

Lijia Wang
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EDUCATION

The University of Chicago **Chicago, IL**
Bachelor of Science in Statistics (with Honors) and Bachelor of Arts in Biological Sciences Expected, June 2021

- Relevant Coursework: Analysis in Rn, Statistical Theory and Methods; Applied Regression Analysis, Math Methods (R); Intro to Math Probabilities (Mathematica); Computer Science with Applications (python, SQL, C);
- Languages and Tools: R, Python, SQL (proficient); Bash Script, C, Mathematica (familiar)
- Dean's List, 2017-2019; GPA 3.71

RESEARCH EXPERIENCE

Department of Statistics and Department of Human Genetics, University of Chicago **Chicago, IL**
Research Assistant, Matthew Stephens Lab Jan 2020 – present

- Evaluate different variable selection methods on genetic datasets with varying degrees of correlation
- Generate and test functions and modules in python and R for Dynamic Statistical Comparisons program to evaluate dataset-specific fit of regression models
- Record and create reproducible pipelines for model fitting

Department of Pediatrics, University of Chicago Medicine **Chicago, IL**
Bioinformatic Research Assistant, Xinan Yang Lab Jun 2018 – Dec 2019

- Constructed a python- and R-based ATAC-seq analysis pipeline to investigate change in chromatin state and its correlation to differential binding of transcription factors using principal component analysis and t-SNE
- Revised and applied R-based dynamic network analysis model to predict tumor-initiating enhancers

Department of Organismal Biology and Anatomy, University of Chicago **Chicago, IL**
Research Assistant, Neil Shubin Lab Apr 2018 – Dec 2019

- Investigated enhancer regulation in evolutionary development of the spiral valve in cartilaginous fish
- Built cDNA library, designed RNA probes, and constructed a gut tissue structure library of sharks and skates

Royal Botanic Gardens, Kew **London, United Kingdom**
Phylogenomic Studies Intern, Research Mentor: Olivier Maurin Jun 2019 – Aug 2019

- Processed and generated viable libraries from silica-dried and herbarium samples of angiosperm family *Combretaceae* for next generation sequencing
- Hypothesized and tested phylogenetic trees using quartet analysis to infer types of evolutionary pressure

Business School of Management, University of Shanghai for Science and Technology **Shanghai, China**
Research Assistant, Translator, Xiao'an Gu Lab Sept 2018

- Analyzed FDIC data on liquid assets and liabilities ratio for commercial banks to generate a risk-warning model
- Translated reference materials and the project article from English to Chinese and Chinese to English

PUBLICATIONS AND PRESENTATIONS

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- **Wang, L.**, Carbonetto, P., Stephens, M., "Comparison of Multiple Regression Methods for Variable Selection on Datasets with Varying Degrees of Correlation", *Midstates Undergraduate Research Symposium in the Physical Sciences, Mathematics, and Computer Science 2020 (Oral Presentation)*
 - **Wang, L.**, Maurin, O., "Phylogenomic Analysis on Combretaceae using angiosperm-wide target enrichment", *UCISTEM Undergraduate Research Symposium 2019 (Oral Presentation)*
 - Gu, X., Rong, L., **Wang, L.**, Xi, X., Yuan, Y. "A Study on the Effect of Volatility in Liquid Assets and Liabilities Ratio in Bank Failure -- Experience and Evidence from United States Banking" (Article under review)
 - **Wang, L.**, Wang, Z., Yang, X. "A systematic discovery of MYC and MYCN binding at risk-dependent enhancers in Neuroblastoma", *BSCD Undergraduate Research Symposium 2018 (Oral Presentation)*
 - Ali, M., Gundamraj, S., Kaur, T., Morris, S., Puri, S., Singh, R., Singh, V., Smith-Feinburg, L., **Wang, L.**, Tuinstra, R. and Peoples, R., 2014. "Modeling the Alcohol Binding Site of the NMDA Receptor Using the GluA2-receptor Structure (LB110)". *The FASEB Journal*, 28(1_supplement), p.LB110.

TEACHING EXPERIENCE

Fundamentals of Ecology and Evolution

University of Chicago, Biological Sciences Collegiate Division

Teaching Assistant

Jan 2019 – March 2019

- Prepared and conducted weekly computer lab sessions for the course; graded student work and exams
- Instructed fundamentals of data analysis and modeling using R and its application in ecological studies, including population genetics, phylogenetic analysis, and disease dynamics

Introduction to Quantitative Modeling in Biology

University of Chicago, Biological Sciences Collegiate Division

Lecture Teaching Assistant

March 2020 – June 2020

- Held office hours and monitored piazza forum to answer questions on both lecture and computer lab material
- Instructed statistical modeling in R, probabilities, Markov Chains, and ordinary differential equations

COMPUTATIONAL PROJECTS

- *GOM2SOM*: used grade of membership model analysis to recreate self-organizing map identifications of spatial discriminator genes (R, python)
- *COVIDpeak*: constructed modified SIR model that incorporate varying degrees of self-quarantine to predict the peak number of COVID-19 patients during the pandemic in New York City (python)
- *MappingTrends*: analyzed and projected Twitter trends onto GIS map; constructed Django query interface (python)
- *linalg & statgen*: implementation of common linear algebra algorithms and statistical genetics methods in R; code organized through workflowR (R)
- *ReScience Reproducibility Challenge* (code review): reviewed and made suggestions to “Reproducibility report: Identifying essential genes by mutagenesis” (Broman, K., 2020) (R)

GRANTS AND FELLOWSHIPS

- University of Chicago Biological Sciences Collegiate Division Quantitative Biology Fellowship, May 2020
- University of Chicago Jeff Metcalf Fellowship, May 2019
- University of Chicago Biological Sciences Collegiate Division Summer Fellowship, Summer 2018

LEADERSHIP AND ACTIVITIES

University of Chicago Kendo Club

Captain, President

Sept 2017 – present

- Lead beginner and advanced practices every week; research and implement training regimen
- Coordinate joint practices and seminars for Greater Chicago Area dojo's and the Midwest Kendo Federation
- Organize the annual UChicago Kendo Tournament, a student-run tournament for all Chicago dojo's

University of Chicago Japanese Animation Society

President, Head of UChi-con

Sept 2017 – present

- Head outreach to businesses in the animation and entertainment industry to sponsor the club and annual UChi-con
- Organize logistics for UChi-con, including reservation, promotion, and delegation of tasks to officers and volunteers

University of Chicago Society of Women in Mathematics

Member

Sept 2019 – present

- Hold weekly meetings and seminars with mathematical societies at the undergraduate and graduate math programs
- Tutor students in introductory calculus courses in basics of mathematical proof

University of Chicago Club Sports Financial Committee

Member

April 2019 – present

- Evaluate petitions and distribute quarterly allocations to each sports club