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Insight into the pathophysiology of cardiometabolic diseases using multiple omics approaches

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PhD portfolio

Education and Courses	Years	Hours
Code and data management with git (MGC course)	2020	6
Practical Linux	2020	8
Basic method and reasoning in biostatistics	2020	42
Epidemiology	2020	84
Python programming	2020	24
Multi-omics data integration using R	2020	40
PhD introductory course	2021	5
Meta analysis	2021	24
Survival analysis (Advanced Biostatistics)	2021	42
Regression analysis	2021	40
Causal inference	2022	84
Job Orientation Training	2022	24
(Inter)national conference and meetings	Years	Hours
European and international congress on obesity	2020	32
Annual Dutch Diabetes Research Meeting 2020	2020	16
EAS Congress	2021	32
Mendelian Randomization Conference 2021	2021	24
ECO / IFSO-EC Congress on Obesity	2022	32
Meeting of the Study Group on the Genetics of Diabetes (SGGD)	2022	24
28 th MGC workshop	2022	32
Awards	Years	Hours
Leiden University Fund	2023	-
Young Investigator Fellowship for the 89 th EAS Virtual Congress Helsinki, Finland	2021	-
Traineeship abroad	Years	Hours
Cambridge Ellis Machine Learning Summer School	2022	56
Visiting PhD in Copenhagen University	2023	240
Teaching activities	Years	Hours
Mendelian Randomization	2022	8
FOS course Cardiometabolic Disease	2022	2

Publications and Manuscript

- **Wang W**, Battini V, Carnovale C, Noordam R, van Dijk KW, Kragholm KH, van Heemst D, Soeorg H, Sessa M. A novel approach for pharmacological substantiation of safety signals using plasma concentrations of medication and administrative/healthcare databases: A case study using Danish registries for an FDA warning on lamotrigine. *Pharmacol Res.* 2023 Jul;193:106811. doi: 10.1016/j.phrs.2023.106811. Epub 2023 Jun 1. PMID: 37268178.
- **Wang W**, Luo J, Willems van Dijk K, et al. (2022) Assessment of the bi-directional relationship between blood mitochondrial DNA copy number and type 2 diabetes mellitus: a multivariable-adjusted regression and Mendelian randomisation study. *Diabetologia.* 10.1007/s00125-022-05759-6
- **Wang W**, Tesfay EB, van Klinken JB, et al. (2022) Clustered Mendelian randomization analyses identify distinct and opposing pathways in the association between genetically influenced insulin-like growth factor-1 and type 2 diabetes mellitus. *Int J Epidemiol.* 10.1093/ije/dyac119
- **Wang W**, van Dijk KW, Wijsman CA, et al. (2021) Differential insulin sensitivity of NMR-based metabolomic measures in a two-step hyperinsulinemic euglycemic clamp study. *Metabolomics* 17(6): 57. 10.1007/s11306-021-01806-2
- Loh NY, **Wang W**, Noordam R, Christodoulides C (2022) Obesity, Fat Distribution and Risk of Cancer in Women and Men: A Mendelian Randomisation Study. *Nutrients* 14(24): 5259
- Xu H, Schwander K, Brown MR, **Wang W**, et al. (2021) Lifestyle Risk Score: handling missingness of individual lifestyle components in meta-analysis of gene-by-lifestyle interactions. *Eur J Hum Genet* 29(5): 839-850. 10.1038/s41431-021-00808-x
- Nagarajan P, Winkler TW, Bentley AR, Miller CL, Kraja AT, Schwander K, Lee S, **Wang W**, et al. A Large-Scale Genome-Wide Study of Gene-Sleep Duration Interactions for Blood Pressure in 811,405 Individuals from Diverse Populations. medRxiv [Preprint]. 2024 Mar 8:2024.03.07.24303870. doi: 10.1101/2024.03.07.24303870. PMID: 38496537; PMCID: PMC10942520.Sleep- lipids
- Noordam R, **Wang W**, Nagarajan P, et al. A Large-Scale Genome-Wide Gene-Sleep Interaction Study in 732,564 Participants Identifies Lipid Loci Explaining Sleep-Associated Lipid Disturbances. Under submission

Curriculum Vitae

Wenyi Wang (王文怡) was born in Guizhou, China, in January 1995. After completing high school in 2013, she pursued a Bachelor's degree in Pharmacy at Wenzhou Medical University and graduated in 2017. In the same year, she began her master's research training in quantitative pharmacology at the Division of Pharmacology of Leiden University, Netherlands. During her master's program, she performed an internship at Leiden Academic Center for Drug Research (LACDR) under the supervision of Prof. Dr. Elizabeth de Lange and Dr. Michiel van Esdonk, focusing on population pharmacokinetics (PK) modeling and semi-mechanistic physiologically based pharmacokinetic (PBPK) modeling. In 2019, she completed her second internship at the department of Pharmacometrics of Uppsala University, Sweden, where she worked on pharmacokinetic-pharmacodynamic (PKPD) modeling under the guidance of Prof. Dr. Lena E. Friberg, Prof. Dr. Elisabet I. Nielsen and Dr. Anders Thorsted. After obtaining her Master's degree in Bio-pharmaceutical Sciences in 2019, she continued her education as a PhD candidate in Genetic Epidemiology at the Department of Human Genetics, Leiden University Medical Center, under the supervision of Prof. dr. Ko Willems van Dijk, Dr. Diana van Heemst and Dr. Raymond Noordam. Part of her PhD research was performed abroad in Department of Drug Design and Pharmacology at Copenhagen University, Denmark, under supervision of Dr. Maurizio Sessa and Dr. Hiie Soeorg, working on a project to combine the fields of pharmacometrics and epidemiology. Currently, she works as a Scientist of Clinical Pharmacology and Quantitative Science at GENMAB. Looking ahead, she will continue her journey in exploring possibilities in integrating pharmacometrics and genetic epidemiology.

Acknowledgements

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I would like to extend my heartfelt gratitude to my supervisors abroad, Dr. Maurizio Sessa and Dr. Hiie Soeorg. Maurizio, thank you for hosting me in your research group and giving me the opportunity to work on a project that merges the two fields I am passionate about. I deeply appreciate not only the professional insights you shared but also the invaluable career and life guidance you provided. To Hiie, I am grateful for your assistance with mathematics and your patience in helping me resolve the issues I encountered in the model. Additionally, I want to express my sincere thanks to my colleagues at Copenhagen University. Though our time together was short, I truly enjoyed it and am thankful for the experience.

To my colleagues at Human Genetics, Endocrinology and Epidemiology departments, with whom I had the opportunity to share my projects and receive valuable feedback during regular research meetings. Special thanks to Linjun, Jiao and Dorina. Linjun, thank you for your companionship, for the shared moments of joys and tears, and for the cherished connection we've built. Jiao, thanks for warmly welcoming me in both Leiden and Copenhagen, for sharing your experience, and for providing help with various matter throughout this journey. Dorina, thanks for the enriching conversations we

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