SHIH-NI PRIM

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EDUCATION

PhD   North Carolina State University, Statistics   2022-present
Advisor: Brian Reich
Cumulative GPA: 4.0

MR   North Carolina State University, Statistics   Dec 2022
Cumulative GPA: 4.0

RESEARCH INTERESTS

Bayesian inference and hierarchical modeling, spatial and spatiotemporal statistics, tensor decomposition, tensor regression, surrogate modeling, active learning, sequential design, climate and environmental applications, causal inference, probabilistic machine learning

CURRENT RESEARCH PROJECT

With Brian Reich and Yawen Guan, "A Multivariate Spectral Model with Adjustment for Unmeasured Confounders": To find causal effects, we propose a spectral method that uses Bayesian hierarchical models to adjust for spatial confounding. We use tensor coefficients to allow for them to vary by frequency and shrinkage prior for variable selection. We intend to analyze the effects of environmental and socioeconomic factors on health outcomes.

COMPUTER SKILLS

Programming: R, Python, SAS, Matlab, Java
Certificate: SAS Certified Specialist: Base Programming Using SAS 9.4 (Issued May 2020)

RESEARCH EXPERIENCE

Environmental Protection Agency, Chapel Hill, NC   August to present
Oak Ridge Institute for Science and Education (ORISE) Fellow
- Develop statistical models to characterize effects of PFAS on multiple health outcomes
- Participate in meetings and collaborate with team members

Lawrence Livermore National Laboratory, Livermore, CA   May to August 2024
Data Science Summer Institute Intern

North Carolina State University, Raleigh, NC   August 2022 to May 2024
Research Trainee at Duke Clinical Research Institute
- Helped with developing and evaluating analytic methods based on WIN statistics
- Shadowed meetings of clinical research and received training on ethics of research

North Carolina State University, Raleigh, NC   Summer 2022, July 2023 to May 2024
Research Assistant
- Principal Investigators: Natalie Nelson (Department of Biological and Agricultural Engineering) and Brian Reich (Department of Statistics)
- Used statistical/machine learning models to analyze data about harmful algal blooms
- Data cleaning, data analysis, statistical modeling, manuscript drafting

Wake Forest Baptist Health, Winston-Salem, NC   2021 to 2022
Volunteer Research Statistician / Intern
- Department of Radiation Oncology
  - Conduct Kaplan Meier Survival Analysis and Cox Proportional Hazard Model on retrospective data of patients with glioblastoma
  - Create tables and plots and help with writing and editing for publication
- Radiology Informatics and Image Processing Laboratory
  - Help collect MRI images and clinical data for studies that utilize machine learning for classification

PUBLICATIONS

Chan MD, **Prim S**, Cramer C, Ruiz J. "Nonrandomized trials in clinical oncology." In *Handbook for Designing and Conducting Clinical and Translational Research: Translational Radiation Oncology*, edited by Adam E. M. Eltorai, Jeffrey A. Bakal, Daniel W. Kim, David E. Wazer, 313–284. 2023. Academic Press.

Helis CA, **Prim S**, Cramer CK, Strowd R, Lesser GJ, White JJ, Tatter SB, Laxton AW, Whitlow C, Lo H, Debinski W, Ververs JD, Black PJ, Chan MD, "Clinical outcomes of dose-escalated re-irradiation in patients with recurrent high-grade glioma." *Neuro-Oncology Practice* (2022). https://doi.org/10.1093/nop/npac032.

Severino C, Egan D, **Prim S**. "International Undergraduates' Perceptions of their Second Language Writing Development and Their Implications for Writing Center Tutors." *Writing Center Journal* 38/1-2 (2020): 165–202.

Prim S. "The Utah Symphony's Recordings with Vanguard Records." *Association for Recorded Sound Collections Journal* 48/1 (2017): 23–41.

Severino C, **Prim S**. "Second Language Writing Development and the Role of Tutors: A Case Study of an Online Writing Center 'Frequent Flyer.'" *Writing Center Journal* 35, no. 3 (2016): 143–185.

Severino C, **Prim S**. "Word Choice Errors in Chinese Students' English Writing and How Online Writing Center Tutors Respond to Them." *Writing Center Journal* 34, no. 2 (2015): 115–143.

CONFERENCE PRESENTATIONS

Prim S. "Active Learning with Deep Gaussian Processes for Aero Database Construction." International Conference on Advances in Interdisciplinary Statistics and Combinatorics, October 11–13, 2024. [upcoming]

Severino C, Egan D, **Prim S**. "International Undergraduates' Perceptions of their Second Language Writing Development." International Writing Centers Association, Chicago, November 12, 2017.

Prim S. "The Utah Symphony's 1971 Goodwill Tour in Latin America: Cultural Diplomacy during the Cold War." American Musicological Society Southeast Chapter Spring Meeting, Furman University, Greenville, SC, March 18, 2017.

Severino C, **Prim S**. "Second Language Writing Development and the Role of Tutors: A Case Study of an Online Writing Center 'Frequent Flyer.'" Midwest Writing Centers Associations, Cedar Rapids, IA, March 4, 2016.

Prim S. "Maurice Abravanel and Gustav Mahler: The Reception of Early Mahler Recordings by Abravanel and the Utah Symphony Orchestra." American Musicological Society Southeast Chapter Spring Meeting, University of North Carolina at Chapel Hill, NC, February 23, 2014.

PROFESSIONAL SERVICE

Book Reviewer	*Notes* (2018 to 2021)
Reviewer	*Writing Center Journal* (2015 to 2016)
Grant Reviewer	University of Iowa (2013)

GRANTS AND FELLOWSHIPS

ORISE Fellowship   2024 to present
Environmental Protection Agency

T32 Training Grant   2022 to 2024
Duke Clinical Research Institute

Travel Grant   2016
Midwest Writing Centers Association

Travel Grant   2013
Executive Council of Graduate & Professional Students, University of Iowa

Study Abroad Award   2010 to 2012
Ministry of Education, Taiwan

LANGUAGES

English, Mandarin, German, French, Italian

REFERENCES

Brian Reich, Gertrude M Cox Distinguished Professor of Statistics
Department of Statistics, North Carolina State University
Phone: 919-513-7686
Email: bjreich @ncsu.edu

Yawen Guan, Assistant Professor
Department of Statistics, Colorado State University
Email: yawen.guan@colostate.edu

Natalie Nelson, Associate Professor
Department of Biological and Agricultural Engineering, North Carolina State University
Phone: 919-515-6741
Email: nnelson4@ncsu.edu

OTHER EDUCATION

PhD   University of Iowa, Musicology   May 2016
         Dissertation: "Maurice Abravanel and the Utah Symphony's Performances and
         Recordings of Gustav Mahler's Symphonies (1951–1979)" (Advisor: Nathan Platte)

MM   Florida State University, Musicology   May 2009
         Thesis: "Gustav Mahler's *Das Lied von der Erde*: An Intellectual Journey across
         Cultures and Beyond Life and Death" (Advisor: Douglass Seaton)

MM   University of North Carolina at Greensboro, Saxophone Performance   May 2006

MA   University of North Carolina at Chapel Hill, Comparative Literature   May 2004
         Thesis: "Music-Myth into Comedy: How Shaw Used Wagner to Transform Mozart's
         Legend" (Advisor: William Harmon)

BA   National Chiao Tung University, Foreign Languages and Literatures   June 2000

TEACHING EXPERIENCE

North Carolina State University, Raleigh, NC   May to August 2022
Teaching Assistant, Department of Statistics
- Assist with two graduate courses: Fundamentals of Statistical Inference I and

Fundamentals of Linear Models and Regression
- Duties: Grade homework and hold weekly office hours

Wake Forest University, Winston-Salem, NC   August 2017 to December 2017
Adjunct Faculty, Department of Music
- Independently designed and taught the course "Introduction to Western Music," which covered western music history from the Middle Ages to the Twentieth Century
- Used music as artifacts to help students think about history in the appropriate contexts and cultivate critical thinking
- Provided necessary study aids including detailed guidelines and rubrics for writing assignments and study guides for exams
- Used a scaffolding method to help students write research papers

University of Iowa, Iowa City, IA   2011 to 2016
Writing Tutor, Writing Center
- Online tutoring (Fall 2013–Spring 2016)
  - Provided feedback for papers through online tutoring (10 hours per week)
- Online and Face-To-Face tutoring (Fall 2011, Spring 2012)
  - Met with 4 students for 4 hours of in-person tutoring sessions per week
  - Provided feedback for papers through online tutoring