, 1R01AG060050-01A1, AIM-IGNITE: Antioxidant imaging marker of investigating gains in neurocognition in an intervention trial of exercise (PI: Lee), 02/15/19 – 11/30/22 (role: statistician).

NIH, R35, 1R35AG072307, Physical Activity and Dementia: Mechanisms of Action (PI: Erickson), 5/15/21 – 4/30/26 (role: co-I).

NCI/NIDDK, 5U01DK108306 Consortium for the Study of Pancreatitis: Pittsburgh Clinical Center (PI: Yadav), 9/30/2021 – 6/30/25 (role: statistician).

NIDDK, 5U01DK108306 UPMC Clinical Center for the Study of Diabetes After Acute Pancreatitis (PI: Yadav), 9/30/2021 – 7/31/25 (role: statistician).

GRANT SUPPORT: NIH, U01 DK082864, Hepatitis B Clinical Research Network- Data Coordinating Center (PI: COMPLETED Belle), 09/30/08 – 05/31/15 (role: statistician)

PCORI 673, Optimizing Behavioral Health Homes by Focusing On Outcomes That Matter Most for Adults with Serious Mental Illness (PI: Schuster), 5/1/13 – 5/31/17 (role: co-I).

PCORI 402, Amplifying the Patient’s Voice: Person-Centered Versus Measurement-Based Approaches in Mental Health (PI: MacDonald-Wilson), 4/1/14 – 2/28/18 (role: co-I)

NSF 1557765, QuBBD: Advancing mHealth using Big Data Analytics: Statistical and Dynamical Systems Modeling of Real-Time Adaptive m-Intervention for Pain (PI: Abrams, Kang, Long, Shah, and Li), 9/15/15 – 8/31/16 (role: PI).

NIH, R01, NIH 1R01AR069503, Predicting the Outcome of Exercise Therapy for Treatment of Rotator Cuff Tears (PI: Debski, Scott, Irragang) 7/1/16 – 8/31/17 (role: statistician).

INVITED PRESENTATIONS

1. “Change-line classification and regression for chemical toxicity analysis.”, *Bioinformatics and Computational Biology Seminar*, February 2011, MD Anderson Cancer Center, TX.
2. “Change-line classification and regression for chemical toxicity analysis.”, *Biostatistics and Bioinformatics Branch Seminar*, February 2011, Division of Epidemiology, Statistics, and Prevention Research, National Institute of Child Health and Human Development (NICHD), MD.
3. “Change-line classification and regression for chemical toxicity analysis.”, *Vaccine and Infectious Disease Division Seminars*, March 2011, Vaccine and Infectious Disease Division and Public Health Sciences Division, Fred Hutchinson Cancer Research Center, WA.
4. “Combining biomarkers to optimize patient treatment recommendations.”, Section of “Evaluating biomarker predictive models”, *The International Biometric Society Western North American Region (WNAIR) Annual Meeting*, June 2013, University of California Los Angeles, CA.
5. “Advancing mHealth using Big Data Analytics: Statistical and Dynamical Systems Modeling of Real-Time Adaptive m-Intervention for Pain”, Topic-contributed, Section of “The NSF/NIH/SAMSI Workshop on Interdisciplinary Approaches to Biomedical Data Science Challenges”, *Joint Statistical Meetings (JSM)*, July 2016, Chicago, IL.
6. “Hybrid statistical and mechanistic mathematical model guides mobile health intervention for chronic pain”, February 2017, Department of Statistics, University of Pittsburgh, PA.
7. “Statistical and Dynamical Systems Modeling of m-Intervention for Pain”, March 2017, CRISMA BDMC Speaker Series, Department of Critical Care Medicine, Pittsburgh, PA.
8. “Statistical and Dynamical Systems Modeling of m-Intervention for Pain”, Invited, Section of “Extraordinary possibility for Mobile Health to Impact Precision Medicine”, *The International Biometric Society Eastern North American Region Spring Meeting (ENAR)*, March 2017, Washington, DC.
9. “Statistical and Dynamical Systems Modeling of m-Intervention for Pain”, Invited, Section of “EO122: Recent developments on dynamic treatment regimes”, *International Conference on Econometrics and Statistics (EcoSta)*, June 2017, The Hong Kong University of Science and Technology, Hong Kong.

10. “Hybrid Statistical and Dynamical Systems Modeling Guides mHealth Intervention for Pain”, April 2018, Biostatistics Seminar Talk, Division of Biostatistics, Institute for Health and Society, Medical College of Wisconsin, Milwaukee, WI.
11. “Hybrid statistical and mechanistic mathematical model guides mobile health intervention for chronic pain”, February 18 - 22, 2019, Statistical Methods for Developing Personalized Mobile Health Interventions: Workshop on Design of mHealth Intervention Studies. Institute for Mathematical Sciences National University of Singapore (NUS), Singapore.
12. “Evaluation of biomarkers for treatment selection using individual participant data from multiple clinical trials”, Invited, Section of “EO114: Novel statistical methods and applications for medical data”, *International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)*, December 14 - 16, 2019, University of London, UK.
13. “Identificatio of immune response combinations associated with heterogeneous infection risk in the immune correlates analysis of HIV vaccine studies”, November 19, 2021, Department of Mathematics and Statistics, University of Maryland, Baltimore County (UMBC), Baltimore, MD.
14. “Identificatio of immune response combinations associated with heterogeneous infection risk in the immune correlates analysis of HIV vaccine studies”, December 16, 2021, Colloquium Seminar at Columbia University Department of Biostatistics, NY.

CONTRIBUTED
PRESENTATIONS

1. “Change-line classification and regression for chemical toxicity data.”, *ENAR*, March 2010, New Orleans, LA.
2. “Change-line classification and regression for chemical toxicity data.”, *Joint Statistical Meetings (JSM)*, August 2010, Vancouver, BC, Canada.
3. “The interactive decision committee for chemical toxicity analysis.”, *ENAR*, March 2011, Miami, FL.
4. “Identifying combinations of biomarkers for treatment selection.”, *JSM*, August 2012, San Diego, CA.
5. “A discrete survival model with random effect for designing and analyzing repeated low-dose challenge experiment.”, *ENAR*, March 2013, Orlando, FL.
6. “Identifying immune response combinations associated with heterogeneous infectious risk in HIV vaccine studies.”, *JSM*, August 2013, Montréal, QC, Canada.
7. “Combining biomarkers to optimize patient treatment recommendations.”, *ENAR*, March 2014, Baltimore, MD.
8. “Evaluation of biomarkers for treatment selection using individual participant data meta-analysis.”, *JSM*, August 2015, Seattle, WA.
9. “Evaluation of biomarkers for treatment selection using individual participant data meta-analysis.”, *ENAR*, March 2016, Austin, Texas.
10. ”Inference and optimal design for longitudinal cluster-randomized clinical trials given a small number of clusters with application to a serious mental illness intervention study”, *JSM*, July 2018, Vancouver, BC, Canada.
11. “Statistical methods for treatment selection and precision medicine”, *Biostatistics Research Day*, March 4, 2021, Department of Biostatistics, University of Pittsburgh, PA.

DEPARTMENTAL
PRESENTATIONS

1. “A discrete time survival model with random effect for designing and analyzing repeated low-dose challenge experiment.”, *P01 Statistical Methods Collaboration Seminar*, April 2013, Fred Hutchinson Cancer Research Center, WA.
2. “Prepare towards a faculty position.”, *Academic career workshop: Roadmap towards academic research*, May 2017, Department of Biostatistics, University of Pittsburgh, PA.

TEACHING EXPERIENCE	University of Pittsburgh , Department of Biostatistics, Pittsburgh, PA, USA	
	Statistical Estimation Theory (PhD-level core course for graduate students)	Fall 2015
	Statistical Estimation Theory (PhD-level core course for graduate students)	Fall 2016
	Biostatistics Seminar	Fall 2016
	Biostatistics Seminar	Spring 2017
	Statistical Estimation Theory (PhD-level core course for graduate students, 20)	Fall 2017
	Biostatistics Seminar	Fall 2017
	Biostatistics Seminar	Spring 2018
	Statistical Estimation Theory (PhD-level core course for graduate students, 7)	Fall 2018
	Statistical Estimation Theory (PhD-level core course for graduate students, 13)	Fall 2019
	Statistical Estimation Theory (PhD-level core course for graduate students, 14)	Fall 2020
	Statistical Estimation Theory (PhD-level core course for graduate students, 7)	Fall 2021
	University of North Carolina , Department of Biostatistics, Chapel Hill, NC, USA	
	Principles of Statistical Inference (Teaching Assistant)	Spring 2007
Principles of Statistical Inference (Teaching Assistant)	Spring 2008	
Ewha Womans University , Department of Statistics, Seoul, South Korea		
Mathematical statistics I (Teaching Assistant)	Spring 1999	
Mathematical statistics II (Teaching Assistant)	Fall 1999	
Measure and probability (Teaching Assistant)	Spring 2000	
OTHER PROJECTS	Understanding the Niche of Care: A prospective analysis of the management of inpatient diabetes mellitus patients admitted at UNC Hospital (UNC-CH) September, 2010 - November, 2010	
	Investigators: Arocena, C. L., and DeCherney, S. MD, MPH	
	Statistical analysis plan	
	Study Report: Prevention of Postpsychotic Depression with Lamotrigine (UNC Schizophrenia Research Center)	August, 2008 - December, 2008
	Principal Investigator: John H. Gilmore, MD	
	Statistical data analysis	
	Cystic Fibrosis Improvement Project (NC-CCHI, UNC-CH)	August, 2004 - January, 2006
	Principal Investigator: Peter Margolis, MD, PhD	
	Longitudinal data analysis to study effect of interventions for Cystic fibrosis clinics.	
	EMS and Hospital environmental project (NC-CCHI, UNC-CH)	August, 2004 - January, 2006
	Principal Investigator: Peter Margolis, MD, PhD	
	Statistical data analysis to study EMS system and hospital environments.	
HONORS & AWARDS	Statistical and Applied Mathematical Sciences Institute (SAMSI)	
	Travel Award, Ideas Lab Workshop	July 2015
	Travel Award, Methodology for Precision Medicine: Integrating Statistical and Mathematical Approaches Workshop	April 2016
	Fred Hutchinson Cancer Research Center	
	The Student/Postdoc Advisory Committee (SPAC) Course Scholarship	March 2013
	The Student/Postdoc Advisory Committee (SPAC) Course Scholarship	August 2013
	The Student/Postdoc Advisory Committee (SPAC) Course Scholarship	March 2014
	University of Washington, Department of Biostatistics	

Summer Institute in Statistics and Modeling in Infectious Diseases Scholarship July 2012

University of North Carolina, Department of Biostatistics, Chapel Hill

Student travel award March 2010

Student travel award August 2010

Ewha Womans University

Ewha Graduate Research Fellowship

MAGNA CUM LAUDE

DEAN's LIST (Junior)

Honors Scholarship, The College of Natural Science

STUDENT
SUPERVISION

Thesis Advising

- Xiaotian (Steven) Gao (PhD. of Biostatistics), co-advising with Dr. Wahed November 2016–June 2020
- “Joint Model of Longitudinal and Survival Data and Robust Nonparametric Regression”. Graduated in August 2020, first job is an Assistant professor (tenure track) in the Department of Kinesiology and Community Health at the University of Illinois Urbana-Champaign (UIUC).
- Anran Liu (PhD. student-Biostatistics) September 2018–summer 2020
- Yue (Luna) Wei (PhD. of Biostatistics), co-advising with Dr. Ying Ding graduated in August 2021
- “New Statistical Insights to Precision Medicine, from Targeted Treatment Development to Individualized Tailoring Recommendation”.
- Shan Wu (MS of Biostatistics, a winner of the Lingzi Lu Memorial Award 2022, ASA and ICSA), co-advising with Dr. Jenna Carlson Sep 2021- graduated in May 2022
- “Assessing the impact of missing outcome data on the longitudinal clinical trial during the COVID-19 pandemic: a simulation study for a sensitivity analysis using imputation methods”.

Research Assistants Supervision

- Di Zhang (PhD. student-Biostatistics) September 2015–May 2019
- Jian He (PhD. student-Biostatistics) September 2017–June 2018
- Xueping Zhou(PhD. student-Biostatistics) September 2018–May 2022

Academic Advising

- Di Zhang (PhD. student-Biostatistics) September 2015–December 2016
- Jian He (PhD. student-Biostatistics) September 2017–June 2018
- Xueping Zhou (PhD. student-Biostatistics) September 2018–August 2020

PROFESSIONAL
SERVICES

Editorial Board: Journal of Health Informatics and Statistics March 2013 –February 2016

Reviewer: Annals of Statistics (2013–), Statistics in Medicine (2013–), Clinical Trials (2013–), Journal of the American Statistical Association (2015–), Biometrics (2015–), Contemporary Clinical Trials Communications (2016–), Journal of Biopharmaceutical Statistics (2016–), BMC Medical Research Methodology (2016–), Statistica Sinica (2016–), Biometrical Journal (2017–), Electronic Journal of Statistics (2017–),Sankhya B: The Indian Journal of Statistics (2018–), Communications in Statistics (2019–), Contemporary Clinical Trials (2019–),

Conferences/Workshops

- Session chair, Section of “Methods for comparative effectiveness research using electronic health records” (invited paper), ENAR 2016.
- Organizer & chair, Section of “Extraordinary possibilities for mobile health to impact precision medicine” (Invited paper), JSM 2016.

- Organizer, Section of “Extraordinary possibilities for mobile health to impact precision medicine” (Invited paper), ENAR 2017.
- Co-organizer, Section of “EO114: Novel statistical methods and applications for medical data”, *International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)*, December 14 - 16, 2019, University of London, UK.

University of Pittsburgh service

- Health and Wellness Committee (member), Graduate School Public Health January 2015 – May 2017
- Policy, Planning and Budget Committee (PBPC, member), Graduate School Public Health September 2020–Present
- PhD Comprehensive exam Part I (Theory, member) 2020–Present
- PhD Comprehensive exam Part I (Theory), ad-hoc member (problem submission and grading), 2015–2019
- Curriculum Committee (member), Department of Biostatistics September 2015 –Present
- Information Technology Committee (member), Department of Biostatistics January 2015 –Present
- Webpage Committee (member), Department of Biostatistics January 2016 –2020
- Space Committee (member), Department of Biostatistics October 2021 –Present
- Reviewer, the Central Research Development Fund (CRDF) May 2016
- Reviewer, the Public Health Trans-Disciplinary Collaboration Pilot Awards (CTSI funds) Feb 2022
- Faculty judge, Dean’s Day Poster Competition April 2015, 2016, 2018, 2021
- Faculty judge, ENAR Student Presentation Evaluation, Department of Biostatistics March, 2015–2017
- Faculty judge, Biostatistics Research day Student Presentation award competition, Department of Biostatistics March, 2018, 2019, 2021,2022
- Coordinator, Department of Biostatistics seminar series Fall 2016–Summer 2018
- Coordinator, Biostatistics Student Research day March, 2017

Dissertation/Thesis Committees (Pitt)

- Andrew Topp, “Doubly robust estimation in two-stage dynamic treatment regimes in the presence of drop-out” (graduated in April 2016, PhD in Biostatistics; Wahed)
- Zhaowen Sun, “Power and sample size determination in dynamic risk prediction” (graduated in Aug 2017, PhD in Biostatistics; Chang)
- John R. Pleis, “Mixtures of discrete and continuous variables: considerations for dimension reduction” (graduated in May 2018, PhD in Biostatistics; Anderson)
- Di Zhang, “Inference on WIN ratio for clustered semi-competing risk data” (graduated in April 2019, PhD in Biostatistics; Jeong)
- Chenxin Yang, “Personalized Medicine: Application To A Breast Cancer Study” (graduated in April 2019, MS in Biostatistics; G. Tang)
- Rich Cuddy, “Restricted confidence intervals for ordered Binary and Survival data” (graduated in July 2019, MS in Biostatistics; Park)
- Chandler Capps, “A Functional Data Analysis of Accelerometer-Based Activity” (graduated in June 2020, MS in Biostatistics; Krafty)
- Xiaotian (Steven) Gao, “Joint Model of Longitudinal and Survival Data and Robust Non-parametric Regression” (graduated in June 2020, PhD. in Biostatistics; Wahed & Kang)
- Victor Talisa, “Novel Statistical approaches for practical problems in individualized medicine” (graduated in December 2020, PhD in Biostatistics; Chang)
- Mihloti Williams, “The effect of African Dance on physical fatigability” (graduated in November 2020, MPH in Epidemiology; Glynn)
- Liwen Wu, “Interim monitoring and sample size adjustment in sequential multiple assignment randomized trials ” (graduated in July 9, 2021, PhD in Biostatistics; Wahed)
- Xianling Wang, “Statistical considerations in latent class modelling of diagnostic tests and covariates with missing values (graduated in July 14, 2021, PhD in Biostatistics; Gong Tang)

- Yue (Luna) Wei, “New Statistical Insights to Precision Medicine, from Targeted Treatment Development to Individualized Tailoring Recommendation” (graduated in July 26 2021, PhD in Biostatistics; Ding & Kang)
- Shan Wu (“Assessing the impact of missing outcome data on the longitudinal clinical trial during the COVID-19 pandemic: a simulation study for a sensitivity analysis using imputation methods”; graduated, MS in Biostatistics, Kang & Carslon) April 21, 2022
- Sarah L. Aghjayan, “Associations Between Episodic Memory and Hippocampal Volume in Late Adulthood” (Proposal, May 13, 2022, PhD in Psychology; Erickson)

WORK
EXPERIENCE

Amway Korea Line, Seoul, South Korea

Mirae Credit Information Services Corp., Seoul, South Korea

PROFESSIONAL
MEMBERSHIPS

American Statistical Association	2008 - 2018
Eastern North American Region, The International Biometric Society	2009 - 2018
Western North American Region, The International Biometric Society	2013 - 2014
Korean International Statistical Society	2015 - Present

SKILLS &
CERTIFICATION

Skills

- Proficient in SAS and R
- Familiar with C, C++; some knowledge of Unix shell scripting and MATLAB

Certification

- Causal Inference (Instructors: Drs. Michael G. Hudgens and Thomas Richardson), Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID), University of Washington, July 11–13, 2012.
- Prognostic Biomarker Evaluation (Instructor: Dr. Patrick Heagerty), Summer Institute in Statistics for Clinical Research (SISCR), University of Washington, June 25, 2014.
- Advanced Topics in the Design of Clinical Trials (Instructor: Dr. Thomas Fleming), Summer Institute in Statistics for Clinical Research (SISCR), University of Washington, June 27, 2014.
- An Introduction to Causal Inference (Instructors: Drs. *Hernán*, Lok, Tchetgen Tchetgen, Robins, VanderWeele), Short Course in the HSPH Program on Causal Inference, Departments of Biostatistics and Epidemiology at the Harvard T.H. Chan School of Public Health. June 4–8, 2018.