

HYUNKEUN (RYAN) CHO

CONTACT INFORMATION	Department of Biostatistics College of Public Health University of Iowa 145 N. Riverside Drive Iowa City, IA 52242 USA	<i>Phone:</i> +1 (319) 384-1581 <i>Email:</i> hyunkeun-cho@uiowa.edu <i>Homepage:</i> https://www.public-health.uiowa.edu
EDUCATION	Ph.D. in Statistics, University of Illinois at Urbana-Champaign M.S. in Applied Math & Statistics, Stony Brook University B.S. in Applied Math & Statistics, Stony Brook University B.A. in Mathematics, Stony Brook University	2013 2008 2007 2007
EMPLOYMENT	Assistant Professor, Department of Biostatistics at University of Iowa Affiliated Faculty, Clinical Trials Statistical and Data Management Center Affiliated Faculty, Center for Advancing Multimorbidity Science Biostatistician, Center for Access & Delivery Research and Evaluation, VA Iowa City Health Care System Assistant Professor, Department of Statistics at Western Michigan Univ	since 7/2017 since 2/2018 since 2/2019 since 2/2020 8/2013 - 7/2017
AWARD AND HONOR	Junior Faculty Research Opportunity Award at University of Iowa NISS Writing Workshop Travel Grant Award New Faculty Research Award at University of Iowa Norton Prize Finalist for exceptional doctoral thesis at University of Illinois Graduate College Conference Travel Award at University of Illinois Degree Honor ‘Magna Cum Laude’ at Stony Brook University	2018, 2019 2018 2017 2013 2013 2007
RESEARCH INTERESTS	Longitudinal data analysis; Causal inference; Predictive modeling; Precision medicine; Nonparametric modeling; Quantile regression; Preventive medicine.	
COLLABORATIVE RESEARCH AREAS	Neuroscience; Parkinson’s disease; Dementia; Depressive disorder; Cardiovascular disease; Clinical trials; Infectious disease; Maternal and child health; .	
PUBLICATIONS	<u><i>Methodological Research</i></u>	
	<i>(Note: ‡ denotes PhD advisee.)</i>	
	Kim, S., Cho, H. and Wu, C. (2020). Risk-predictive probabilities and dynamic non-parametric conditional quantile models for longitudinal analysis, <i>Statistica Sinica</i> , in press.	
	Cho, H. , Kim, S. and Lee, M. (2020). Adjusting a subject-specific time of event in longitudinal studies, <i>Statistical Methods in Medical Research</i> 29, 1787-1798.	
	Kim, S., Cho, H. and Zhang, X. (2019). Initial severity-dependent longitudinal model with application to a randomized controlled trial of women with depression, <i>Statistics in Medicine</i> 38, 1678-1689.	
	Niu, X.‡ and Cho, H. (2019). Adjusting for baseline information in comparing the efficacy of treatments using bivariate varying-coefficient models, <i>Journal of Nonparametric Statistics</i> 31, 680-694.	
	Niu, X.‡ and Cho, H. (2019). Efficient regression modeling for correlated and overdispersed count data, <i>Communications in Statistics-Theory and Methods</i> 48, 6005-6018.	
	Niu, X.‡ and Cho, H. (2019). Simultaneous estimation and inference for multiple response variables, <i>Communications in Statistics-Theory and Methods</i> 48, 2734-2747.	
	Andrews, N.‡ and Cho, H. (2019). Generalized growth curve models for longitudinal data in application to a randomized clinical trial, <i>Journal of the Korean Statistical Society</i> 48, 40-49.	

- Andrews, N.[‡] and **Cho, H.** (2018). Validating effectiveness of subgroup identification for longitudinal data, *Statistics in Medicine* 37, 98-106.
- Cho, H.** (2018). Statistical inference in a growth curve quantile regression model for longitudinal data, *Biometrics* 74, 855-862.
- Kim, S. and **Cho, H.** (2018). Efficient estimation in the partially linear quantile regression model for longitudinal data, *Electronic Journal of Statistics* 12, 824-850.
- Cho, H.** and Kim, S. (2017). Model specification test in semiparametric regression models for longitudinal data, *Journal of Multivariate Analysis* 160, 105-116.
- Cho, H.**, Kim, S. and Kim, M. O. (2017). Multiple quantile regression analysis of longitudinal data: Heteroscedasticity and efficient estimation, *Journal of Multivariate Analysis* 155, 334-343.
- Cho, H.**, Wang, P. and Qu, A. (2017). Personalized treatment for longitudinal data using unspecified random-effects model, *Statistica Sinica* 27, 187-205.
- Cho, H.**, Hong, H. G. and Kim, M. O. (2016). Efficient quantile marginal regression for longitudinal data with dropouts, *Biostatistics* 17, 561-575.
- Cho, H.** (2016). The analysis of multivariate longitudinal data using multivariate marginal models, *Journal of Multivariate Analysis* 143, 481-491.
- Cho, H.** and Qu, A. (2015). Efficient estimation for longitudinal data by combining large-dimensional moment conditions, *Electronic Journal of Statistics* 9, 1315-1334.
- Cho, H.** and Qu, A. (2013). Model selection for correlated data with diverging number of parameters, *Statistica Sinica* 23, 901-927.

Interdisciplinary Research

- Saito, T., Braun, P. R., Daniel, S., Jellison, S. S., Hellman, M., Shinozaki, E., Lee, S., **Cho, H.**, Yoshino, A., Toda, H. and Shinozaki, G. (2020). The relationship between DNA methylation in neurotrophic genes and age as evidenced from three independent cohorts: Differences by delirium status. *Neurobiology of Aging*, in press.
- Saito, T., Toda, H., Duncan, G., Jellison, S., Yu, T., Klisares, M., Daniel, S., Andreassen, A., Leyden, L., Hellman, M., Shinozaki, E., Lee, S., Yoshino, A., **Cho, H.** and Shinozaki, G. (2020). Epigenetics of neuroinflammation: immune response, inflammatory response and cholinergic synaptic involvement evidenced by genome-wide DNA methylation analysis of delirious inpatients. *Journal of Psychiatric Research*, in press.
- Simuni, T., Uribe, L., **Cho, H.**, Caspell-Garcia, C., Coffey, C., Siderowf, A., Trojanowski, J.Q., Shaw, L.M., Seibyl, J., Singleton, A., Toga, A.W., Galasko, D., Foroud, T., Tosun, D., Poston, K., Weintraub, D., Mollenhauer, B., Tanner, C.M., Kiebertz, K., Chahine, L.M., Reimer, A., Hutten, S.J., Bressman, S. and Marek, K. (2020). Clinical and DAT imaging characteristics of non-manifest LRRK2 and GBA mutation carriers in the Parkinson's Progression Markers Initiative (PPMI): A cross sectional study, *Lancet Neurology* 19, 71-80.
- Weintraub, D., Caspell-Garcia, C., Simuni, T., **Cho, H.**, Coffey, C., Aarsland, D., Alcalay, R.N., Barrett, M.J., Chahine, L.M., Eberling, J., Espay, A.J., Hamilton, J., Hawkins, K., Leverenz, J., Litvan, I., Richard, I., Rosenthal, L., Siderowf, A. and York, M. (2020). Neuropsychiatric symptoms and cognitive abilities over the initial quinquennium of Parkinson disease, *Annals of Clinical and Translational Neurology* 7, 449-461.
- Saito, T., Shinozaki, G., Koga, M., Tanichi, M., Takeshita, S., Nakagawa, R., Nagamine, M., **Cho, H.**, Morimoto, Y., Kobayashi, Y., Yoshino, A. and Toda, H. (2020). Effect of interaction between a specific subtype of child abuse and the FKBP5 rs1360780 SNP on DNA methylation among patients with bipolar disorder, *Journal of Affective Disorders* 272, 417-422.

- Shinozaki, G., Bormann, N. L., Chan, A. C., Zarei, K., Sparr, N. A., Klisares, M., Jellison, S. S., Heinzman, J., Dahlstrom, E. B., Duncan, G. N., Coon, N. A., Gaul, L., Robles, J., Yu, T., Wansek, R., Ando, T., Wong, T., Chicchelly, H., Cramer, E., Wimmel, C., Chronis, T., Sabbagh, S., Yuki, K., Weckmann, M., Yamada, T., Karam, M., Noiseux, N., Shinozaki, E., **Cho, H.**, Lee, S. and Cromwell, J. W. (2019). Identification of patients with high mortality risk and prediction of outcomes in delirium by bispectral EEG, *Journal of Clinical Psychiatry* 80, 19m12749.
- Shinozaki, G., Braun, P. R., Hing, B. W., Ratanatharathorn, A. D., Klisares, M., Heinzman, J., Nagahama, Y., Close, L., Sabbagh, S., Dlouhy, B. J., Howard, M., Kawasaki, H. and **Cho, H.** (2018). Epigenetics of delirium: potential role of DNA methylation change on cytokine genes in glia and blood along with aging, *Frontiers in Aging Neuroscience* 10, 1-10.
- Cho, H.**, Son, S. J., Kim, S. and Park, J. (2016). A randomized comparison of medication and cognitive behavioral therapy for treating depression among low-income young minority women, *Medical Science Monitor* 22, 4947-4953.
- Park, J., Lawrence, C. B. and **Cho, H.** (2015). A discursive assessment of narrative journalism using coh-metrix and principal component analysis, *Journal of the 21st Century Association of English Language and Literature* 28, 383-400.
- Dev, D., McBride, B., Speirs, K., Donovan, S. and **Cho, H.** (2014). Predictors of head start and child-care providers' healthful and controlling feeding practices with children aged 2 to 5 years, *Journal of the Academy of Nutrition and Dietetics* 114, 1396-1403.
- Dev, D., McBride, B., Fiese, B., Jones, B. and **Cho, H.** (2013). Risk factors for overweight/obesity in preschool children: an ecological approach, *Childhood Obesity* 9, 399-408.

Book Review

- Cho, H.** (2015). Growth curve analysis and visualization using R, *The American Statistician* 69, 425-434.

GRANTS

Active Grants

- US Department of Veterans Affairs since 3/2020
 Title: Veterans Affairs Intergovernmental Personnel Act (IPA) Center for Access & Delivery Research and Evaluation (CADRE) statistical consultation
 Role: Principal Investigator
 Effort: 20%
- The Michael J. Fox Foundation for Parkinson's Research since 2/2018
 Title: Parkinson's Progression Markers Initiative Statistics Core
 Role: Co-Investigator (Coffey, PI)
 Effort: 20%
- R01 US Department of Health & Human Services, NIH since 8/2020
 Title: Targeted metabolic profiling to predict major neonatal morbidity in very preterm newborns
 Role: Co-Investigator (Ryckman, PI)
 Effort: 10%
- National Heart, Lung, and Blood Institute, NIH since 3/2019
 Title: Iowa Summer Institute in Biostatistics
 Role: Co-Investigator (Zamba, PI)
 Effort: 6%
- R21 National Institute of Aging, NIH since 6/2019
 Title: Building a bridge (between clinical and community care): post-diagnosis support of persons with dementia and their family
 Role: Co-Investigator (Ashida, PI)
 Effort: 5%

Completed Grants

National Institute of Neurological Disorders and Stroke, NIH 1/2018-9/2020
Title: Network for Excellence in Neuroscience Clinical Trials (NeuroNEXT)-DCC
Role: Co-Investigator (Coffey, PI)
Effort: 10%

Junior Faculty Research Opportunity Award, University of Iowa 2019
Title: Support to develop my academic career in longitudinal studies
Role: Principal Investigator
Total amount of award:: \$4,732

New Faculty Research Award, University of Iowa 1/2018-8/2019
Title: Decision support tool: Initial severity-dependent longitudinal model
Role: Principal Investigator
Total amount of award:: \$8,326

Junior Faculty Research Opportunity Award, The University of Iowa 2018
Title: Decision support tool in randomized clinical trials
Role: Principal Investigator
Total amount of award: \$4,244

Michigan Department of Transportation 1/2016-12/2017
Title: Evaluating the impacts of speed limit changes on identified case studies
Role: Co-Principal Investigator (Kwigizile, PI)
Effort: 8%
Total amount of award: \$162,219

Transportation Research Center 5/2014-12/2015
Title: Big data analytics to aid developing livable communities
Role: Co-Investigator (Yang, PI)
Effort: 5%
Total amount of award: \$136,930

TEACHING
EXPERIENCE

University of Iowa

- *Graduate courses*

BIOS 7310 Longitudinal Data Analysis Spring 2021
BIOS 6310 Introductory Longitudinal Data Analysis Fall 2017-2020
BIOS 5730 Biostatistical Methods Categorical Data Spring 2020
BIOS 6210 Applied Survival Analysis Spring 2019

Western Michigan University

- *Graduate courses*

STAT 5850 Applied Data Mining Fall 2015, 2016
STAT 6610 Multivariate Statistical Analysis Spring 2015, 2017
STAT 6810 Survival Data Analysis Spring 2014, 2016

- *Undergraduate courses*

STAT 2600 Data Analysis using R Fall 2014 - Summer 2017
STAT 3640 Foundations of Data Analysis Fall 2013, Spring 2014
STAT 3660 Data Analysis for Biosciences Summer 2014

University of Illinois at Urbana-Champaign

- *Undergraduate courses*

STAT 200 Statistical Analysis Fall 2011 - Fall 2012

Stony Brook University

- *Undergraduate courses*

MAT 126 Calculus B Fall 2007

PROFESSIONAL
EXPERIENCE

University of Iowa

- *Doctoral Student Supervision*
 - o Daren Kuwaye Ph.D. in Biostatistics, expected 2023
 - o Zhuangzhuang Liu Ph.D. in Biostatistics, expected 2022
- *Ph.D. Thesis Committee Member*
 - o Javier Flores Ph.D. in Biostatistics, expected 2021
 - o Clarissa Shaw Ph.D. in Nursing, expected 2020
 - o Ashamsa Aryal Ph.D. in Occupational & Environmental Health, 12/2020
 - o Elizabeth Jasper Ph.D. in Epidemiology, 12/2019
 - o Yang Pan Ph.D. in Marketing, 8/2019
- *Member of Data Safety Monitoring Board for an R01 grant* since 2019
- *NSF proposal review* 2018
- *Organizer for invited session*
 - o Recent advancement in complex data, *WNAR meeting*, Anchorage, Ak, 6/2020.
 - o Recent advances in statistical modeling for multivariate/correlated/time-varying longitudinal data, *Joint Statistical Meetings*, Denver, Co, 7/2019.
 - o Statistical methods for time-varying/stratified correlated data analysis, *WNAR meeting*, Portland, OR, 6/2019.
- *Session Chair*
 - o Statistical methods for time-varying/stratified correlated data analysis, *WNAR meeting*, Portland, OR, 6/2019.
- *Service*
 - o Ph.D. comprehensive exam steering committee 2020-2021
 - o Ph.D. comprehensive examination review committee 2019-2021
 - o M.S. core exam committee 2018-2021
 - o Admissions and student recruitment committee 2018-2021
 - o Student awards committee 2018-2021
 - o Woolson lecture committee 2018-2019
 - o Faculty search committee 2017-2019
 - o M.S. and Ph.D. curriculum committee 2017-2018

Western Michigan University

- *Doctoral Students Supervision*
 - o Xiaomeng Niu Ph.D. in Statistics, 5/2018
is a biostatistician at Allergan
 - o Nichole R. Andrews Ph.D. in Statistics, 5/2017
is a faculty specialist in Department of Statistics at Western Michigan University
- *Ph.D. Thesis Committee Member*
 - o Bezawit Teshome Agiro Ph.D. in Economics, 5/2018
 - o Ama Agyeiwaa Abrokwah Ph.D. in Economics, 8/2017
- *Data Science Major & Minor Advisor* 9/2014 - 7/2017
Coordinate programs and supervise undergraduate students in these programs.
- *Statistical Analyst* 5/2014 - 12/2016
Scholarships and Grants Modeling for WMU Office of Provost
- *DataFest Team Advisor* 9/2016 - 4/2017
Recruit students for the competition and assist them throughout the entire process. The team received the Grand Prize at DataFest, Chicago, 4/2017.
- *Program Chair* 2/2016
Great Lakes International Symposium: Interdisciplinary Research in Data Science

- *Organizer for invited session*
Modern Developments in Statistical Analysis, *Korean Statistical Society Conference*, Seoul, Korea, 5/2017.
- *Session Chair*
 - o Modern Topics in applied statistics, *Korean Statistical Society Conference*, Daejeon, Korea, 11/2016.
 - o Rank-Based & Nonparametric Procedures, *International Conference on Robust Rank-Based and Nonparametric Methods*, Kalamazoo, MI, 4/2015.
- *Service*
 - o Computing development committee 2015 - 2017
 - o Program review and development committee 2014 - 2017
 - o Statistics colloquium committee 2013 - 2017
 - o Ph.D. comprehensive and qualifying examination committee 2015 - 2017
 - o Faculty search committee 2014 - 2016
 - o Chair appointment executive committee 2015

University of Illinois at Urbana-Champaign

- *NSF Research Assistant* 8/2010 - 8/2013
- *Consultant* at Illinois Statistical Office 8/2010 - 8/2013

Korea Institute of Finance, Korea

- *Research Assistant* 12/2005 - 1/2006

JOURNALS
REFEREED

Statistics in Medicine (6), Journal of the American Statistical Association (4), Statistica Sinica (3), Electronic Journal of Statistics (3), Biometrics (2), Computational Statistics and Data Analysis (2), Journal of Multivariate Analysis (2), Journal of the Korean Statistical Society (2), Statistics and Probability Letters (1), Journal of Applied Statistics (1), Communications in Statistics - Simulation and Computation (1), Annals of the Institute of Statistical Mathematics (1), International Journal of Statistics (1), Statistical Science (1), Statistical Methods and Applications (1), Precision Clinical Medicine (1), Liver Transplantation (1), Medical Science Monitor (1)

TALKS AND
PRESENTATIONS

Invited Talks

- Evaluating the population mean trajectory of an outcome in longitudinal studies with a subject-specific time of an event, *University of Nebraska Medical Center*, Omaha, NE, 10/2019.
- Statistical inference in a growth curve quantile regression model, *Joint Statistical Meetings*, Denver, CO, 8/2019.
- Uses and new developments of quantile regression analysis of longitudinal data, *Rush University*, Chicago, IL, 6/2019.
- Risk predictive modeling, *Statistics Korea*, Daejeon, Korea, 5/2019.
- Various statistical models for longitudinal data, *Yonsei University*, Wonju, Korea, 5/2019.
- Risk predictive modeling with longitudinal data, *Korean Biostatistics Meeting*, Seoul, Korea, 5/2019.
- Statistical methods with varying coefficient models in biomedical studies, *Yonsei University*, Seoul, Korea, 7/2018.
- Statistical methods with varying coefficient models in longitudinal studies, *University of Iowa*, Iowa City, IA, 3/2018.

Statistical methods with varying coefficient models in longitudinal studies, *University of Illinois*, Champaign, IL, 3/2018.

Various statistical models for longitudinal data with application to a randomized controlled trial, *University of Iowa*, Iowa City, IA, 2/2018.

Statistical inference in a growth curve quantile regression model for longitudinal data, *University of Iowa*, Iowa City, IA, 10/2017.

Statistical inference in a growth curve quantile regression model for longitudinal data, *Kansas State University*, Mahattan, KS, 10/2017.

Growth curve quantile regression model for longitudinal data, *Yonsei University*, Seoul, Korea, 6/2017.

Growth curve quantile regression model for longitudinal data, *Statistics Korea*, Daejeon, Korea, 6/2017.

Growth curve quantile regression model for longitudinal data, *Korea University*, Seoul, Korea, 5/2017.

Various statistical models for longitudinal data with application to a randomized controlled trial, *Korean Statistical Society Conference*, Seoul, Korea, 5/2017.

Efficient quantile marginal regression for longitudinal data with dropouts, *San Diego State University*, San Diego, CA, 1/2017.

Efficient quantile marginal regression for longitudinal data with dropouts, *California State Polytechnic University*, Pomono, CA, 1/2017.

Efficient quantile marginal regression for longitudinal data with dropouts, *University of Iowa*, Iowa City, IA, 1/2017.

Efficient quantile marginal regression for longitudinal data with dropouts, *Sungkyunkwan University*, Seoul, Korea, 11/2016.

Consistent moment selection from high-dimensional moment conditions, *Western Michigan University*, Kalamazoo, MI, 9/2016.

Efficient quantile marginal regression for longitudinal data with dropouts, *ICSA Applied Statistics Symposium*, Atlanta, GA, 6/2016.

Efficient estimation for longitudinal data with multiple responses: application to transportation safety study, *Michigan State University*, East Lansing, MI, 1/2016.

Efficient quantile regression for longitudinal data with dropouts, *Western Michigan University*, Kalamazoo, MI, 1/2016.

Quantile marginal regression for longitudinal data with dropouts, *Michigan State University*, East Lansing, MI, 1/2016.

Quantile regression models for longitudinal data, *Sookmyung Women's University*, Seoul, Korea, 1/2016.

Quantile regression models for longitudinal data, *The University of Suwon*, Hwaseong, Korea, 12/2015.

Weighted varying-coefficient models for longitudinal data, *Western Michigan University*, Kalamazoo, MI, 12/2015.

Efficient estimation for longitudinal data by combining high-dimensional moment conditions, *Joint Statistical Meetings*, Seattle, WA, 8/2015.

Multivariate marginal model for multivariate longitudinal data, *Spring Research Conference*, Cincinnati, OH, 5/2015.

Varying-coefficient modeling for longitudinal data, *Ajou Univeristy*, Suwon, Korea, 12/2014.

Subgroup identification for longitudinal data with unspecified random effects, *Joint Statistical Meetings*, Boston, MA, 8/2014.

Subgroup identification for longitudinal data, *Western Michigan University*, Kalamazoo, MI, 5/2014.

Personalized treatment for longitudinal data, *ENAR meeting*, Baltimore, MD, 3/2014.

Variable selection for longitudinal data with diverging number of parameters, *Korean Statistical Society Conference*, Seoul, Korea, 11/2013.

Big data meets text-mining, *International Conference on Text-mining*, Suwon, Korea, 10/2013.

Model selection for correlated data with diverging number of parameters, *International Workshop on the Perspectives on High-dimensional Data Analysis III*, Vancouver, Canada, 5/2013.

Model selection for correlated data with diverging number of parameters, *University of Missouri*, Saint Louis, MI, 1/2013.

Model selection for correlated data with diverging number of parameters, *Western Michigan University*, Kalamazoo, MI, 1/2013.

Model selection for correlated data with diverging number of parameters, *Marquette University*, Milwaukee, WI, 12/2012.

Consistent moment selection from high-dimensional moment conditions, *Ajou University*, Suwon, Korea, 11/2012.

Efficient moment selection from high-dimensional moment conditions, *Midwest Statistics Research Colloquium*, Madison, WI, 3/2012.

Conference Presentations

Adjusting a subject-specific timing of event in longitudinal studies, *Joint Statistical Meetings*, Vancouver, Canada, 8/2018.

Statistical methods with varying coefficient models, *Young Statistician's Meeting*, Seoul, Korea, 7/2018.

Statistical inference in a growth curve quantile regression model for longitudinal data, *International Biometrics Conference*, Barcelona, Spain, 7/2018.

Various statistical models for longitudinal data with application to a randomized controlled trial, *Young Statistician's Meeting*, Yangpeong, Korea, 7/2017.

Consistent moment selection from high-dimensional moment conditions, *Joint Statistical Meetings*, San Diego, CA, 8/2012.

Model selection for correlated data with diverging number of parameters, *ENAR meeting*, Miami, FL, 3/2011.

AFFILIATIONS

American Statistical Association
International Biometric Society (ENAR)
Institute of Mathematical Statistics
Korean International Statistical Society