Kevin Stanford Liao

Curriculum Vitae

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Education

Bachelor of Science in Biostatistics

University of North Carolina at Chapel Hill
Major: Biostatistics Minor: Computer Science
GPA: 3.66

Master of Science in Biostatistics

University of Michigan Expected Graduation: April 2019
GPA: 4.05

Honors and Certificates

Genome Science Training Program	2018
Rackham Conference Travel Grant	2018
Graduated with Distinction	2016
Integrated Biological Sciences Certificate of Achievement	2016
Transforming Analytical Learning in the Era of Big Data Certificate of Completion	2015
UNC Business Essentials Certificate, Kenan-Flagler Business School	2014
Dean's List	2012-2016

Posters and Presentations

Liao, K.; Carlson, J.; Zoellner, S. The Effect of Mutation Subtypes on the Allele Frequency Spectrum. Poster presented at MidWest PopGen, University of Minnesota, August 2018.

Liao, K.; Dewey, C. Comparing Similarity Measures over RNA-seq Derived Gene Expression Profiles. Presented at IBS-SRP Final Symposium, University of Wisconsin-Madison, August, 2016.

Merino, Y.; Saha, P.; Egan, T.; **Liao, K**.; Agans, R. Using Anti-Tedium Objects to Reduce Call Center Interviewer Fatigue. Presented at Southern Association for Public Opinion Research; September, 2015.

Liao, Kevin, Das, Rima; GWAS Locating Genetic Variants Influencing mtDNA Copy Number. Poster presented at: Symposium on Big Data, Human Health and Statistics; University of Michigan, June 2015.

Research Interests

Statistical Genetics, Population Genetics, Computational Biology, Bayesian Methods, Cancer, Complex Traits

Research Experience

Research Assistant, Zoellner Research Group January 2018 - Present
University of Michigan, Ann Arbor, MI

- Effect of Mutation Subtypes on the Allele Frequency Spectrum
  - Annotated each SNP in the BRIDGES dataset with sequence context using VFCtools and Python
  - Generated and analyzed the allele frequency spectrum of each mutation subtype using R
  - Identified mutation rate heterogeneity and biased gene conversion as factors influencing allele frequencies at the mutation subtype level
- Inferring Local Ancestry for TOPMed Samples
  - Adjusted existing local ancestry inference pipeline to infer local ancestry for 60,000 new samples in data freeze 6 of the TOPMed study
  - Instructed fellow lab member on effective use and maintenance of the pipeline
- Advisor: Dr. Sebastian Zoellner

Research Assistant, Carolina Survey Research Laboratory 2014 - 2017
University of North Carolina at Chapel Hill, Chapel Hill, NC

- Effect of Anti-tedium Objects on Call Center Employee Fatigue Levels
  - Collected survey information on call center employee's physical state and usage of provided anti-tedium objects during a working shift
  - Implemented a linear mixed model to assess the effects of various anti-tedium objects on fatigue levels using SAS
- Effective Communication on Tobacco Project Risk and FDA Authority
  - Performed quality control for a variety of contracted projects using SAS
  - Automated weekly call and incentive reports to PIs using SAS and a batch process
  - Created and maintained database on patients for a web-based follow up survey
- Advisor: Dr. Robert Agans

Integrated Biological Sciences Summer Research Program Summer 2016
University of Wisconsin-Madison, Madison, WI

- Comparing Similarity Measures over RNA-Seq Derived Gene Expression Profiles
  - Used Python to classify samples to tissue type based on their gene expression profiles using the K-nearest neighbors algorithm
  - Evaluated the effect of different similarity measures on predictive performance of tissue type
- Advisor: Dr. Colin Dewey

Transforming Analytical Learning in the Era of Big Data Summer 2015
University of Michigan, Ann Arbor, MI

- GWAS Locating Genetic Variants Influencing mtDNA Copy Number
  - Performed a GWAS to identify genetic variants associated with mtDNA copy number using EMMAX
  - Adjusted for relatedness between samples and population structure using a kinship matrix and principal components
- Advisor: Dr. Gonçalo Abecasis

Professional Experience:

Graduate Student Instructor Fall 2017
University of Michigan, Ann Arbor, MI

- Biostatistics 501: Intro to Biostatistics
    - Instructed two computing labs per week where students performed data analysis using Stata
    - Held two office hours per week and helped students understand core statistical concepts
    - Graded weekly homework assignments, midterm exams, and a final exam
- Course Instructor: Dr. Michael Boehnke

Co-Organizer, Biostatistics Brown Bag Seminars August 2018 - Present
University of Michigan, Ann Arbor, MI

- Organized bi-monthly brown bag seminars and brought in speakers to present on a variety of topics including research resources, job opportunities, and leadership roles
- Moderated seminars by introducing speakers and providing structure to panel discussions

Skills

Programming

- Excellent Proficiency: SAS, R
- Intermediate Proficiency: C++, Java, Python, Unix
- Introductory Proficiency: Plink, Matlab

Languages

- English
    - Fluent in speaking, writing, and reading
- Chinese
    - Conversational speaking, proficient reading and writing