KUAN-JUI (RAY) SU
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EDUCATION

TULANE UNIVERSITY
SCHOOL OF PUBLIC HEALTH AND TROPICAL MEDICINE New Orleans, LA
Doctor of Philosophy *Current (Expected Graduation: May 2023)*
Master of Science 05/2017
Department of Biostatistics and Data Science
Master of Public Health 05/2015
Department of Global Community Health and Behavioral Sciences

NATIONAL CHUNG CHENG UNIVERSITY Chiayi, Taiwan (R.O.C.)
Master of Science in Healthcare Information Management 07/2010
Graduate Institute of Healthcare Information Management

KAOHSIUNG MEDICAL UNIVERSITY Kaohsiung, Taiwan (R.O.C.)
Bachelor of Science in Medical Information Management 06/2008
Department of Health Information Management

RESEARCH INTERESTS

My research focused on data science and data mining in biomedical informatics and genomics studies. Particularly, I developed, evaluated, and adopted novel biostatistics, bioinformatics, and data science tools to maximize applications across different disease contexts, populations, and omics techniques.

RESEARCH/WORK EXPERIENCE & SERVICE

TULANE CENTER FOR BIOMEDICAL INFORMATICS AND GENOMICS New Orleans, LA
Research Assistant 09/2015~Current

- Developed, evaluated, and applied novel and comprehensive methods for next-generation sequencing/high throughput data analyses to identify genomics variations related to complex disease development.
- Developed and oversaw the implementation of all data-related aspects of large cohort studies, from data preprocessing, quality assurance, and quality control to downstaging integrative data analysis.
- Developed relational databases to manage and mine massive phenotype and big genomic data.

LSU HEALTH SCIENCES CENTER New Orleans, LA
Database Management Intern 02/2015~05/2015

- Maintained Microsoft Access Database for the project demands.
- Compile and validate data; reinforce and maintain compliance with corporate standards.
- Develop and initiate more efficient data collection procedures.

TULANE UNIVERSITY New Orleans, LA
Administration and Technology Assistant 04/2012~05/2014

- Assisted international study abroad programs.
- Provided immediate technical support for troubleshooting hardware and software.

TAIWAN HEALTH RESEARCH ASSOCIATION (THRA) Chiayi, Taiwan
Research Assistant 08/2011~08/2012

- Developed an online learning platform and materials for management information system courses.
- Responsible for generating, gathering, and strategically analyzing internal and external healthcare data.
- Designed the evaluation matrices for the usage of the platform.

E-DA METROPOLITAN TEACHING HOSPITAL Kaohsiung, Taiwan
Management Center Assistant 06/2011~12/2011

- Acquired health-related information to establish the hospital knowledge-base database.
- Coordinated with departments and operating units in resolving day-to-day administrative and health information system implementation problems.
- Developed health promotion plans for increasing community engagement in health screening and disease prevention.

FUTABA TECHNOLOGY DEVELOPMENT CORP. Kaohsiung, Taiwan
Management Information System Department Intern (Project Assistant) 07/2009~09/2009

- Joined the development team of Radio-frequency Identification Emergency Incident Command System.
- Responsible for system requirement analysis and co-authored the program evaluation report.
- Coordinated with MIS department and frontline healthcare workers in health information system implementation issues.

PUBLICATIONS

1. Song, M., Greenbaum J, …, **Su KJ**, et al. (2022). "An autoencoder-based deep learning method for genotype imputation." Frontiers in Artificial Intelligence 5.
2. Greenbaum J, **Su KJ**, Zhang X, Liu Y, Liu A, Zhao LJ, et al. A multiethnic whole genome sequencing study to identify novel loci for bone mineral density. Hum Mol Genet. 2022;31(7):1067-81.
3. Zhao Q, Shen H, Liu J, Chiu CY, **Su KJ**, Tian Q, et al. Pathway-based metabolomics study of sarcopenia-related traits in two US cohorts. Aging (Albany NY). 2022;14(5):2101-12.
4. Greenbaum J, Lin X, **Su KJ**, Gong R, Shen H, Shen J, et al. Integration of the Human Gut Microbiome and Serum Metabolome Reveals Novel Biological Factors Involved in the Regulation of Bone Mineral Density. Front Cell Infect Microbiol. 2022;12:853499.
5. Qiu C, Yu F, **Su K**, Zhao Q, Zhang L, Xu C, et al. Multi-omics Data Integration for Identifying Osteoporosis Biomarkers and Their Biological Interaction and Causal Mechanisms. iScience. 2020;23(2):100847.
6. Liu A, Liu Y, **Su KJ**, Greenbaum J, Bai Y, Tian Q, et al. A transcriptome-wide association study to detect novel genes for volumetric bone mineral density. Bone. 2021;153:116106.
7. Peng C, Liu F, **Su KJ**, Lin X, Song YQ, Shen J, et al. Enhanced Identification of Novel Potential Variants for Appendicular Lean Mass by Leveraging Pleiotropy With Bone Mineral Density. Front Immunol. 2021;12:643894.
8. Gong R, Xiao H-M, Zhang Y-H, Zhao Q, **Su K-J**, Lin X, et al. Identification and Functional Characterization of Metabolites for Bone Mass in Peri- and Post menopausal Chinese Women. The Journal of Clinical Endocrinology & Metabolism. 2021;106(8):e3159-e77.
9. Wang Z, Bian L, Mo C, Shen H, Zhao LJ, **Su K-J**, et al. Quantification of aminobutyric acids and their clinical applications as biomarkers for osteoporosis. Communications Biology. 2020;3(1).
10. Liu Y, Shen H, Greenbaum J, Liu A, **Su KJ**, Zhang LS, et al. Gene Expression and RNA Splicing Imputation Identifies Novel Candidate Genes Associated with Osteoporosis. J Clin Endocrinol Metab. 2020;105(12).
11. Luo X, **Su KJ**, Qiu C, Liu X, Yang F. Novel Prognostic Model for Gastric Cancer using 13 Co-Expression Long Non-Coding RNAs (LncRNAs). Med Sci Monit. 2020;26:e923295.
12. Zhao Q, Shen H, **Su KJ**, Tian Q, Zhao LJ, Qiu C, et al. A joint analysis of metabolomic profiles associated with muscle mass and strength in Caucasian women. Aging (Albany NY). 2018;10(10):2624-35.
13. Zhao Q, Shen H, **Su KJ**, Zhang JG, Tian Q, Zhao LJ, et al. Metabolomic profiles associated with bone mineral density in US Caucasian women. Nutr Metab (Lond). 2018;15:57.
14. Zhu W, Xu C, Zhang JG, He H, Wu KH, Zhang L, et al. Gene-based GWAS analysis for consecutive studies of GEFOS. Osteoporos Int. 2018;29(12):2645-58.
15. Peng C, Lou HL, Liu F, Shen J, Lin X, Zeng CP, Long JR, **Su KJ**, et al. Enhanced Identification of Potential Pleiotropic Genetic Variants for Bone Mineral Density and Breast Cancer. Calcif Tissue Int. 2017;101(5):489-500.

CONFERENCE PRESENTATIONS

1. *Uncovering the role of genomic structural variations associated with risk of osteoporosis through whole-genome sequencing.* Poster session presented at 2021 American Society of Human Genetics Annual Meeting, Virtual Meeting, October 18-22 (**Top 10% selected abstract**)
2. *An application of genetic algorithm-based Naive Bayesian classifier in metabolomics profiling.* Poster session presented at 2018 American Society of Human Genetics Annual Meeting, San Diego, CA
3. *Gene-Based Pathway Analysis for Osteoporosis: Insights from Genomic-Wide Association Studies.* Poster session presented at Tulane Health Sciences Research Days 2017, New Orleans, LA.

HONORS and AWARDS

1. Reviewers' Choice Award, American Society of Human Genetics, 2021
2. Biostatistics Excellence Award, Tulane University, 2020
3. Travel Award, International Cryobiology and Living Biobanking conference, 2019
4. Full SISG scholarship, University of Washington, 2017

TEACHING EXPERIENCE

1. Teaching Assistant in BIOS 6220 Database Management - Instructor: Dr. LanJuan Zhao
2. Teaching Assistant in BIOS 6030 Introduction of Biostatistics - Instructor: Dr. Yao-Zhong Liu
3. Teaching Assistant in BIOS 7300 Survival Data Analysis - Instructor: Dr. Wan Tang
4. Teaching Assistant in BIOS 8000 Doctoral Journal Club – Instructor: Dr. Hong-Wen Deng
5. Instructor in Python Bootcamp for Beginner – Supervisor: Dr. Lean Myers

PROFESSIONAL MEMBERSHIPS

1. Member, American Society of Human Genetics (ASHG)
2. Member, American Statistical Association (ASA)
    a. SGG: Section on Statistics in Genomics and Genetics
    b. TSHS: Section on Teaching of Statistics in the Health Sciences
    c. EDUC: Section on Statistics and Data Science Education
    d. COMP: Section on Statistical Computing
3. Member, Bioconductor (BioC)
4. Member, American Medical Informatics Association (AMIA)
5. Member, Taiwanese Young Researcher Association (project Tyra)
6. Convenor for Statistical and Computing Team

TECHNICAL SKILLS

- **Office Suites**: SharePoint, PowerBI, Word, Excel, Access, and PowerPoint, Google workspace
- **Graphic Design**: Photoshop, Illustrator.
- **Programming**: Python, Dreamweaver, Visual Basic 6.0, C, Joomla, SQL, HTML, JavaScript.
- **Statistical Analysis Software**: SPSS, SAS, R, STATA
- **Others:** ArcGIS, OpenProj, Linux, data visualization, Shiny dashboard development, and Cloud computing platforms.

LANGUAGES

Fluency in read, spoken and written English, Mandarin Chinese, and Taiwanese.