

# Chun-Yuan (Tony) Huang

<https://tonycytw.github.io/>

Dallas, TX

chunyuanh@smu.edu

## RESEARCH INTERESTS

Statistical genetics, Bayesian statistics, and bioinformatics

## EDUCATION

**Southern Methodist University, TX** May 2023 – Present  
*Doctor of Philosophy, Biostatistics*

**The University of Texas at Dallas, TX** May 2023  
*Master of Science, Statistics*

**National Cheng Kung University, Tainan, Taiwan** May 2018  
*Bachelor of Science, Statistics*

## RESEARCH EXPERIENCE

**McDermott Bioinformatics Lab** Dec. 2021 – Present  
The University of Texas Southwestern Medical Center (UTSW), USA  
Advisor: Dr. Chao Xing

- Integrate and analyze multi-omics and clinical datasets (RNA-seq, proteomics, wearable data, and patient-level data) to identify biomarkers and characterize disease biological pathways.
- Build scalable and reproducible bioinformatics pipelines in R and C++ within Linux/HPC environments for high-dimensional data processing.
- Develop novel statistical methods for genome-wide association studies (GWAS), including rank-based nonparametric tests, Bayesian mixed-effects models, and ratio-traits, to improve genetic signal detection in complex diseases.
- Design large-scale simulation studies to evaluate statistical performance and support robust study design in high-dimensional genomic settings.
- Collaborate with clinicians and domain scientists to provide statistical consulting and computational support for biomedical research at UTSW.

**Visual Cognition and Modeling Lab** Sep. 2016 – June 2018  
National Cheng Kung University, Taiwan  
Advisor: Dr. Cheng-Ta Yang

- Conducted research on human visual search by designing hybrid search experiments and collecting large-scale eye-tracking datasets.
- Applied statistical methods to analyze reaction-time data, interpreted results, and contributed to writing research manuscript.
- Supported lab operations, including participant recruitment, scheduling, and experimental assistance.

## PUBLICATIONS

Hoff F.W., Xing C., **Huang C.Y.**, Simha V., Brown R.J., Garg A. (2026). *Genotype-Phenotype Heterogeneity Among Patients with Lipodystrophy Harboring Rare POLD1 Variants*. *The Journal of Clinical Endocrinology & Metabolism*, dgag079.

Patni N., Xing C., **Huang C.Y.**, Brown R.J., Garg A. (2026). *Novel Homozygous Variants in CIDEA and WRN in a Young Female with Lipodystrophy and Thyroid Cancer*. *International Journal of Molecular Sciences*, 27(2): 646.

McGowan M.P., Xing C., Khera A., **Huang C.Y.**, Shao Y., Xing M., Brandt E.J., MacDougall D.E., Ahmed C.D., Wilemon K.A., Ahmad Z. (2025). *Using healthcare claims data to identify health disparities for individuals with familial hypercholesterolemia*. *Journal of Clinical Lipidology*, 19(4): 1020–1028.

## PRESENTATION

**Huang C.Y.**, and Xing C. (2026). *What Determines Statistical Power in Ratio-Trait Genetic Association Studies? Effects of Scale, Heritability, and Genetic Correlation*. Poster presented at Southern Methodist University Research Week and ASA North Texas Chapter.

**Huang C.Y.**, Yang C.T., and Fific M. (2018). *System Factorial Technology Provides New Insights on Hybrid Search*. Poster presented at 59th Psychonomic Society Annual Meeting.

**CURRENT PROJECT**

*Statistical Inference Methods to Assess Replicability Success.*

*Rank-Based Rare Variant Association Test in Genome-Wide Association Studies.*

*Statistical Power of Ratio Traits in Genetic Association Studies.*

*Scalable Liability Threshold Mixed Model for Case-Control GWAS.*

**AWARDS**

2018 59th Psychonomic Society Graduate Conference Award (10% acceptance rate)  
– \$1,000

2017 National Science Council of Taiwan Undergraduate Student Thesis Award  
– \$1,000

**INDUSTRY EXPERIENCE**

**Crédit Agricole CIB**, Taiwan Dec. 2018 – Dec. 2020  
Assistant Relationship Manager, Financial Institutions Coverage

**GfK Retail and Technology Ltd.**, Taiwan Jan. 2018 – June 2018  
Market Research Intern

**ADDITIONAL INFORMATION**

*Technical:* R, C++, Python, Bash, SAS, MATLAB, SQL, Data Visualization (Tableau, R shiny), Reporting (R Markdown, LaTeX).

*Languages:* Mandarin, English.

**PROFESSIONAL MEMBERSHIPS**

American Society of Human Genetics (ASHG)

American Statistical Association (ASA)

International Biometric Society (IBS)