

Yimin Zhang, Ph.D.

Associate Professor of Statistics

CONTACT INFORMATION	Department of Mathematics and Statistics St Augustine Center Liberal Arts Room 325 Villanova University 800 Lancaster Avenue, Villanova, PA 19085 USA	
EDUCATION	August, 2014 Ph.D., Statistics, Oklahoma State University 2009 B.S., Computational Mathematics, Dalian University of Technology, China	
PROFESSIONAL EXPERIENCE	2020-present Associate Professor, Department of Mathematics & Statistics, Villanova University 2014-2020 Assistant Professor, Department of Mathematics & Statistics, Villanova University 2009-2014 Teaching Assistant, Department of Statistics, Oklahoma State University 2012, fall Research Assistant, Department of Statistics, Oklahoma State University	
RESEARCH INTERESTS	Inference on Ranked-Set Sampling, Multiple Comparisons, Statistical Learning	
AWARDS	2014 Carl E. Marshall Award, Outstanding Ph.D. Graduate in Statistics 2014, Oklahoma State University 2013 Bob Morrison Scholarship, College of Arts and Sciences, Oklahoma State University 2010 M2010 Data Mining Conference Travel Grant, Business School, Oklahoma State University 2005-2006 Mathematics Outstanding Student Scholarship, Dalian University of Technology	
GRANTS	2025 Villanova University Conference Travel Grant. 2024 Villanova CLAS Faculty Research and Development Grant. 2020 Villanova University Summer Research Grant, "Spatio-temporal Modeling of the Relationship Between Surface Temperature, Ambient Temperature and Urban Structure in Metropolitan Urban Systems". 2018-19 Villanova Institute for Teaching and Learning minigrant, "A Hybrid Flipped Classroom Model on Introductory Data Mining Course: A Blend of Lecture and Flipped Learn".	
REFERRED PUBLICATIONS	Frey, J., and Zhang, Y. (2025). "Robust adjusted Wald confidence intervals for a proportion based on ranked-set sampling," <i>Journal of Statistical Computation and Simulation</i> , In Press. Muller, M., de Almeida Correia, G. H., Park, S., Zhang, Y., Fusco, B., & Lee, R. (2025). "Strategic sustainability assessment of rideshare and automated vehicles using the analytical hierarchy process (AHP)," <i>Research in Transportation Business & Management</i> , 60, 101336. Muller, M., de Almeida Correia, G. H., Park, S., Zhang, Y., Fusco, B., & Lee, R. (2024). "Enhancement of the Impacts 2050 Model to Enable a Whole System Sustainability Assessment of Rideshare," <i>Multimodal Transportation</i> , 3(4), 100171. Scolio, M., Kremer, P., Zhang, Y., and Shakya, K. M. (2024). "Spatial-temporal modeling of the relationship between surface temperature and air temperature in metropolitan urban systems," <i>Urban Climate</i> , 55, 101921. Frey, J. and Zhang, Y. (2023). "Melded Confidence Intervals Do Not Provide Guaranteed Coverage," <i>The American Statistician</i> , 78(3), 273-279. Frey, J. and Zhang, Y. (2023). "Nonparametric Maximum Likelihood Estimation of the Distribution Function Using Ranked-Set Sampling," <i>Journal of the Korean Statistical Society</i> , 52(4), 901-920.	

Frey, J. and Zhang, Y., (2021) “Robust Confidence Intervals for a Proportion Using Ranked-Set Sampling,” *Journal of the Korean Statistical Society*, 50(4), 1009-1028.

Frey, J. and Zhang, Y., (2019) “Improved Exact Confidence Intervals for a Proportion Using Ranked-Set Sampling,” *Journal of the Korean Statistical Society*, 48(3), 493-501.

Frey, J. and Zhang, Y. (2019) “An Omnibus Two-Sample Test for Ranked-Set Sampling Data,” *Journal of the Korean Statistical Society*, 48(1), 106-116.

Shakya1, K., Peltier, R., Zhang, Y., Pandey., B. (2019) “Roadside exposure and inflammation biomarkers among a cohort of traffic police in Kathmandu, Nepal.” *International Journal of Environmental Research and Public Health*, 16(3), 377.

Kremer, P. , Larondelle, N., Zhang, Y., Pasles, E., and Haase, D. (2018) “Within-class and neighborhood effects on the relationship between composite urban classes and surface temperature, ” *Sustainability*, 10(3), 645.

Frey, J. and Zhang, Y. (2018) “An Algorithm with Applications in Ranked Set Sampling.” *Journal of Statistical Computation and Simulation*, 88(3), 471-481.

Frey, J. and Zhang, Y. (2017) “Testing Perfect Rankings in Ranked-Set Sampling with Binary Data.” *The Canadian Journal of Statistics*, 45(3), 326-339.

Frey, J. and Zhang, Y. (2017) “What Do Interpolated Nonparametric Confidence Intervals for Population Quantiles Guarantee?” *The American Statistician*, 71(4), 305-309.

PRESENTATIONS “ Robust Adjusted Wald Confidence Intervals for a Proportion Based on Ranked-Set Sampling”, *The 2024 Joint Statistical Meetings, Portland, Oregon, August 2024*.

“Nonparametric Maximum Likelihood Estimation for Distribution Functions with Ranked Set Samples”, Invited, *School of Mathematics and Statistics, Jishou University, China, June 2024*.

“Melded Confidence Intervals Do Not Provide Guaranteed Coverage”, Invited, *School of Mathematical Sciences, Dalian University of Technology, China, June 2024*.

“ Nonparametric Maximum Likelihood Estimation for Distribution Functions with Ranked Set Samples”, *The 2023 Joint Statistical Meetings, Toronto, Canada, August 2023*.

“ Robust Confidence Intervals for a Proportion Using Ranked-Set Sampling”, *The 2020 Joint Statistical Meetings, Virtual, August 2020*.

“ Improved Exact Confidence Intervals for A Proportion Using Ranked-set Sampling”, *The 2019 Joint Statistical Meetings, Denver, July 2019*.

“Hybrid Flipped Classroom: Is It for You?”, sponsored by Villanova Institute for Teaching and Learning minigrant, *2019 Teaching and Learning Strategies Program at Villanova, May 2019*.

“An Analysis of Factors that Influence Investors’ Choice for 529 College Saving Plans ”, Ryan, L. and Zhang Y., won the first place in *Villanova 5th Annual Center for Business Analytics Data Mining Competition, February 2019*.

“Deep Learning in Bone Age Assessment - Explore the Future of Radiology”, VangumalliG, D., and Zhang Y., won the first place in *Graduate Students for Astronomy, Physics, CS, Math & Stats category, Villanova 2018 Sigma Xi CRF Student Research Poster Symposium, April 2018*.

“Testing Perfect Rankings in Ranked-set Sampling with Binary Data”, Invited, *International Conference on Mathematics and Statistics (ICOMAS 2018), Memphis, May 2018*.

“An Introduction to Ranked-Set Sampling”, Invited, *The Villanova Center for Analytics of Dynamic Systems (VCADS) meeting, Villanova, February 2018*.

“What Do Interpolated Nonparametric Confidence Intervals for Population Quantiles Guarantee?”, Invited, *Department of Statistics, Oklahoma State University, November 2017*.

“Assessment of Health Effects of Particulate Pollution among Traffic Police in Kathmandu, Nepal using Biomarkers”, Shakya, K., Peltier, R., Zhang, Y., and Pandey, B.D., *The 2017 Annual International Society of Exposure Science (ISES) Meeting, Research Triangle Park, October 2017*.

“What Do Interpolated Nonparametric Confidence Intervals for Population Quantiles Guarantee?”, *The 2017 Joint Statistical Meetings, Baltimore, August 2017*.

“An Algorithm and A Strategy for Nonparametric Inference under Imperfect Rankings in Ranked-Set Sampling.” Invited, *School of Mathematical Sciences, Dalian University of Technology, China, May 2017*.

“An Algorithm with applications in Ranked Set Sampling.”, *The 2016 Joint Statistical Meetings, Chicago, August 2016*.

“Multiple comparisons and sequential testing procedures.” Invited, *Villanova Center for Analytics of Dynamic Systems, Villanova University, May 2016*.

“The Restricted Scheffe Method Using the Minimal Cone Approach for Multiple Comparisons”, *The 2015 Joint Statistical Meetings, Seattle, August 2015*.

“Restricted Scheffe Method Using Minimal Cone Approach for Multiple Comparisons.”, *The 2014 Villanova University Department of Mathematics and Statistics colloquium, December 2014*.

“Sequential Testing Procedures for Single-step Methods.”, *The 2014 Joint Statistical Meetings, Boston, August 2014*.

“Sequential Testing Procedures for Single-step Methods.”, *Oklahoma State University 25th Annual Research Symposium, February 2014*.

“Simultaneous Confidence Intervals Using the Restricted Scheffe Method.”, *2013 Oklahoma State University Statistics Department Seminar Series, April 2013*.

“Simultaneous Confidence Intervals Using the Restricted Scheffe Method.”, *Oklahoma State University 24th Annual Research Symposium, February 2013*.

SHORT COURSES “Deep Learning: Build your first Convolutional Neural Network”, *Villanova 2019 DREAMS (Discovering Resources and Exploring Advanced Mathematics and Statistics) Program, May 2019*.

“Artificial intelligence is no longer far away. Let’s build our first artificial neural network!”, *Villanova Math Discovery Boot Camp, May 2018*.

TEACHING EXPERIENCE Villanova University
STAT 1230 Introductory Statistics I
STAT 1430 Business Statistics
STAT 4310 Statistical Methods
STAT 4480 Data Mining
STAT 5700 Probability
STAT 7404 Statistical Methods
STAT 7405 Statistical Methods II
STAT 8400 Statistical Theory I
STAT 8401 Theory of Statistical Inference
STAT 8406 Regression Analysis
STAT 8480 Data Mining and Analytics
STAT 8490 Deep Learning

Oklahoma State University
STAT 2013 Elementary Statistics

DEPARTMENTAL Department Annual Faculty Evaluation Committee, 2022 - 2025
SERVICE Statistics Major Program Assessment Liaison, 2021 - present
M.S. in Applied Statistics Mentorship Program Coordinator, 2020 - present
Statistics Minor Coordinator, 2019 - present
Committee for Undergraduate Statistics Major Program, 2018 - present
DataFest Philly committee, 2018 - present
Department of Mathematics & Statistics Diversity Committee, 2017 - present
Department Hiring Committee, 2017 - 2018, 2021 - 2022, 2023.
Department Self-Study Committee: Graduate Program in Applied Statistic, 2017
M.S. in Applied Statistics Committee, 2014 - present
Committee for Undergraduate Mathematics Program, 2014 - present

UNIVERSITY University Summer Grant Faculty Review Committee, 2023 - 2026
SERVICE University Academic Integrity Panel, 2022
Faculty Mentor for Villanova Institute for Teaching and Learning, 2019 - 2020
Faculty Associate for The Villanova Center for Analytics of Dynamic Systems, 2015 - present
University Informatics and Analytics Group, 2015 - 2016
CLAS Task Force on Cluster Computing, 2014 - 2015

PROFESSIONAL Contributed session chair of the Joint Statistical Meetings, 2020
SERVICE Co-organizer of DataFest Philly, 2017 - 2019
Referee: The American Statistician,
The Annals of the Institute of Statistical Mathematics,
Computational Statistics,
Commun. Stat. - Theory Methods,
Environmental and Ecological Statistics,
Journal of Statistical Theory and Practice,
Journal of the Korean Statistical Society,
Statistical Analysis and Data Mining,
Applied Sciences, Mathematics, Metron, Sankhya.

PROFESSIONAL American Statistical Association (ASA)
SOCIETY Institute of Mathematical Statistics (IMS)
International Chinese Statistical Association (ICSA)