Rui Xie

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RESEARCH INTERESTS

Statistics, Machine Learning, Data Science, Biostatistics
Focus: *Streaming Data, Sampling, Time Series, Big Data, Distributed & Decentralized Computing, Public Health, and Engineering Statistics.*

APPOINTMENTS

Assistant Professor   Fall 2019 - Present
Department of Statistics and Data Science, College of Sciences
College of Nursing, Academic Health Sciences Center
University of Central Florida, Orlando, Florida, USA

EDUCATION

Ph.D. in Statistics, University of Georgia, *Athens, Georgia, USA*   2013 - 2019
Dissertation: Sampling for Streaming Data
Committee: Ping Ma (Advisor), T.N. Sriram (Co-advisor), Wenxuan Zhong, Yao Xie, WenZhan Song, Shuyang Bai, Abhyuday Mandal

M.S. in Statistics, University of Georgia, *Athens, Georgia, USA*   2013 - 2016

M.S. in Statistics, Georgia Institute of Technology, *Atlanta, Georgia, USA*   2011 - 2013
H. Milton School of Industrial and Systems Engineering

B.S. in Physics
B.S. in Quantitative Finance   **Xiamen University**, *Xiamen, Fujian, China*   2007 - 2011

RESEARCH GRANTS

Current

- CCRI: Grand: Virtual Experience Research Accelerator (VERA)   2023 - 2026
  National Science Foundation (NSF CISE Community Research Infrastructure (CCRI))
  Total $4,292,490 Credit to Rui Xie $90,032
  Role: Investigator (Lead PI: Welch [Nursing, CS]) Award # 2235066

- Optimizing a technology-based body and mind intervention to prevent falls and reduce health disparities in low-income populations   09/26/2022 - 06/30/2026
  NIH/ National Institute on Minority Health and Health Disparities
  Total $602,816, Credit to Rui Xie $229,589
  Role: co-I Effort: 15% (PI Ladda Thiamwong [Nursing]) Award # R01 MD018025

- Development of Light Physical Activity (LPA) guidelines for safe and effective physical activity intervention in ethnically diverse older adults 3/18/2022 - 7/31/2023
  UCF Seed Funding Program - IR: Interdisciplinary Research
  Total: $45,000
  Role: co-I (PI Ladda Thiamwong [Nursing])

- Gestational weight gain and infant birthweight among Black women: Beyond individual-level factors 7/18/2022 – 7/18/2024
  NIH/National Institute of Nursing Research
  Total: $70,890
  Role: collaborator Effort: 5% (PI: Hyer [Nursing]), Award # 1 F32 NR020295-01

- Understanding the experiences of COVID-19 survivors 03/17/2020 -present
  Drs. Diane and Thomas Andrews Faculty Research Award
  Total: $5,000
  Role: Biostatistician (PI: Brain Peach)

- Technology-based fall risk assessments in community-dwelling older adults with dementia.
  Theta Epsilon Chapter of Sigma Theta Tau International 2022 -present
  Total: $900
  Role: Co-I, Faculty Mentor (PI: Eunice Ojo)

Complete

- United Negro College Fund (UNCF) leveraging big data grant 1/1/2022- 4/20/2023
  Leveraging Big Data Analytics to Improve the Education and Workforce Outcomes of African American and Hispanic/Latino Students at HBCUs and HSIs.
  Total $15,000 Credit to Rui Xie $1,875
  Role: co-I, Effort: 12.5%

- Social stressors and inflammation: A mixed methods approach to preterm birth 8/8/2019 - 4/30/2023
  NIH/ National Institute on Minority Health and Health Disparities (NIMHD)
  Total: $ 3,011,557 Credit to Rui Xie $18,908
  Role: co-I Effort: 20% (PI: Carmen Giurgescu [Nursing]), Award # 7 R01 MD011575-05

- Technology-based fall risk assessments for older adults in low-income settings 9/30/2020 – 6/30/2022
  NIH/National Institute on Aging
  Total: $149,000 Credit to Rui Xie $15,788
  Role: co-I Effort: 9% (PI Ladda Thiamwong [Nursing]), Award # 5 R03 AG069799-02

- Exploring outcomes of FitMoms2B exercise program among African American women with high-risk pregnancy 1/11/2021 - 1/10/2022
  UCF Seed Funding Program - ER: Exploratory Research Award
  Total: $20,000
  Role: Biostatistician (PI: Jean Davis)

- Exploration of the Oral Microbiome in Non-Ventilated Hospitalized Patients 12/17/2020 - 12/16/2022
  NIH/Ruth L. Kirschstein Predoctoral Individual National Research Service Award
  Role: Collaborator (PI: Kimberly Rathbun), Award # F31 NR019518

Pending

- Stopping Elderly Accidents, Deaths, and Injuries (STEADI) in Thailand: A Cultural Adaptation and Implementation Program 2023 – 2027

NIH
Total request: $3,388,081 Effort: $445,430
Role: co-I (PI:Thiamwong)

- Enteral Feeding Intolerance and Gastric Microaspiration in Mechanically Ventilated Patients 9/1/2023 - 3/31/2027
NIH
Total request: $3,545,410 Role: co-I Effort: 13% (PI: Bourgault)

- From Microbiome to Modeling: Building on the NO-ASPIRATE Study to Inform Outcomes of Mechanical Ventilation   9/1/2023 – 3/31/2027
NIH
Total request: $3,660,871
Role: Co-I Effort: 20% (PIs: Sole & Yooseph)

- Sit Less, Move More   4/1/2023 - 3/31/2025
NIH
Total request: $160,767 Effoer: $10,242
Role: Co-I Effort: 20% (PI: Jean Davis)
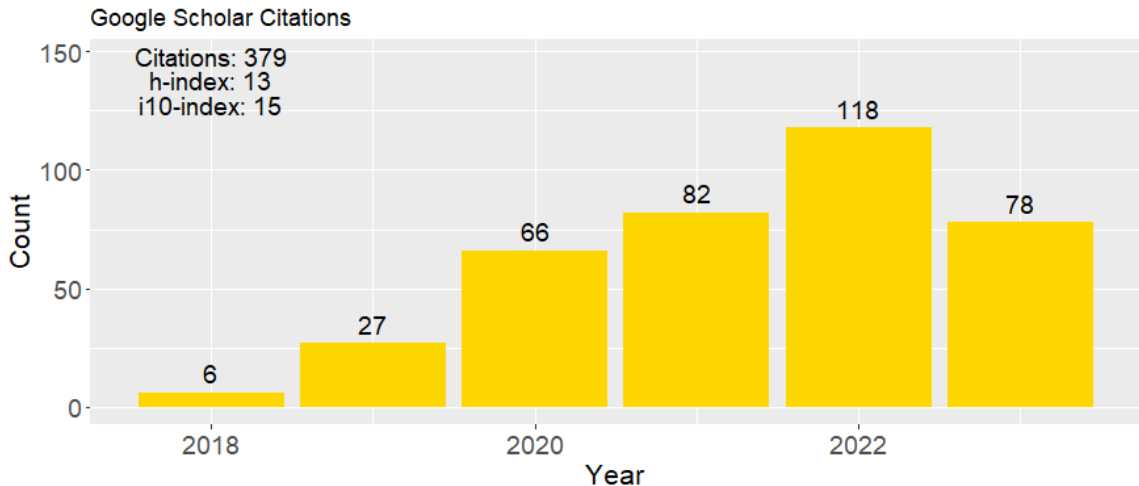
- Videoconference Acceptance and Commitment Therapy for Treatment of Depression with Cancer Survivors: A Feasibility Study   04/01/2023 - 03/31/2025
NIH
Total request: $167,118 Effoer: $14,826
Role: Co-I Effort: 20% (PI: Veronica Decker)

- Validation of a VAriable Resistance Suit (VARS) in Healthy Young Males for Potential Application in Sarcopenia Prevention and Intervention   12/01/2023 - 11/30/2025
NIH
Total request: $296,058 Effort:$12,856
Role: Co-I (PI: Joon-Hyuk Park)

PUBLICATIONS

* indicate student coauthors

Peer-reviewed journal articles or conference proceedings publications

After August 2019:

1. **Rui Xie**, Shuyang Bai and Ping Ma. Optimal sampling designs for online estimation of streaming multi-dimensional time series. Accepted, *Annals of Applied Statistics.* [Impact Factor: 1.959]

2. **Rui Xie**, Lulu Chen*, Joon-Hyuk Park, Jeffrey Stout, Ladda Thiamwong. 2023. Smoothing spline analysis of variance models: A new tool for the analysis of accelerometer data. In *2023 International Conference on Intelligent Biology and Medicine (ICIBM 2023).*

3. Ladda Thiamwong, **Rui Xie**, Norma E. Conner, Justine M. Renziehausen, Eunice Oladepe Ojo*, Jeffrey R. Stout. 2023. Body composition, fear of falling and balance performance in community-dwelling older adults, *Translational Medicine of Aging*, 2023, https://doi.org/10.1016/j.tma.2023.06.002.

4. Thiamwong, Ladda, **Rui Xie**, Joon-Hyuk Park, Renoa Choudhury*, Ayse Malatyali, Wenjun Li, Elizabeth Eckstrom, and Jeffrey R. Stout. 2023. Levels of accelerometer-based physical activity in older adults with a mismatch between physiological fall risk and fear of falling." *Journal of gerontological nursing* 49, no. 6 (2023): 41-49. [Impact Factor: 1.436]

5. Choudhury, Renoa*, Joon-Hyuk Park, Chitra Banarjee*, Ladda Thiamwong, **Rui Xie**, and Jeffrey R. Stout. 2023. Associations of mutually exclusive categories of physical activity and sedentary behavior with body composition and fall risk in older women: a cross-sectional study. *International journal of environmental research and public health* 20, no. 4 (2023): 3595. [Impact Factor: 4.614]

6. Hyer, S., Vaughan, S., Davis, J.W., **Xie, R**. , Misra, D. & Giurgescu, C. 2023. The Association of Avoidance Coping with Gestational Weight Gain among Pregnant Black Women. *Western Journal of Nursing Research.* 45 (3), 226-233 [Impact Factor: 1.774]

7. Yawen Pan*, Ladda Thiamwong, and **Rui Xie**. 2023. The effects of nurse driven mobility intervention (NDMI) on activities of daily living, mobility, fear of falling, and balance performance in hospitalized older patients: A pilot study. *Geriatric Nursing*, Volume 49, Pages 193-198. [Impact Factor: 1.901]

8. Xiaoqing Wan*, Nichole R Lighthall, and **Rui Xie**. 2022. Consistent and robust predictors of Internet Use among older adults over time identified by machine learning. *Computers in Human Behavior.* 137, 107413. [Impact Factor: 9.79]

9. Ladda Thiamwong, **Rui Xie**, Joon-Hyuk Park, Nichole Lighthall, Victoria Loerzel, Jeffrey Stout. 2022. A Technology-based Body-mind Intervention For Low-income American Older Adults. *Innovation in Aging.* 6 (Supplement 1), 273-273. [Impact Factor: 3.352]

10. Choudhury R*, Park JH, Thiamwong L, **Xie R**, Stout JR. (forthcoming/in press) 2022. Objectively Measured Physical Activity Levels and Associated Factors in Older US Women During the COVID-19 Pandemic: A Cross-sectional Study. *JMIR Aging.* 5 (3), e38172. [Impact Factor: 4.515]

11. Bourgault, AM., Rathbun, K., Sole, M.L., Deb, C., Aguirre, L., Mehta, D., and **Xie, R**. 2023. Microbiome Profile Informs Cleansing and Storage Practices for Reusable Feeding Tube Stylets in Critical Care. *Nutrition in Clinical Practice.* 38 (2), 411-424. doi:10.1002/ncp.10904 [Impact Factor: 3.204]

12. Annette Bourgault, Chirajyoti Deb, Lillian Aguirre, **Rui Xie**, Kimberly Rathbun, Veronica Pemberton, Mary Lou Sole. 2022. Microbiome Analysis Informs Small-bore Feeding Tube Stylet Cleansing And Storage Practices. *Critical Care Medicine.* 50 (1) 286. [Impact Factor: 9.296]

13. Annette Bourgault, **Rui Xie**, Steven Talbert, Mary Lou Sole. Association of Enteral Feeding with Microaspiration in Critically Ill Adults. 2022. *Applied Nursing Research.* 67, 151611. [Impact Factor: 2.257]

14. Hyer, S., Hu, W.*, Hu, M.*, Davis, J.W., **Xie, R.**, Giurgescu, C. (in press). Relationship with the Father of the Baby and Pregnancy-Related Anxiety among Pregnant Black Women. 2022. *MCN, The American Journal of Maternal Child Nursing.* 47 (4), 213-219. [Impact Factor: 1.412]

15. Jean W. Davis, Suzanne Hyer, **Rui Xie**, Valerie C. Martinez, Jenna M. Wheeler*, Dawn P. Misra, and Carmen Giurgescu. Physical Activity Changes Among Non-Hispanic Black Pregnant Women. 2022. *Public Health Nursing.* 39 (4) 744-751. [Impact factor: 1.462]

16. Xin Xing, **Rui Xie**, and Wenxuan Zhong. Model-based dictionary learning: sparse coding beyond Gaussian independent model. 2022. *Computational Statistics & Data Analysis* 166 (2022): 107336. [Impact factor: 1.681]

17. **Rui Xie** and Dazhong Wu. Tool Wear Prediction with Optimal Transport-based Transfer Learning. 2021. *Manufacturing Letters* 29, 104-107. [Impact factor: 5.533]

18. Wei Fan*, Kunpeng Liu*, **Rui Xie**, Hao Liu, Yong Ge, Yanjie Fu. FairGAE: Fair Graph Auto-Encoder towards Unbiased Graph Embeddings. 2021. *21st IEEE International Conference on Data Mining (IEEE ICDM 2021).* [Impact factor: 3.52]

19. Bourgault AM, Talbert, S, **Xie R**, Sole ML, Mehta D, Abomoelak B, Deb, C. 2021. Relationship of Enteral Feeding with Microaspiration in Critically Ill Adults. *American Journal of Critical Care*, 29(3):e1. [Impact factor: 2.105]

20. Logan Ganzen*, MeeJung Ko, Mengrui Zhang*, **Rui Xie**, Yongkai Chen*, Liyun Zhang, Rebecca James, Jeff Mumm, Richard van Rijn, Wenxuan Zhong, Chi Pui Pang, Mingzhi Zhang, Motokazu Tsujikawa, Yuk Fai Leung. 2020. Drug Screening with Zebrafish Visual Behavior Identifies Carvedilol as a Potential Treatment for Retinitis Pigmentosa. *Scientific Reports* Accepted. 2021+. 2020.07.28.225789; doi: https://doi.org/10.1101/2020.07.28.225789 [Impact factor: 4.380]

21. Fangyu Li, Fengyuan Sun, Naihao Liu, **Rui Xie**. 2021. Denoising Seismic Signal via Resampling Local Applicability Functions. Submitted, *IEEE Geoscience and Remote Sensing Letters* PP(99):1-5. DOI: 10.1109/LGRS.2020.3048110. [Impact factor: 3.966]

22. Cheng Meng*, **Rui Xie**, Xinlian Zhang, Abhyuday Mandal, Wenxuan Zhong, and Ping Ma. 2020. LowCon: A Design based subsampling in big data with application to robust linear regression. *Journal of Computational and Graphical Statistics.* DOI: 10.1080/10618600.2020.1844215 [Impact factor: 2.319]

23. Fangyu Li, **Rui Xie**, Zengyan Wang, Lulu Guo, Jin Ye, Ping Ma, WenZhan Song. 2020. Online Distributed IoT Security Monitoring with Multidimensional Streaming Big Data. *IEEE Internet of Things Journal*, vol. 7, no. 5, pp. 4387-4394, May 2020, doi: 10.1109/JIOT.2019.2962788. [Impact factor: 11.705]

24. Yanfei Lu*, Zengyan Wang*, **Rui Xie**, Jialin Zhang, Zhipeng Pan, Steven Y Liang. 2020. Bayesian optimized deep convolutional network for bearing diagnosis. *The International Journal of Advanced Manufacturing Technology* 108, pages313–322(2020). https://doi.org/10.1007/s00170-020-05390-y. [Impact factor: 3.320]

25. Yanfei Lu*, **Rui Xie**, Steven Y Liang. 2020. CEEMD-assisted kernel support vector machines for bearing diagnosis *The International Journal of Advanced Manufacturing Technology* 106, pages3063–3070(2020). https://doi.org/10.1007/s00170-019-04858-w. [Impact factor: 3.320]

26. Fangyu Li, **Rui Xie**, Bowen Yang, Lulu Guo, Ping Ma, Jianjun Shi, Jin Ye, WenZhan Song. 2019. Detection and Identification of Cyber and Physical Attacks on Distribution Power Grids with PVs: An Online High-Dimensional Data-driven Approach. *IEEE Journal of Emerging*

and Selected Topics in Power Electronics, doi: 10.1109/JESTPE.2019.2943449. [Impact factor: 4.472]

27. Yanfei Lu*, Zengyan Wang*, **Rui Xie**, Steven Liang. 2019. Bayesian Optimized Deep Convolutional Network for Electrochemical Drilling Process *Journal of Manufacturing and Materials Processing.* 2019; 3(3):57. https://doi.org/10.3390/jmmp3030057 [Impact factor: 2.57]

28. Lu, Yanfei*, **Rui Xie**, and Steven Y. Liang. 2019. CEEMD-assisted bearing degradation assessment using tight clustering. *The International Journal of Advanced Manufacturing Technology* (2019): 1-12. https://doi.org/10.1007/s00170-019-04078-2. [Impact factor: 3.320]

29. Lu, Yanfei*, **Rui Xie**, and Steven Y. Liang. 2019. Extraction of weak fault using combined dual-tree wavelet and improved MCA for rolling bearings. *The International Journal of Advanced Manufacturing Technology* (2019): 1-12. https://doi.org/10.1007/s00170-019-04065-7. [Impact factor: 3.320]

30. Lu, Yanfei*, **Rui Xie**, and Steven Y. Liang. 2019. Bearing Fault Diagnosis with Nonlinear Adaptive Dictionary Learning. *The International Journal of Advanced Manufacturing Technology* (2019): 1-13. https://doi.org/10.1007/s00170-019-03455-1. [Impact factor: 3.320]

31. **Rui Xie**, Zengyan Wang*, Shuyang Bai, Ping Ma, and Wenxuan Zhong. Online decentralized leveraging sampling for streaming multivariate time series. *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS 2019).* [Impact factor: 4.88]

Before August 2019:

32. **Rui Xie**, Mengrui Zhang*, Prahatha Venkatraman, Xinlian Zhang*, Gaonan Zhang, Robert Carmer, Skylar A. Kantola, Chi Pui Pang, Ping Ma, Mingzhi Zhang, Wenxuan Zhong, and Yuk Fai Leung. Normalization of large-scale behavioural data collected from zebrafish. *PLoS ONE* 14(2): e0212234. https://doi.org/10.1371/journal.pone.0212234 [Impact factor: 3.24]

33. **Rui Xie**, Fangyu Li, Zengyan Wang*, and WenZhan Song. Large scale randomized learning guided by physical laws with applications in full waveform inversion. *2018 IEEE Global Conference on Signal and Information Processing (GlobalSIP).* [Impact factor: 1.79]

34. Fangyu Li, **Rui Xie**, WenZhan Song, and Hui Chen. Optimal seismic reflectivity inversion: data-driven ℓ_p-loss-ℓ_q-regularization sparse regression. *IEEE Geoscience and Remote Sensing Letters*, (2018). PP. 1-5. 10.1109/LGRS.2018.2881102. [Impact factor: 3.966]

35. Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Adaptive online dictionary learning for bearing fault diagnosis. *The International Journal of Advanced Manufacturing Technology*, (2018). https://doi.org/10.1007/s00170-018-2902-0. [Impact factor: 3.320]

36. Lu, Yanfei, **Rui Xie**, and Steven Y. Liang. Detection of weak fault using sparse empirical wavelet transform for cyclic fault. *The International Journal of Advanced Manufacturing Technology*, (2018)99: 1195-1201. [Impact factor: 3.320]

37. Li, Fangyu, **Rui Xie**, Wenzhan Song, Tao Zhao, and Kurt Marfurt. Optimal ℓ_q norm regularization for sparse reflectivity inversion. *2017 SEG International Exposition and Annual Meeting.* Society of Exploration Geophysicists, (2017): 677-681.

38. Nural, Mustafa V., Michael E. Cotterell, Hao Peng, **Rui Xie**, Ping Ma, and John A. Miller. Automated predictive big data analytics using ontology based semantics. *International Journal of Big Data*, 2.2 (2015): 43-56. [Impact factor: 11.09]

Book Chapter

39. Zhang, Xinlian, **Rui Xie**, and Ping Ma. Statistical Leveraging Methods in Big Data. In: Härdle W., Lu HS., Shen X. (eds) *Handbook of Big Data Analytics.* Springer Handbooks of Computational Statistics, Springer, Cham, 2018. 51-74. https://link.springer.com/chapter/10.1007/978-3-319-18284-1_3

40. Yiwen Liu and **Rui Xie** 2023+. Statistical Principles: Common Issues in Analysis, In: Adam E. M. Eltorai and Daryl Tan-Yeung Lau (eds) *Translational Gastroenterology.* In press.

41. **Rui Xie** and Yiwen Liu. 2023+. Statistical Principles: Distributions, In: Adam E. M. Eltorai and Daryl Tan-Yeung Lau (eds) *Translational Gastroenterology.* In press.

Refereed Conference Podium/Poster/Abstract

42. de la Serna, A., **Xie, R.**, Davis, J.W., Quelly, S., Lapp, V., Misra, D., Giurgescu, C. (2023, July). The Associations Among Racial Discrimination, Perceived Stress and Birth Satisfaction Among Black Women. Poster presentation, Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) Florida Conference, Orlando, FL.

43. Wheeler, J.M.*, **Xie, R.**, Misra, D.P., Giurgescu, C. (2023, April). Mother-Father Relationship and Perceived Stress among Black Pregnant Women. [Podium presentation], Sigma Theta Tau Theta Epsilon Chapter 31st Annual Scholarship Day, Orlando, FL.

44. Davis, J.W., Hyer, S., **Xie, R.**, Wheeler, J.M., Martinez, V., Misra, D., Wilbur, J., Giurgescu, C. Among African American pregnant people the association of neighborhood disorder with depressive symptoms was modified by physical activity. [Poster] *2022 APHA Annual Meeting.* American Public Health Association. Boston, MA.

45. Hyer, S., Vaughan, S., **Xie, R.**, Misra, D. & Giurgescu, C. Neighborhood stressors, depressive symptoms, and gestational weight gain among Black women. [Podium Presentation]. 2022, September 15-17. *Council for the Advancement of Nursing Science (CANS) State of the Science Conference*, Washington, DC.

46. Hyer, S., Hu, W., **Xie R**, Davis, J.W., Giurgescu, C. (2022, March). Does avoidance coping effect gestational weight gain among pregnant Black women? [Poster Presentation]. Annual Midwest Nursing Research Society Annual Research Conference, Schaumburg, IL

47. Bourgault AM, Deb C, Aguirre L, **Xie R**, Emery-Rathbun K, Pemberton*, V. Sole ML. Microbiome Analysis Informs Small-Bore Feeding Tube Stylet Cleansing and Storage Practices. 2022. *The Society of Critical Care Medicine's (SCCM) 51st Critical Care Congress.*

48. Aleatha Rossler*, Ladda Thiamwong, **Rui Xie**, Renoa Choudhury, Oscar Garcia, Joon Park, Jeffrey Stout. Fear of Falling, Depression and Fall Risk in Older Adults. *Gerontological Society of America 2021 Annual Scientific Meeting.*

49. Renoa Choudhury*, Ladda Thiamwong, Oscar Garcia*, **Rui Xie**, Jeffrey R. Stout, Joon-Hyuk Park. Physical Activity Intensity in Older Adults during COVID-19 Pandemic: An Accelerometers-Based Assessment. *Gerontological Society of America 2021 Annual Scientific Meeting.*

50. Ladda Thiamwong, Oscar Garcia*, Renoa Choudhury*, Joon-Hyuk Park, Aleatha Rossler*, Jeffrey Stout, **Rui Xie**. Feasibility and Acceptability of the Technology-Based Fall Risk Assessments for Older Adults. *Gerontological Society of America 2021 Annual Scientific Meeting.*

51. Ladda Thiamwong, **Rui Xie**, Renoa Choudhury*, Joon-Hyuk Park, Oscar Garcia*, Jeffrey Stout. Associations among Fall Risk Appraisal, Body Composition, and Physical Activity in Older Adults. *Gerontological Society of America 2021 Annual Scientific Meeting.*

Preprints and Under Review

52. Thiamwong, Ladda, Sirinart Tongsiri, Jom Suwanno, **Rui Xie**, Boon Peng Ng, Joon-Hyuk Park, Wenjun Li, and Elizabeth Eckstrom. 2023. Cultural Adaptation and Pilot Testing of the CDC's Stopping Elderly Accidents, Deaths, and Injuries (STEADI) Program for Older Adults in a Low and Middle-Income Country. *Preprints.org 2023, 2023050842.* https://doi.org/10.20944/preprints202305.0842.v1.

53. Jean Davis, **Rui Xie**, Suzanne Hyer, Joellen Edwards. Disabled Veterans' Physical Activity Habits, Self-Regulation, and Social Support: A Pilot Study. Under Review, *Journal of the American Association of Nurse Practitioners.*

54. Renoa Choudhury, Ladda Thiamwong, **Rui Xie**, Jeffrey R. Stout, and Joon-Hyuk Park. Correlates of Objectively Measured Physical Activity among Older US Women During the COVID-19 Pandemic. Submitted. *Journal of Aging and Health.*

55. Jean Davis, Suzanne Hyer, **Rui Xie**, Valerie Maritinez, Jenna M. Wheeler, Dawn P. Misra, and Carmen Giurgescu. Physical Activity Attenuates the Impact of Neighborhood on Depressive Symptoms Among African American Pregnant Women. In preparation.

HONORS AND AWARDS
for research/creative work, teaching, public engagement, and service

- **Travel Award** Broadening Participation: 2023 Mathematical and Physical Sciences (MPS Workshop) for Young Investigators   2023
  National Science Foundation & University of Florida, Alexandria, VA

- **Affordability Counts Recognized Faculty**, University of Central Florida   2023

- **AACN Research Abstract Award**, American Association of Critical Care Nurses.   2021
  Relationship of Enteral Feeding With Microaspiration in Critically Ill Adults

- **ASA Computing/Graphics Student Paper Award**   2019
  American Statistical Association.

- **ICSA Student Paper Award**, International Chinese Statistical Association.   2018

- **Travel Grant**, The 2018 Applied Statistics Symposium.   2018
  International Chinese Statistical Association (ICSA), New Brunswick, NJ, USA

- **Mu Sigma Rho**: The National Statistics Honorary Society.   2018

- **Travel Grant**, May Institute: Computation and statistics for mass spectrometry and proteomics. Northeastern University, Boston, MA, USA   2018

- **Georgia Statistics Day Student Poster Award**.   2017
  Emory University, Atlanta, GA, USA

- **Outstanding Teaching Award**, University of Georgia.   2017

PRESENTATION

- Invited Virtual Presentation, 6th International Conference on Econometrics and Statistics (EcoSta 2023)   2023/08/03
  Optimal transport-based domain adaptation for sensor data with application in smart manufacturing Waseda University, Tokyo, Japan

- Conference Presentation, International Conference on Intelligent Biology and Medicine 2023 (ICIBM 2023)   2023/6/17
  Smoothing spline analysis of variance models: A new tool for the analysis of accelerometer data. Saint Petersburg, FL, USA

- Invited Virtual Presentation, The 15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2022)   2022/12/19

  Optimal Online data selection and estimation for multivariate streaming time series with Application to Power Grid Sensor Data King's College London, London, England

- Invited Presentation, Georgia Statistics Day 2022   2022/10/28

  Optimal Transport-based Transfer Learning For Smart Manufacturing University of Georgia, Athens, GA, USA

- Department of Statistics & Data Science Colloquium Series   2022/10/21

  Optimal Transport-based Transfer Learning For Smart Manufacturing University of Central Florida, Orlando, FL, USA

- Invited Poster Presentation, JSM 2022 Joint Statistical Meetings.   2022/08/07

  American Statistical Association *Optimal Sampling Designs For Online Estimation Of Streaming Multidimensional Time Series* Washington, D.C., USA

- Department of Epidemiology & Biostatistics Seminar   2022/04/27

  Optimal sampling designs for online estimation of streaming multi-dimensional time series University of Arizona, Tucson, Arizona, USA

- Department of Statistics & Data Science Colloquium Series   2021/11/05

  Optimal sampling designs for online estimation of streaming multi-dimensional time series University of Central Florida, Orlando, FL, USA

- Invited Presentation, The 34th New England Statistics Symposium   2021/09/30

  Optimal sampling designs for online estimation of streaming multi-dimensional time series University of Rhode Island, South Kingstown, Rhode Island, USA

- Invited Presentation, The 2021 ICSA Applied Statistics Symposium, International Chinese Statistical Association (ICSA)   2021/09/15

  Optimal sampling designs for online estimation of streaming multi-dimensional time series Virtual Conference

- Invited Presentation, 4th International Conference on Econometrics and Statistics (EcoSta 2021)   2021/06/25

  Optimal sampling designs for online estimation of streaming multi-dimensional time series Hong Kong University of Science and Technology, Hong Kong, China

- Invited Presentation, KDD Group   2020/10/23

  Sampling for Streaming Data. University of Central Florida, Orlando, FL, USA

- Department of Statistics & Data Science Colloquium Series   2020/09/11

  Large Scale Randomized Learning Guided by Physical Laws with Applications in Full Waveform Inversion. University of Central Florida, Orlando, FL, USA

- Department of Statistics & Data Science Colloquium Series   2019/09/27

  Online Decentralized Leverage Score Sampling for Streaming Multidimensional Time Series. University of Central Florida, Orlando, FL, USA

- Invited Seminar, Department of Statistics   2019/08/22

  Online Leverage-based Sequential Sampling for Streaming Time Series Data. Rutgers University, New Brunswick, New Jersey, USA

- Invited Statistics Seminar, Department of Statistics   2019/02/14

  Online Leverage-based Sequential Sampling for Streaming Time Series Data. University of Nebraska Lincoln, Lincoln, Nebraska, USA

- Invited DMS Colloquium, College of Sciences and Mathematics   2019/02/06

  Online Leverage-based Sequential Sampling for Streaming Time Series Data. Auburn University, Auburn, Alabama, USA

- Invited Statistics Seminar, Department of Statistics   2019/01/31

  Online Leverage-based Sequential Sampling for Streaming Time Series Data. Kansas State University, Manhattan, KS, USA

- Invited Research Presentation, Department of Statistics   2019/01/21

  Online Leverage-based Sequential Sampling for Streaming Time Series Data. University of Central Florida, Orlando, FL, USA

- Invited Seminar, School of Mathematical Sciences   2019/01/14

  Online Leverage-based Sequential Sampling for Streaming Time Series Data. Rochester Institute of Technology, Rochester, NY, USA

- Invited Presentation, Georgia Statistics Day 2019.   2019/10/14

  Online Decentralized Leverage Score Sampling for Streaming Multidimensional Time Series. Georgia Institute of Technology, Atlanta, GA, USA

- Invited Presentation, JSM 2019 Joint Statistical Meetings - American Statistical Association. 2019/07/28

  Online Decentralized Leverage Score Sampling for Streaming Multidimensional Time Series. Denver, CO, USA

- Invited Presentation, ICSA 2018 Applied Statistics Symposium.   2018/06/15

  Online sequential leveraging sampling method for streaming time series data. New Brunswick, NJ, USA

- Poster, The University of Georgia/Clemson University Joint Seminar.   2018/03/29

  Sequential leveraging sampling method for streaming time series data. University of Georgia, Athens, GA, USA

- Poster, Georgia Statistics Day.   2017/10/9

  Sequential leveraging sampling method for streaming data. Emory University, Atlanta, GA, USA

- Invited Presentation, the Center for Cyber-Physical Systems (CCPS), UGA.   2017/03/15

  Large scale randomized learning with applications in full waveform inversion. Athens, GA, USA

TEACHING AND CURRICULUM DEVELOPMENT

University of Central Florida

Student Perception of Instruction (SPI)

Term	# Students	SPI	Department	College	UCF
Spring 2023	36	**4.42**	4.23	4.09	4.17
Fall 2022	45	**4.38**	4.29	4.08	4.15
Spring 2022	56	**4.25**	4.33	4.08	4.17
Fall 2021	4	**4.75**	3.83	4.09	4.13
Spring 2021	-	**-**	-	-	-
Fall 2020	47	**4.26**	4.04	4.06	4.16
Spring 2020	57	**4.46**	4.12	4.14	4.21
Fall 2019	81	**4.11**	4.01	4.01	4.14

- **STA 6704, Data Mining Methodology II**
  Graduate. Unsupervised learning methods such as *cluster analysis, association analysis* and newly developed tools, such as *deep learning* and large language model. The Enterprise Miner (R or Python) was used.

Term	Enrollment
Spring 2023	24

- **STA 6908, Independent Study**

Term	Enrollment	Course Title
Spring 2023	1	Introduction to Deep Learning
Fall 2022	1	Basic Concepts for Biostatistics
Spring 2022	1	Basic Concepts for Biostatistics

- **STA 6971, Thesis Research**   Spring 2023
  Master Thesis: *Smoothing Spline Analysis of Variance Models on Actigraph Data*

- **STA 5703, Data Mining Methodology I**
  Graduate. Supervised data mining tools including boosting trees, SV machine, regression, and neural network. The Enterprise Miner (R or Python) was used.

Term	Enrollment
Fall 2022	36
Fall 2020	42
Fall 2019	37

- **STA 7920, Statistical Colloquium**
  Graduate. Introduces students to new variety of topics in statistics and big data analytics.

Term	Enrollment
Spring 2022	22
Fall 2022	25

- **STA 7239, Dimension Reduction in Regression**
  Graduate. Reducing the number of random variables/features in regression, feature selection and extraction, kernel principal component analysis, locally linear embedding.
  Fall 2021, Enrollment 6

- **STA 5104, Advanced Computer Processing of Statistical Data**
  Graduate. Use of SAS and other statistical software packages; data manipulation; graphical data presentation; data analysis; creating analytical reports.
  Fall 2020, Enrollment 28

- **STA 4322, Statistical Theory II**
  Undergraduate. Conditional distributions, sums of random variables. Chebyshev's inequality, central limit theorem, method of movements, maximum likelihood, confidence intervals, hypothesis testing, two random variables transformations.

Term	Enrollment
Spring 2022	52
Spring 2020	72

- **STA 4912, Directed Independent Research**
  Undergraduate. Introduction to Machine Learning.

- **STA 4321, Statistical Theory I**
  Undergraduate. Probability axioms, discrete and continuous sample spaces, conditional probability, independence, one-dimensional random variables, moment generating functions, transformations, jointly distributed random variables.
  Fall 2019, Enrollment 62

Course Development and Revision

- Developed **STA 6366 Statistical Methodology for Data Science I**
  Graduate-level PhD core course.

- Developed **STA 6367 Statistical Methodology for Data Science II**
  Graduate-level PhD core course.

- Developed **ISC 4241 Data Science I**
  UCF Data Science Curriculum. Undergraduate-level.

- Revised syllabus **STA 6705 - Data Mining Methodology III**. Graduate-level PhD elective course.

Qualifying/candidacy exam committees

Ph.D. Big Data Analytics Qualifying exam committee:
August 2023, August 2021, January 2021, August 2020

Statistics and Data Science (MS) comprehensive exam committee:
January 2022, August 2021

University of Georgia

- Guest Lecture Graduate Courses CSEE 8300, **Principles of Cyber-Physical Systems** Fall 2017
- Guest Lecture Graduate Courses STAT 6280, **Multivariate Time Series Analysis** Spring 2015
- Guest Lecture Undergraduate Courses FYOS 1001, **First-Year Odyssey Seminars** Fall 2017
- Guest Lecture Undergraduate Courses STAT 4280, **Applied Time Series Analysis** Spring 2016

ADVISING AND MENTORING

- MS Thesis Committee **Chair** Lulu Chen (Statistics) Fall 2022 - Spring 2023
- PhD Dissertation Committee Committee **Chair** Yi Liu (Big Data Analytics) Spring 2023 - Present
- Postdoctoral Scholar **Chair** (Preeminent Postdoctoral Program Award, College of Nursing) Summer 2023 - Present
- MS Thesis Committee Member Poyu Zhang (Civil, Environmental, and Construction Engineering) Spring 2023 - Present
- MS Thesis Committee Member Shahabeddin Abbaspour Tazehkand (Statistics and Data Science) Fall 2023 - Present
- PhD Dissertation Committee Member Nahim Dewan (Public Affairs) Spring 2023 - Present
- PhD Dissertation Committee Member Jenna Wheeler (Nursing) Fall 2022 - Summer 2023
- PhD Dissertation Committee Member Jongjin Kim (Big Data Analytics) Spring 2023 - Present
- PhD Dissertation Committee Member Christopher Schoborg (Big Data Analytics) Spring 2023 - Present
- PhD Dissertation Committee Member Wei Fan (Computer Science) Spring 2023 - Present
- PhD Dissertation Committee Member Ying Su (Big Data Analytics) Spring 2023 - Present
- PhD Dissertation Committee Member Yunshu Wang (Big Data Analytics) Fall 2019 - Summer 2020

- PhD Dissertation Committee Member Jianbin Zhu (Big Data Analytics)   Fall 2019 - Spring 2023
- PhD Dissertation Committee Member Meixi Yu (Education)   Fall 2020 - Fall 2022
- PhD Dissertation Committee Member Xiaoqing Wan (Psychology)   Spring 2021 - Fall 2022
- PhD Dissertation Committee Member Dongjie Wang (Computer Science)   Fall 2021 - Present
- PhD Dissertation Committee Member Jennifer Simmons (Nursing)   Fall 2021 - Present
- PhD Dissertation Committee Member Camilla Escalera (Nursing)   Fall 2021 - Spring 2023
- PhD Dissertation Committee Member Mahdi Mirhosseini (Big Data Analytics) Fall 2021 - Present
- PhD Dissertation Committee Member Amanda De La Serna (Nursing)   Spring 2022 - Spring 2023
- PhD Dissertation Committee Member Ngoc Ty Nguyen (Big Data Analytics) Spring 2022 - Present
- PhD Dissertation Committee Member Ziyang Zhang (Mechanical Engineering)   Spring 2022 - Fall 2022
- Honors Undergraduate Thesis Committee Member Kevin Dominique   Summer 2023 - Present
- Undergraduate Independent Research Yihang Li   Spring 2020

SERVICE AND PUBLIC OUTREACH

Service To The University/College/Department

- College – Research Incentive Award (RIA) Selection Committee   Fall 2023 - Present
- Department Committee – Graduate Programs   Fall 2022 - Fall 2023
- Department Committee – Graduate Curriculum Committee   Fall 2023 - Present
- Department Committee – Bylaws   Fall 2022 - Fall 2023
- Department Committee – Assessment (Ph.D. Big Data Analytics)   Fall 2022 - Spring 2023
- Department Committee – Colloquium Committee **co-Chair**   Fall 2022 - Spring 2023
- Department Committee – Colloquium Committee   Fall 2021 - Spring 2022
- Department Committee – Graduate Programs   Fall 2021 - Spring 2022
- Department Committee – Graduate Curriculum Committee   Fall 2021 - Spring 2022
- Department Committee – Assessment (B.S. Data Science)   Fall 2021 - Spring 2022
- Department Committee – Search Committee   Spring 2021
- OUC/UCF - Meter Data Science Competition, UCF Liaison   September 2020 - March 2021
- Department Committee – Promotion and Tenure Revision Committee   Spring 2021
- Department Committee – Colloquium Committee **Chair**   Fall 2020 - Spring 2021
- Department Committee – Assessment (Ph.D. Big Data Analytics)   Fall 2020 - Spring 2021
- Department Committee – Assessment (M.S. Statistical Computing)   Fall 2020 - Spring 2021
- Department Committee – Assessment (B.S. Statistics)   Fall 2019 - Spring 2020
- Department Committee – Assessment (B.S. Actuarial Sciences)   Fall 2019 - Spring 2020
- Department Committee – Assessment (Ph.D. Big Data Analytics)   Fall 2019 - Spring 2020
- Department Committee – Assessment (M.S. Statistical Computing)   Fall 2019 - Spring 2020

Service To The Discipline/Profession/Interdisciplinary Area(s)

- **Editorial Board** of Computational Genomics as Review Editor for Frontiers in Genetics June 2020 - Present

Reviewer for Journals

- IEEE Transactions on Signal Processing
- Bernoulli
- Sequential Analysis
- Journal of Graphical and Computational Statistics
- ACM Transactions on Sensor Networks
- Journal of Applied Statistics
- International Journal of Forecasting
- Journal of Systems Science & Complexity
- Journal of the American Statistical Association
- Environmental and Ecological Statistics
- Journal of Statistical Theory and Practice
- Statistical Applications in Genetics and Molecular Biology
- Sankhya B
- PLOS One
- Journal of Intelligent Manufacturing
- Journal of Manufacturing Systems
- Sensors
- International Journal of Environmental Research and Public Health
- Computational Statistics and Data Analysis
- Applied Sciences
- Machines
- Journal of Systems Science & Complexity
- International Journal of Forecasting
- Entropy
- Measurement
- Frontiers Environmental Science
- Diagnostics

Review for Book Chapter

- "Handbook of Research on Applied Cybernetics and Systems Science," *IGI Global*, 2017

Organization Membership

- American Statistical Association (ASA)   2017 – Present
- International Chinese Statistical Association (ICSA)   2017 – Present

- Gerontological Society of America (GSA)   2023 – Present
- Institute of Electrical and Electronics Engineers (IEEE)   2018 – 2020
- IEEE Signal Processing Society   2018 – 2020
- The Computer Vision Foundation   2019 – Present
- The New England Statistical Society   2021 – Present

Public And Other Service

- UCF Faculty Liaison, Orlando Utilities Commission (OUC)/University of Central Florida (UCF) - Smart Meter Data Science Competition.   September 2020 - March 2021
- Judge, Georgia Science and Engineering Fair   May, 2019
- Volunteer, Georgia Statistics Day 2018   2018/10/26
  University of Georgia, Athens, GA, USA
- Invited Speaker, Lambert High School   2018/2/9
  Suwanee, GA, USA
- Invited Speaker, The Gwinnett School of Mathematics, Science, and Technology,   2017/11/19
  Lawrenceville, GA, USA
- Volunteer, Georgia Statistics Day 2015   2015/10/30
  University of Georgia, Athens, GA, USA