Zhou (Joe) Lan[1]

CONTACT INFORMATION	75 Francis St, MRB 208C Boston, MA 02115, USA	*Voice:* 617-732-6467 *Personal Website:* https://zhoulan-radiology.bwh.harvard.edu/ *Personal E-mail:* zhou.joe.lan@gmail.com *Working Email:* zlan@bwh.harvard.edu

RESEARCH INTERESTS

Bayesian Methods and Computing, Spatial Statistics

APPLICATION AREAS

Radiology, Neuroimaging, HIV Prevention, Clinical Studies

APPOINTMENTS

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Instructor in Medicine; Biostatistics Investigator   **Oct, 2022 - present**

Center for Outcomes Research and Evaluation, Yale University, New Haven, Connecticut

Senior Statistician   **July, 2020 - Sep, 2022**

Department of Statistics, Pennsylvania State University, State College, Pennsylvania

Bruce Lindsay Visiting Assistant Professor   **August, 2019 - July, 2020**

Global Statistical Sciences, Eli Lilly and Company, Indianapolis, Indiana

Ph.D. Statistics Intern   **May, 2018 - August, 2018**

Ventana Medical Systems, Inc., part of Roche Tissues Diagnostics, Mountain View, California

Imaging Scientist Intern   **May, 2016 - July, 2016**

EDUCATION

North Carolina State University, Raleigh, North Carolina

Ph.D. in Statistics, July 2019

- Dissertation Topic: *Spatial Modeling of Positive Definite Matrices and Its Applications to Diffusion Tensor Imaging*
  - Thesis Advisor: Brian J Reich
  - Committee Members: Ana-Maria Staicu, Ryan Martin, Luo Xiao
- Paige Plagge Award Laureate: Given for good citizenship to *"a graduate student with an outstanding academic record, who in the judgment of the committee has especially enhanced the life of fellow students with encouragement, generosity and/or humor."*

Georgia Institute of Technology, Atlanta, Georgia

M.S., Statistics (Mathematics), May 2015

Zhejiang University, Hangzhou, China

B.S., Applied Biological Science, May 2012

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[1]Updated on January 2, 2024

- **National Awards**

  - 2019 Winner of ICSA 2019 Applied Statistics Symposium Student Paper Competition
  - 2019 Winner of ASA Mental Health Statistics Student Paper Competition (Accept)
  - 2019 Winner of ASA Statistics in Imaging Student Paper Competition (Not accept due to the ASA one section award policy)
  - 2017 Joint Statistical Meetings Statistical Significance Poster Competition Winners

- **University Awards**

  - 2019 Winner of North Carolina State University Paige Plagge Award
  - 2018 North Carolina State University Mentoring for Diversity Retention Fellowship
  - 2011 Pohang University of Science and Technology (POSTECH) Research Scholarship
  - 2008-2012 Zhejiang University Outstanding Students Awards

Peer-Reviewed
Publications

Full list on Complete List of Published Work in MyBibliography
https://www.ncbi.nlm.nih.gov/myncbi/zhou.lan.1/bibliography/public/

- **Biostatistical/Statistical Methodology**

  <u>Zhou Lan</u>, Alexander Turchin, "Impact of Possible Errors in NLP-Derived Data on Downstream Epidemiologic Analysis", *JAMIA Open* **6**, 4 (2023+). (DOI: 10.1093/jamiaopen/ooad111)

  <u>Zhou Lan</u>, Le Bao, "Multivariate Spatial Modeling for Predicting Missing HIV Prevalence Rates Among Key Populations", *Journal of the Royal Statistical Society Series A (Statistics in Society)* **Accepted**, (2023+). (DOI: 10.1093/jrsssa/qnad113)

  <u>Zhou Lan</u>, "Correlated Wishart Matrices Classification via an Expectation-Maximization Composite Likelihood-Based Algorithm", *Statistics and Its Interface* **Accepted**, (2022+).

  <u>Zhou Lan</u>, Brian J Reich, Joseph Guinness, Dipankar Bandyopadhyay, Liangsuo Ma, and F Gerard Moeller, "Geostatistical Modeling of Positive Definite Matrices and Its Applications to Diffusion Tensor Imaging", *Biometrics* **78**, 2 (2022). (This paper has won 2017 Joint Statistical Meetings (JSM) Statistical Significance Poster Competition Winners and 2019 Winner of ICSA 2019 Applied Statistics Symposium Student Paper Competition)
  (DOI: 10.1111/biom.13445)

  <u>Zhou Lan</u>, Brian J Reich, and Dipankar Bandyopadhyay, "Probabilistic Diffusion MRI Fiber Tracking Using Directed Acyclic Graph Auto-Regression for Positive Definite Matrices", *Journal of Statistical Research* **55**, 1 (2021).
  (DOI: 10.47302/jsr.2021550110)

  <u>Zhou Lan</u>, Brian J Reich, and Dipankar Bandyopadhyay, "A spatial Bayesian semiparametric mixture model of positive defnite matrices for diffusion tensor imaging", *Canadian Journal of Statistics* **49**, 1 (2021). (This paper has won 2019 ASA Student Paper Competition of **both** Mental Health Statistics and Statistics in Imaging)
  (DOI: 10.1002/cjs.11601)

  <u>Zhou Lan</u>, Yize Zhao, Jian Kang, Tianwei Yu, "Bayesian network feature finder (BANFF): an R package for gene network feature selection", *Bioinformatics* **32**, 23 (2016).
  (DOI: 10.1093/bioinformatics/btw522)

- **Clinical/Scientific Applications**

Behnood Bikdeli, Antoine Bejjani, Candrika D Khairani, Darsiya Krishnathasan, Julia Davies, Nicole D Porio, Anthony Tristani, Andre Armero, Ali Assi, Victor Nauffal, Umberto Cambia, Zaid Almarzooq, Eric Wei, Aditya Achanta, Sirus Jesudasen, Bruce Tiu, Geno J Merli, Orly Leiva, John Fanikos, Aditya Sharma, Alec Vishnevsky, Judith A Hsia, Mark Nehler, James Welker, Marc P Bonaca, Brett Carroll, <u>Zhou Lan</u>, Samuel Goldhaber, Gregory Piazza, "Ninety-Day Adjudicated Cardiovascular Events in Patients With Covid-19: Association With Vaccination Status and Changes Over Time in the Corona-VTE Network Study", *Circulation* **148**, Issue Supplement 1 (2023).
(https://www.ahajournals.org/doi/abs/10.1161/circ.148.suppl1.17286)

Behnood Bikdeli, Darsiya Krishnathasan, Antoine Bejjani, Candrika D Khairani, Nicole D Porio, Julia Davies, Andre Armero, Anthony Tristani, Ali Assi, Victor Nauffal, Umberto Cambia, Zaid Almarzooq, Eric Wei, Aditya Achanta, Sirus Jesudasen, Bruce Tiu, Geno J Merli, John Fanikos, Alec Vishnevsky, Aditya Sharma, Mark Nehler, Judith A Hsia, James Welker, Brett Carroll, Marc P Bonaca, <u>Zhou Lan</u>, Samuel Goldhaber, Gregory Piazza, CORONA-VTE Network Investigators, "Ninety-Day Thrombotic Events in Patients With COVID-19, Association With Vaccination Status, and Changes Over Time: The Corona-VTE Network Study", *Circulation* **148**, Issue Supplement 1 (2023).
(https://www.ahajournals.org/doi/abs/10.1161/circ.148.suppl1.17282)

B Bikdeli, D Krishnathasan, C D Khairani, A Bejjani, A Tristani, N Porio, A Assi, U Campia, E Wei, B Tiu, J Hsia, A Vishnevsky, <u>Z Lan</u>, S Goldhaber, G Piazza, CORONA-VTE Investigators, "Adjudicated cardiovascular events in a cotemporary multicenter cohort of patients with COVID-19: findings from the CORONA-VTE Registry", *European Heart Journal* **44**, Issue Supplement 2 (2023).
(https://doi.org/10.1093/eurheartj/ehad655.1223)

B Bikdeli, A Bejjani, C D Khairani, D Krishnathasan, A Armero, J Davies, A Assi, U Campia, Z Almarzooq, J Welker, A Sharma, B Carroll, <u>Z Lan</u>, S Goldhaber, G Piazza CORONA-VTE Investigators, "Adjudicated thrombotic events in a cotemporary multicenter cohort of patients with COVID-19: findings from the CORONA-VTE Registry", *European Heart Journal* **44**, Issue Supplement 2 (2023).
(https://doi.org/10.1093/eurheartj/ehad655.2062)

Allyson L. Chesebro, Nita Amornsiripanitch, <u>Zhou Lan</u>, Camden P. Bay, Sona A. Chikarmane, "Experience of a single healthcare system with screening mammography before and after COVID-19 shutdown", *Clinical Imaging* **101**, (2023).
(doi:10.1016/j.clinimag.2023.06.005)

Behnood Bikdeli, Candrika D Khairani, Darsiya Krishnathasan, Antoine Bejjani, Andre Armero, Anthony Tristani, Julia Davies, Nicole Porio, Ali A Assi, Victor Nauffal, Umberto Campia, Zaid Almarzooq, Eric Wei, Aditya Achanta, Sirus J Jesudasen, Bruce C Tiu, Geno J Merli, Orly Leiva, John Fanikos, Aditya Sharma, Alec Vishnevsky, Judith Hsia, Mark R Nehler, James Welker, Marc P Bonaca, Brett J Carroll, <u>Zhou Lan</u>, Samuel Z Goldhaber, Gregory Piazza; CORONA-VTE-Network Investigators, "Major cardiovascular events after COVID-19, event rates post-vaccination, antiviral or anti-inflammatory therapy, and temporal trends: Rationale and methodology of the CORONA-VTE-Network study", *Thrombosis Research* **228**, (2023).
(doi:10.1016/j.thromres.2023.05.019)

Ezra A. Burch, Sharath K. Bhagavatula, Fiona E. Malone, Ryan R. Reichert, Kemal Tuncali, Vincent M. Levesque, <u>Zhou Lan</u>, William T. Sticka, Paul B. Shyn, "Tumor and ablation margin visibility during cryoablation of musculoskeletal tumors: comparing intraprocedural PET/CT versus CT-only images", *Journal of Vascular and Interventional Radiology* **34**, 8 (2023).
(doi:10.1016/j.jvir.2023.03.034)

C. Justin Brown, PharmD; Lee-Shing Chang, MD; Naoshi Hosomura, DDS, DMSc, MBA; Shervin Malmasi, PhD; Fritha Morrison, PhD; Maria Shubina, ScD; <u>Zhou Lan, PhD</u>; Alexander Turchin, MD, MS , "Assessment of Sex Disparities in Nonacceptance of Statin Therapy and Low-Density Lipoprotein Cholesterol Levels Among Patients at High Cardiovascular Risk", *JAMA Network Open* **6**, 2 (2023).
(doi:10.1001/jamanetworkopen.2023.1047)

Philip W Chui, <u>Zhou Lan</u>, James V Freeman, Alan D Enriquez, Rohan Khera, Joseph G Akar, Fred A Masoudi, Emily L Ong, Jeptha P Curtis, "Variation in hospital use of cardiac resynchronization therapy-defibrillator among eligible patients and association with clinical outcomes", *Heart Rhythm* **20**, 7 (2023).
(DOI: 10.1016/j.hrthm.2023.03.022)

Borne, Ryan T., Paul Varosy, <u>Zhou Lan</u>, Frederick A. Masoudi, Jeptha P. Curtis, Daniel D. Matlock, and Pamela N. Peterson, "Trends in Use of Single-vs Dual-Chamber Implantable Cardioverter-Defibrillators Among Patients Without a Pacing Indication, 2010-2018", *JAMA Network Open* **5**, 3 (2022).
(DOI:10.1001/jamanetworkopen.2022.3429)

Hai-Tao Mao, Da-Hui Wang, <u>Zhou Lan</u>, Hong Zhou, Wan-Xi Yang, "Gene expression profiles of prohibitin in testes of Octopus tankahkeei (ot-phb) revealing its possible role during spermiogenesis", *Molecular biology reports* **39**, 5 (2012).
(DOI: 10.1007/s11033-011-1355-4)

<u>Zhou Lan</u> and Wan-Xi Yang, "Nanoparticles and spermatogenesis: how do nanoparticles affect spermatogenesis and penetrate the bloodtestis barrier", *Nanomedicine* **7**, 4 (2012).
(DOI: 10.2217/nnm.12.20.)

PATENTS   Chukka Srinivas, <u>Zhou Lan</u>, "System and Method for Color Deconvolution of a Slide Image to Assist in the Analysis of Tissue", , US20200167965A1 (Priority Date: 2017/08/04; Publication Date: 5/28/2020).

PAPERS UNDER REVIEW/WORKING   Xiaoxiao Li, <u>Zhou Lan</u>, Matthew J Ferrari, and Murali Haran , "Measles Burden Estimation Using Local Gaussian Process Classifiers", , (2022+).

Arkaprava Roy and <u>Zhou Lan</u> , "Double soft-thresholded Gaussian process for vector-valued image regression", , (2022+).

<u>Zhou Lan</u> and Arkaprava Roy , "Spatial Auto-Regressive Model for von-Mises Fisher Distributed Directional Data", , (2022+).

<u>Zhou Lan</u>, "Statistical Inference of Auto-correlated Eigenvalues with Applications to Diffusion Tensor Imaging", , (2021+).

WEB APPLICATIONS   <u>Zhou Lan</u>, "Data Visualization of Genomics using D3 Javascript", *School of Computational Science and Engineering, Georgia Tech* , https://www4.stat.ncsu.edu/∼zlan/Gene_Network/final_work/graph.html

(2014).

PRESENTATIONS	ICSA 2022 Applied Statistics Symposium, Gainesville, FL 2022
	ICSA 2019 Applied Statistics Symposium, Raleigh, NC 2019
	Joint Statistical Meetings, Denver, CO 2019
	Joint Statistical Meetings, Vancouver, BC Canada 2018

PROFESSIONAL AFFILIATIONS AND SERVICES

Member, American Statistical Association

Member, International Biometrics Society

Member, International Chinese Statistical Association

Referee for *Statistics in Medicine* (6 times), *Journal of the American Statistical Association* (2 times), *PLoS ONE* (1 time), *The Annals of Applied Statistics* (1 time), *Biometrics* (1 time), *Statistics in Biosciences* (1 time), *Nature Cardiovascular Research* (1 time)

TEACHING

At The Penn State University

Spring 2020:
STAT 415 Introduction of Mathematical Statistics

Fall 2019:
STAT 503 Design of Experiments

At North Carolina State University, as Teaching Assistant

Spring 2019:
ST537 Applied Multivariate and Longitudinal Data Analysis

Fall 2018:
ST 733 Spatial Statistics

Spring 2018, Fall 2017, Spring 2017, Fall 2016, Spring 2016:
ST 512 Experimental Statistics For Biological Sciences II

Fall 2015:
ST/CSC 495 Introduction to Data Science