

Curriculum Vitae

Lisha Kuang

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Education

- 08/2021 – Present Master in Statistics and Data Science, University of Arizona, USA.
- 08/2020 – 06/2021 Master in Statistics, University of Kentucky, USA.
- 09/2003 – 06/2009 Ph.D. in Biomedical Science, East China Normal University, China.
- 09/1999 – 06/2003 B.S. in Biological Science, East China Normal University, China.

Professional Summary

- Proficient with statistics analysis tools such as SAS (certified) and R, familiar with Python and SQL.
- Immense knowledge of statistical inferences and statistical machine learning methods.
- With in-depth and broad knowledge of design, operation and analysis of controlled clinical trials and intervention studies.
- With highly professional knowledge of pharmaceutic science, biological and biomedical science.
- Strong presentation and communication skills.
- Strong scientific writing skills with successful experience of publications.
- Exceptional organizational skills, statistic analyzing, problem solving and multitasking skills.

Graduate Level Statistics Courses (GPA 4.0)

- Introduction to statistical methods
- Advanced Statistical Regression Analysis
- Introduction to linear model and experimental design
- Design of experiment
- Theory of probability
- Theory of statistical inference I
- Communication in Statistics
- Data Management and SAS programming language

- Statistical Machine Learning
- Clinical Trials and Intervention Studies
- General Linear and Mixed Effects Models
- Statistical Computing
- Statistical Consulting

Working Experience

- 09/2022 – Present Biostatistician II. Roche Tissue Diagnostics.
- 05/2022 – 08/2022 Biostatistician Intern. Roche Tissue Diagnostics.
- 07/2021 – 05/2022 Research Professional (project leader) in biomedical science. University of Arizona.
- 11/2014 – 6/2020 Research Analyst Principle (project leader) in biomedical science. University of Kentucky.
- 09/2009 - 10/2014 Postdoctoral Researcher in biomedical science. University of Kentucky.

Research experience

- 08/2021 – Present Graduate Student, Statistics and Data Science Graduate Interdisciplinary Program, University of Arizona, Tucson, AZ, USA.
 - Using R to compare multiple statistical machine learning methods (Bayesian, LDA, Cross-Validation, SVM, Random Forest, et al.) in binary classification (Malignant or Benign) of breast cancer and find an optimal method for diagnosis.
 - Using SAS studio to do statistical inference (linear regression, logistic regression) and analysis (T- test, Fisher test, Chi-square test, *et al.*) on data collected in clinical trials.
- 08/2020 – 06/2021 Graduate Student, Statistics, University of Kentucky, Lexington, KY.
 - Using R to do statistical inference (linear regression, logistic regression decision tree, *et al.*), analysis and interpretation on Airbnb dataset.
- 12/2012 – 05/2022 Research Analyst Principle/Postdoctoral Researcher Department of Molecular and Cellular Biochemistry, University of Kentucky, Lexington, KY, USA; Research Professional, College of Pharmacy, University of Arizona, Tucson, AZ, USA.
 - Investigated the potential therapeutic effect of small molecule drugs on premature stop codon (PTC)-related progranulin (PGRN, a section protein) haploinsufficiency in Frontotemporal lobar degeneration (FTLD).
 - Investigated the role of DNA and RNA binding protein Fused in

- Sarcoma (FUS) in the neurodegenerative disease amyotrophic lateral sclerosis (ALS, Lou Gehrig's disease).
- Investigated the role of DNA and RNA binding protein Matrin 3 (MATR3) in ALS
- 9/2009 – 11/2012 Postdoctoral Researcher
Graduate Center for Toxicology, University of Kentucky, Lexington, KY, USA
 - Investigated the role of the role of Y family protein REV1 in mutagenesis and tumorigenesis.
 - 9/2007 – 8/2008 Visiting scholar
Livestock Industry, Commonwealth Scientific and Industrial Research Organization (CSIRO), Brisbane, QLD, Australia.
 - Analyzed the secreted proteins and peptides of the parasitic nematode, *Haemonchus contortus*, by LC MS/MS.
 - 9/2003 – 6/2009 Research Assistant
Department of Biomedical Science, School of Life Science, East China Normal University, Shanghai, China
 - Analyzed the anti-cancer effects of compounds extracted from natural products on colon cancer cells.
 - Investigated the effect of a novel immunotoxin against Hepatocarcinoma on liver cancer cells.
 - Investigated the effect of VEGF siRNAs in colon cancer cells.

Publications

1. D. Song, L. Kuang, L. Yang, L. Wang, H. Li, X. Li, Z. Zhu, C. Shi, H. Zhu, W. Gong. Yin and Yang Regulation of Stress Granules by Caprin-1. *Proc Natl Acad Sci U S A*. 2022 Nov; 119(44) : e2207975119. doi: 10.1073/pnas.2207975119. Epub 2022 Oct 24.
2. A. Arenas, L. Kuang, J. Zhang, M.S. Kingren, H. Zhu. FUS regulates autophagy by mediating the transcription of genes critical to the autophagosome formation. *J Neurochem*. 2021 May;157(3):752-763. doi: 10.1111/jnc.15281. Epub 2021 Jan 18.
3. K.M. Guzman, L.E. Brink, G. Rodriguez-Bey, R.J. Bodnar, **L. Kuang**, B. Xing, M. Sullivan, H.J. Park, E. Koppes, H. Zhu, Q. Padiath, F. Cambi. Conditional depletion of Fus in oligodendrocytes leads to motor hyperactivity and increased myelin deposition associated with Akt and cholesterol activation. *Glia*. 2020 Oct;68(10):2040-2056.
4. A. Arenas, J. Chen, **L. Kuang**, K.R. Barnett, E.J. Kasarskis, J. Gal, H. Zhu. Lysine acetylation regulates the RNA binding, subcellular localization and inclusion formation of FUS. *Hum Mol Genet*. 2020 Sep 29;

- 29(16):2684-2697.
5. **L. Kuang**, K. Hashimoto, E.J. Huang, M.S. Gentry, H. Zhu. Frontotemporal dementia non-sense mutation of progranulin rescued by aminoglycosides. *Hum Mol Genet.* 2020 Mar 13; 29(4):624-634.
 6. M. Kamelgarn, J. Chen, **L. Kuang**, H. Jin, E.J. Kasarskis, H. Zhu. ALS mutations of FUS suppress protein translation and disrupt the regulation of nonsense-mediated decay. *Proc Natl Acad Sci U S A.* 2018, 115(51): E11904-E11913.
 7. **L. Kuang**, M. Kamelgarn, A. Arenas, J. Gal, D. Taylor, W. Gong, M. Brown, D. St. Clair, E.J. Kasarskis, H. Zhu. Clinical and experimental characterization of a novel P525R FUS mutation in amyotrophic lateral sclerosis. *Neurol Genet.* 2017, 3(4): e172.
 8. J. Gal, **L. Kuang**, K.R. Barnett, B.Z. Zhu, S.C. Shissler, K.V. Korotkov, L.J. Hayward, E.J. Kasarskis, H. Zhu. ALS mutant SOD1 interacts with G3BP1 and affects stress granule dynamics. *Acta Neuropathol.* 2016, 132(4): 563-76. (Co-first author)
 9. M. Kamelgarn, J. Chen, **L. Kuang**, A. Arenas, J. Zhai, H. Zhu, J. Gal. Proteomic analysis of FUS interacting proteins provides insights into FUS function and its role in ALS. *Biochim Biophys Acta.* 2016, 1862(10): 2004-14.
 10. L. Wang, **L. Kuang**, JA. Hitron, YO. Son, X. Wang, A. Budhraj, JC. Lee, P. Poyil, G. Chen, Z. Zhang, J. Luo, X. Shi. Apigenin suppresses migration and invasion of transformed cells through down-regulation of C-X-C chemokine receptor 4 expression. *Toxicol Appl Pharmacol.* 2013, 272(1):108-16. doi: 10.1016/j.taap.2013.05.028.
 11. **L. Kuang**, H. Kou, Z. Xie, Y. Zhou, X. Feng, L. Wang, Z. Wang. A non-catalytic function of Rev1 in translesion DNA synthesis and mutagenesis is mediated by its stable interaction with Rad5. *DNA Repair.* 2013,12(1):27-37.
 12. **L. Kuang**, L. Wang, Q. Wang, Q. Zhao, B. Du, D. Li, J. Luo, M. Liu, A. Hou, M. Qian. Cudraticusxanthone G inhibits human colorectal carcinoma cell invasion by MMP-2 down-regulation through suppressing activator protein-1 activity. *Biochemical Pharmacology.* 2011, 81(10):1192-1200. (Co-first author)
 13. L. Wang, **L. Kuang**, X. Pan, J. Liu, Q. Wang, B. Du, D. Li, J. Luo, M. Liu, A. Hou, M. Qian. Isoalvaxanthone inhibits colon cancer cell proliferation, migration and invasion through inactivating Rac1 and AP-1. *International Journal of Cancer.* 2010, 127(5):1220-1229. (Co-first author)
 14. B. Du, H. Han, Z. Wang, **L. Kuang**, L. Wang, L. Yu, M. Wu, Z. Zhou, M. Qian. Targeted drug delivery to hepatocarcinoma in vivo by phage-displayed specific binding peptide. *Molecular Cancer Research.* 2010, 8(2):135-144.
 15. **L. Kuang**, M. Colgrave, N. Bagnall, M. Knox, M. Qian, G. Wijffels. The complexity of the secreted NPA and FAR lipid-binding protein families of

- Haemonchus contortus* revealed by an iterative proteomics-bioinformatics approach. *Molecular and Biochemical Parasitology*. 2009, 168(1):84-94.
16. **KUANG Lisha**, JIANG Wei, HOU Aijun, QIAN Min. Chemical constituents of *Hedyotis corymbosa*, *Chinese Traditional and Herbal Drugs*. 2009, 7(7): 1020-1024. (In Chinese)
 17. **KUANG Lisha**, JIANG Wei, CONG Rong, et al. Antitumor effects and mechanism of the extracts from *Oldenlandia corymbosa* L., *Natural Product Research and Development*. 2007, 19:22-25. (In Chinese)
 18. W. Jiang, **L. Kuang**, A. Hou, M. Qian. Iridoid Glycosides from *Hedyotis corymbosa*. *Helvetica Chimica Acta*. 2007, 90:1296-1301.
 19. CONG Rong, **KUANG Lisha**, FENG Jing et al. Study on the Pharmacology of the Different Extracts of *Oldenlandia (Hedyotis) corymbosa* L., *Journal of East China Normal University (Natural Science)*. 2007, 2:137-140. (In Chinese)
 20. **KUANG Lisha**, CONG Rong, GUO Wei, et al. Comparison of MTT, SRB and CCK-8 Assay for Testing Anti-tumor Drug Screening, *Journal of East China Normal University (Natural Science)*, 2005, No5~6:205-207. (In Chinese)

Poster presentations

1. **L. Kuang**, D. Taylor, D.St. Clair, E.J. Kasarskis, H. Zhu. Incomplete penetrance of familial ALS in an extensive family with R521G mutation of FUS. 3rd Midwest Motoneuron Consortium Meeting, 2018.
2. **L. Kuang**, M. Kamelgarn, A. Arenas, J. Gal, D. Taylor, W. Gong, M. Brown, D. St. Clair, E.J. Kasarskis, H. Zhu. Clinical and experimental studies of a novel P525R FUS mutation in amyotrophic lateral sclerosis. 28th International Symposium on ALS/MND, 2017.
3. **L. Kuang**, H. Kou, Z. Xie, Y. Zhou and Z. Wang. A non-catalytic function of Rev1 in translesion DNA synthesis and mutagenesis is mediated by its stable interaction with Rad5. AACR Annual Meeting 2012.
4. Z. Wang, **L. Kuang**, H. Kou, Z. Xie, Y. Zhou, and X. Feng. Role of Rad5 in Translesion DNA Synthesis and Base Damage-induced Mutagenesis. 13th Midwest DNA Repair meeting 2011.
5. **L. Kuang**, M.L. Colgrave, N. Bagnall, M.R. Knox, A. Kotze, M. Qian and G. Wijffels, The Discovery of Lipid Binding Protein Families in the Excretory/Secretory Products of *Haemonchus contortus* using a Novel Iterative Proteomic-Bioinformatic Approach. World Association for the Advancement of Parasitology (WAAVP) 2009 Conference.

Patent

1. QIAN Min, HOU Aijun, **KUANG Lisha**, JIANG Wei, CONG Rong, MEI Bing. The application of *Oldenlandia(Hedyotis) corymbosa* L. and its components

in preparing medicine components. Discovery patent of China No. 200510026310.1. (In Chinese)

Awards & honors

- 2019 Third place reward for poster presentation, Biochemistry Department Retreat, University of Kentucky
- 2007 Ph.D. Scholarship, Chinese Scholarship Council
- 2006 Excellent Postgraduate Award, East China Normal University
- 2005 Excellent Postgraduate Award, East China Normal University
- 2003 Excellent Graduate Award, East China Normal University
- 2002 Major Award for Junior Students (Rank: top 4/75), East China Normal University
- 2001 Minor Award for Sophomore Students (Rank: top 10/75), East China Normal University

Professional Affiliations

- 2013 Associate Member in the American Association for Cancer Research (AACR)
- 2013 Membership in the American Society for Pharmacology and Experimental Therapeutics (ASPET)