

CURRICULUM VITAE

Yu-Jen Liang (梁佑任)

Ph.D.

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EDUCATION

Ph.D., Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University (co-advisors: Profs. Kun-Mao Chao and Hsin-Chou Yang) 2007 ~ 2016
(國立台灣大學 生醫電子與資訊學研究所)

M.S., Department of Environmental and Occupational Health Medical College, National Cheng Kung University (advisor: Prof. How-Ran Guo) 1998 ~ 2000
(國立成功大學 工業衛生學科暨環境醫學研究所)

B.S., Department of Statistics, National Cheng Kung University 1994 ~ 1998
(國立成功大學 統計系)

ACADEMIC EXPERIENCE

Senior Research Associate. Institute of Statistical Science, Academia Sinica (中央研究院 統計科學研究所)	2024.01 ~ Present
Postdoctoral Fellow. Institute of Statistical Science, Academia Sinica (中央研究院 統計科學研究所)	2019.09 ~ 2023.12
Postdoctoral Research Associate (Academia Sinica). Institute of Statistical Science, Academia Sinica (中央研究院 統計科學研究所)	2017.10 ~ 2019.09
Postdoctoral Fellow (MOST). Institute of Statistical Science, Academia Sinica (中央研究院 統計科學研究所)	2016.09 ~ 2017.10
Full-time Research Assistant. Institute of Statistical Science, Academia Sinica (中央研究院 統計科學研究所)	2007.02 ~ 2016.08
Full-time Research Assistant. Institute of Biomedical Sciences, Academia Sinica (中央研究院 生物醫學科學研究所)	2000.08 ~ 2006.09

PROFESSIONAL FIELD

Statistics, Epidemiology, Statistical Genetics, Bioinformatics, SNP array data analysis, Gene expression data analysis, Sequencing data analysis, Metabolomics data analysis, and biological and medical data analysis.

RESEARCH WORK SINCE THIS TERM OF POSTDOC IN ACADEMIA SINICA (2017.10 ~ Present)

- Develop a new version of metabolomics analysis software SMART (Liang et al., 2016, Analytical Chemistry). Constructing new modules for targeted metabolomics data analysis and more statistical methods with Mr. Chia-Wei Chen and Ms. Chih-Ting Yang (RAs in the lab of Dr. Hsin-Chou Yang). (Manuscript preparing)

- Conduct the collaborative studies with PIs in Academia Sinica:
 - i. Dr. Wen-Harn Pan (IBMS, AS) and Dr. Li-Li Xui: Execute the project “A data mining study to identify biopathways associated with deep-fried oil and unravel their roles in colorectal cancer and cardiovascular diseases”. Manuscript is in preparation (to be submitted).
 - ii. Dr. Chun-houh Chen, Institute of Statistical Science, Academia Sinica)

“臺灣人體生物資料庫智慧醫療計劃—整合基因資料與影像資料”

 (Manuscript preparing)
- Conduct the collaborative studies with PIs in other research institute:
 - i. 許惠恒醫師(臺北榮民總醫院內科部): 參與”深度學習與精準醫療應用於糖尿病與老化併發症預測與診斷平台”研究計畫。(paper prepared)
 - ii. Dr. Tina Hsueh-Ting Chiu (Department of Nutritional Science, FJU):

Methods and participant characteristics in the Health in Vegetarians Consortium: A cross-sectional analysis across 11 prospective studies. (Published, doi: <https://doi.org/10.1101/2024.01.15.24301161>).

INVITED PRESENTATION

1. Yu-Jen Liang. “Gene-based association test”. Invited Session: Bioinformatics. The 18th Southern Taiwan Statistical Conference. Kaohsiung, Taiwan (2009/Jun/26-27).
2. Yu-Jen Liang. “Pharmacometabolomics study of four anti-hypertensive drugs in the Han Chinese population of Taiwan”. Invited session: “Statistical Advances and Applications in Genomics, Metagenomics, and Metabolomics”. The 29th Southern Taiwan Statistical Conference. Taichung, Taiwan (2019/Jun/21-22).

PUBLICATION

[Journal Papers]

1. Chen, C.-H., Kuo, C.-L., Lin, M.C.P., **Liang, Y.-J.** and Fann, C.S.J.* (2005/12). Construction of endophenotypes for complex diseases in the presence of heterogeneity. *BMC Genetics* 6, S139. [SCI]
2. Yang, H.-C., **Liang, Y.-J.**, Huang, M.-C., Li, L.-H., Lin, C.-H., Wu, J.-Y., Chen, Y.-T. and Fann, C.S.J.* (2006/08). A genome-wide study of preferential amplification/hybridization in microarray-based pooled DNA experiments. *Nucleic Acids Research* 34, e106. [SCI]
3. Lian, I.-B., Chang, C.-J., **Liang, Y.-J.**, Yang, M.-J. and Fann, C.S.J.* (2007/02). Identifying differentially expressed genes in dye-swapped microarray experiments of small sample size. *Computational Statistics and Data Analysis* 51, 2602-2620. [SCI]
4. Yang, H.-C., **Liang, Y.-J.**, Wu, Y.-L., Chung, C.-M., Chiang, K.-M., Ho, H.-Y., Ting, C.-T., Lin, T.-H., Sheu, S.-H., Tsai, W.-C., Chen, J.-H., Leu, H.-B., Yin, W.-H., Chiu, T.-Y., Chen, C.-I., Fann, C.S.J., Wu, J.-Y., Lin, T.-N., Lin, S.-J., Chen, Y.-T., Chen, J.-W. and Pan, W.-H.* (2009/05). Genome-wide association study of young-onset hypertension in the Han Chinese Population of Taiwan. *PLoS ONE* 4, e5459. [SCI]
5. Yang, H.-C.*, **Liang, Y.-J.**, Chung, C.-M., Chen, J.-W. and Pan, W.-H. (2009/12). Genome-wide gene-based association study. *BMC Proceedings* 3, S135. [PubMed]
6. Yang, H.-C.*, **Liang, Y.-J.**, Chen, J.-W., Chiang, K.-M., Chung, C.-M., Ho, H.-Y., Ting, C.-T., Lin, T.-H., Sheu, S.-H., Tsai, W.-C., Chen, J.-H., Leu, H.-B., Yin, W.-H., Chiu, T.-Y., Chern, C.-I., Lin, S.-J., Tomlinson, B., Guo, Y., Sham, P. C., Cherny S. S., Lam, T. H., Thomas, G. N. and Pan, W.-H. (2012/03). Identification of IGF1, SLC4A4, WWOX, and SFMBT1 as Hypertension Susceptibility Genes in Han Chinese with a Genome-Wide Gene-Based Association Study. *PLoS ONE* 7, e32907. [SCI]
7. Yang, H.-C.*, Chang, L.-C., **Liang, Y.-J.**, Lin, C.-H. and Wang, P.-L. (2012/04). A genome-wide homozygosity association study identifies runs of homozygosity associated with rheumatoid arthritis in the human Major Histocompatibility Complex. *PLoS ONE* 7, e34840. [SCI]
8. Chiang, K.-M., Yang, H.-C., **Liang, Y.-J.**, Chen, J.-W., Hwang, S.-M., Ho, H.-Y., Ting, C.-T., Lin, T.-H., Sheu, S.-H., Tsai, W.-C., Chen, J.-H., Leu, H.-B., Yin, W.-H., Chiu, T.-Y., Chen, C.-I., Lin, S.-J., Thomas, G.-N., Tomlinson, B., Guo, Y., Gui, H.-S., Sham, P.-C., Lam, T.-H., Pan, W.-H.* (2014/06). A three-stage genome-wide association study combining multilocus test and gene expression analysis for

- young-onset hypertension in Taiwan Han Chinese. *American Journal of Hypertension* 27, 819-827. [SCI]
9. **Liang, Y.-J.**, Lin, Y.-T., Chen, C.-W., Lin, C.-W., Chao, K.-M., Pan, W.-H. and Yang, H.-C.* (2016/06). SMART: Statistical Metabolomics Analysis – an R Tool. *Analytical Chemistry* 88, 6334-6341. [SCI]
 10. Wang, P.-S., Kuo, C.-H., Yang, H.-C., **Liang, Y.-J.**, Huang, C.-J., Sheen, L.-Y. CA and Pan, W.-H.* (2018/05). Postprandial metabolomics response to various cooking oils in humans. *Journal of Agricultural and Food Chemistry* 66, 4977-4984. [SCI]
 11. Lynn, K.-S., Cheng, M.-L., Yang, H.-C., **Liang, Y.-J.**, Kang, M.-J., Chen, F.-L., Shiao, M.-S. and Pan, W.-H.* (2018/12). Vegetable signature derived from human urinary metabolomic data in controlled feeding studies. *Journal of Proteome Research* 48, 159-168. [SCI]
 12. Apaya, M. K., Shiao, J.-Y., Liao, G.-S., **Liang, Y.-J.**, Chen, C.-W., Yang, H.-C., Chu, C.-H., Yu, J.-C. and Shyur, L.-F.* (2019/05). Integrated omics-based pathway analyses uncover CYP epoxygenase-associated networks as theranostic targets for metastatic triple negative breast cancer. *Journal of Experimental & Clinical Cancer Research*. 38, 187. [SCI]
 13. Peng, H., Chiu, T. -Y., **Liang, Y.-J.**, Lee, C. -J., Liu, C. -S., Suen, C. -S., Yen, J. -J., Chen, H. -T., Hwang, M. -J., Hussain, M. -M., Yang, H. -C., & Yang-Yen, H. F. (2021/01). PRAP1 is a novel lipid-binding protein that promotes lipid absorption by facilitating MTTP-mediated lipid transport. *The Journal of biological chemistry*. 296, 100052. [SCI]
 14. Lin, Y.-C., **Liang, Y.-J.** and Yang, H.-C. CA (2022/07). Evaluating statistical significance in a meta-analysis by using numerical integration. *Computational and Structural Biotechnology Journal* 20, 3615–3620. [SCI]
 15. **Liang, Y.-J.**, Chiang, K.-M., Cheung, C.-M., Shiao, M.-S., Cheng, M.-L., Yang, H.-C.* and Pan, W.-H.* (2022/07). Pharmacometabolomics study of drug response to antihypertensive medications for hypertension marker identification in Han Chinese individuals in Taiwan. *Computational and Structural Biotechnology Journal* 20, 6458–6466. [SCI]

[中文期刊文章]

梁文雯、梁佑任、洪志遠和葉力森 (2006)：國立臺灣大學附設動物醫院犬口腔健康狀況之調查，《台灣獸醫誌》，32(3)，225-232。

HONOR

1. 2016 Outstanding Paper Award (Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University).
2. 2016 The paper “SMART: Statistical Metabolomics Analysis – an R Tool, Analytical Chemistry 88, 6334-6341” was selected as one of research spotlights of Institute of Statistical Science, Academia Sinica (中研院統計所研究亮點)