



# Xiaotao Shen, Ph.D.

Nanyang Assistant Professor

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## Research Interests

- Multi-omics Data Integration Methods Development
- Host-Microbe Interaction
- Aging and Aging-Related Diseases
- Maternal and Child Health
- Wearable Data and Precision Medicine
- Environmental Health

## Education & Research Experiences

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| • Director                                 | 2025/3-present, <a href="#">Singapore Phenome Center</a>   |
| • Adjunct Principal Investigator           | 2024/10-present, <a href="#">KK Women's and Children's Hospital, Singapore</a>                                   |
| • Nanyang Assistant Professor              | 2024/5–present, <a href="#">Nanyang Technological University, Singapore</a>                                      |
| • Postdoctoral Research Fellow             | 2019/4–2024/4, <a href="#">Stanford University</a><br>(Advisor: <a href="#">Prof. Michael Snyder</a> )           |
| • Ph.D. in Bioinformatics and Metabolomics | 2013/9–2018/12, <a href="#">Chinese Academy of Sciences</a><br>(Advisor: <a href="#">Prof. Zheng-Jiang Zhu</a> ) |
| • B.S. in Biotechnology                    | 2009/9–2013/6, <a href="#">Inner Mongolia University</a>   |

## Honors & Awards

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| • Young Investigator Award                   | The 3 <sup>rd</sup> Chinese American Society For Mass Spectrometry Conference (2023) |
| • SPORR 2023 Rigor and Reproducibility Award | Stanford Program on Research Rigor and Reproducibility (2023)                        |
| • Winner Selected by the Event Committee     | Exposome Data Challenge Event (2021)   |
| • Student Travel Award for Oral Presentation | The International Metabolomics Society (2018)  |
| • International Conference Travel Award      | The Metabolites Journal (2018)   |
| • China National Scholarship                 | Ministry of Education of the People's Republic of China (2017)                       |
| • Award for Outstanding Youth Report         | The 3 <sup>rd</sup> China MS Analysis Conference (2017)                              |
| • Merit Student                              | University of Chinese Academy of Sciences (2016)                                     |
| • Award for Outstanding Youth Report         | The 34 <sup>th</sup> China MS Society Conference (2016)                              |
| • Inner Mongolia Outstanding Graduate        | Inner Mongolia Autonomous Region (2013)  |
| • National Encouragement Scholarship         | Inner Mongolia University (2011)   |

## First/Co-first/Corresponding/Co-corresponding Author Publications

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+: Co-first Author. \*: Co-Corresponding Author

1. X Wang+, Y. Liu+, C. Jiang, Z. Huang, H. Yan, S. Wong, C. H. Johnson, J. Zhang, Y. Ge, F. Zhang, R. Lai, P. Gao\*, X. Zhang\*, **X. Shen\***, TidyMass2: Advancing LC-MS Untargeted Metabolomics Through Metabolite Origin Inference and Metabolic Feature-based Functional Module Analysis. *Nature Communications*, 2026. <https://doi.org/10.1038/s41467-026-68464-7>
2. Y. Ge+, F. Zhang+, Y. Liu+, C. Jiang, P. Gao, N. Tan, S., Y. Shen, Q. Zhou, X. Zhou, C. Wang\*, **X. Shen\***, Leveraging Large Language Models for Redundancy-Aware Pathway Analysis and Deep Biological Interpretation. *bioRxiv*, 2025.
3. S. Liu+\*, H. Sun+\*, Z. Du+, S. Lu, C. Wang, Y. Zhang, Z. Luo, L. Wang, Z. Fan, P. Wei, Y. Yan, J. Zhang, S. Yin, T. Liu, Q. He, X. Guo, K. Ding, J. Zhou, H. Hua, C. Yu, W. Xu, J. Shan, Y. Li, Y. Xu, **X. Shen\***, G. Cao\*, W. Zhou\*, Metabolomics and proteomics reveal blocking argininosuccinate synthetase 1 alleviates colitis in mice. *Nature Communications*, 2025.
4. Z. Du+, F. Zhang+, Y., Y. Liu, H. Yu, Y. Wang, R. Dalan, **X. Shen\***, Application of Wearable Devices in Diabetes Management. *Health and Metabolism*, 2025, 7-7.
5. Y Liu, F Zhang, Y Ge, Q Liu, S He, **X Shen\***, Application of LLMs/Transformer-Based Models for Metabolite Annotation in Metabolomics. *Health and Metabolism*, 2025, 7-7.
6. **X. Shen**+, S. Chen+, L. Liang+, M. Avina, H. Zackriah, L. Jelliffe-Pawlowski, L. Rand, M. P. Snyder\*, Longitudinal Urine Metabolic Profiling and Gestational Age Prediction in Pregnancy. *Briefing in Bioinformatics*, 2025, 26 (1).
7. **X. Shen**+, C. Wang+, X. Zhou, W. Zhou, D. Hornburg, S. Wu, and M.P. Snyder\*, Nonlinear dynamics of multi-omics profiles during human aging. *Nature Aging*, 2024, 4, 1619-1634.
8. X. Zhou+, **X. Shen**+, J. Johnson, D. Spakowicz, M. Agnello, W. Zhou, M. Avina, A. Honkala, F. Chleilat, S. Chen, K. Cha, S. Leopold, C. Zhu, L. Chen, L. Lyu, D. Hornburg, S. Wu, X. Zhang, C. Jiang, L. Jiang, L. Jiang, R. Jian, A. Brooks, M. Wang, K. Contrepois, P. Gao, S. Rose, T. Tran, H. Nguyen, A. Celli, B. Hong, E. Bautista, Y. Dorsett, P. Kavathas, Y. Zhou, E. Sodergren, G.M. Weinstock, M.P. Snyder\*. Longitudinal Profiling of the Microbiome at Four Body Sites Reveals Core Stability and Individualized Dynamics During Health and Disease. *Cell Host&Microbe*, 2024.
9. **X. Shen**+, R. Kellogg+, D. Panyard+, N. Bararpour+, K. Castillo, B. Lee-McMullen, A. Delfarah, J. Ubellecker, S. Ahadi, Y. Rosenberg-Hasson, A. Ganz, K. Contrepois, B. Michael, I. Simms, C. Wang, D. Hornburg, M.P. Snyder\*, Multi-omic Microsampling Captures Health Perturbations in A Lifestyle Context. *Nature Biomedical Engineering*, 2023.
10. **X. Shen**+, C. Wang+, M.P. Snyder\*, massDatabase: Utilities for the Operation of the Public Compound and Pathway Database, *Bioinformatics*, 2022, btac546.
11. **X. Shen**+, W. Shao+, C. Wang+, L. Liang, S. Chen, S. Zhang, M. Rusu\*, M.P. Snyder\*, Deep Learning-based Pseudo-Mass Spectrometry Imaging Analysis for Precision Medicine, *Briefing in Bioinformatics*, 2022, bbac331.
12. **X. Shen**+, H. Yan+, C. Wang+, P. Gao, C.H. Johnson\*, M.P. Snyder\*, TidyMass an Object-oriented Reproducible Analysis Framework for LC-MS Data, *Nature Communications*, 2022, 4365.
13. P. Gao+, **X. Shen**+, X. Zhang, C. Jiang, M. P. Snyder\*, Precision Environmental Health Monitoring by Longitudinal Exposome and Multi-omics Profiling, *Genome Research*, 2022, 32, 1199-1214.
14. **X. Shen**+, S. Wu+, L. Liang, S. Chen, K. Contrepois, Z.-J. Zhu\* and M.J. Snyder\*, metID: an R Package for Automatable Compound Annotation for LC-MS-based Data, *Bioinformatics*, 2021, 1, 1-2.

15. X. Shen, R. Wang, X. Xiong, Y. Yin, Y. Cai, J. Ma, N. Liu, Z.-J. Zhu\*, Large-scale Metabolite Identification for Untargeted Metabolomics Using Metabolic Reaction Network, *Nature Communications*, 2019, 10:1516. 
16. X. Shen and Z.-J. Zhu\*, MetFlow: An Interactive and Integrated Workflow For Metabolomics Data Cleaning and Differential Metabolite Discovery, *Bioinformatics*, 2019, 35, 16. 
17. H. Jia+, X. Shen+, Y. Guan, M. Xu, M. Mo, J. Zhu\* and Z.-J. Zhu\*, Predicting the Pathological Response to Neoadjuvant Chemoradiation Using Untargeted Metabolomics in Locally Advanced Rectal Cancer, *Radiotherapy and Oncology*, 2018, 128, 548-556. 
18. J. Wang+, T. Zhang+, X. Shen+, J. Liu, D. Zhao, Y. Sun, L. Wang, Y. Liu, X. Gong, Y. Liu, Z.-J. Zhu\*, F. Xue\*, Serum Metabolomics for Early Diagnosis of Esophageal Squamous Cell Carcinoma by UHPLC-QTOF/MS, *Metabolomics*, 2016, 12: 116. 
19. X. Shen, X. Gong, Y. Cai, Y. Guo, J. Tu, T. Zhang, J. Wang, F. Xue, Z.-J. Zhu\*, Normalization and Integration of Large-Scale Metabolomics Data Using Support Vector Regression, *Metabolomics*, 2016, 12: 89. 

## Collaborative Publications

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1. S. Chen, Y. Yuan, Y. Wang, Y. Peng, H. Tun, Z. Jiang, Y. Miao, S. Lee, X. Yin, X. Shen, O. DeLeon, E. Chang, F. Chan, Y. Sun, S. Ng, Q. Su. Identification of antimicrobial peptides from ancient gut microbiomes. *Nature Communications*, 2026. <https://doi-org.stanford.idm.oclc.org/10.1038/s41467-026-68495-0>
2. Z. Song, M. Kim, J. Lee, T. Kwon, J. Kim, J. Kim, S. Kim, S. Kim, B. Jun, S. Lee, W. Park, I. Sonu, M. Rosen, C. Ong, X. Shen, L. Ng, G. Kim, S. Chae, K. Siah, D. Ho, S. Song, N. Martinez-Martin, J. Song, K. Yew, M. Kim, H. Huang, S. Wong, B. Lee, S. Park. Deployment of a cloud-based passive defecation monitoring system for continuous gut health monitoring. *Nature Protocols*, 2026. <https://doi-org.stanford.idm.oclc.org/10.1038/s41596-025-01296-9>
3. I. Marić, A. Mahzarnia, H. Mujuru, G. Chimhini, S. Saha, M. Hassan, N. Otieno, S. Hawken, K. Wilson, X. Shen, S. Lancaster, R. Wong, J. Reiss, J. Kerner, M. Snyder, W. Hay, G. Shaw, D. Stevenson, V. Ward, G. Darmstadt. *Science Advances*, 2025, 11. 10.1126/sciadv.adu9145
4. M. Gladding, X. Shen, M. Snyder, P. Havel, S. Adams. Interindividual Variability in Postprandial Plasma Fructose Patterns in Adults. *Nutrients*, 2024, 16 (18), 3079.
5. E. Xie, X. Shen, Y. Yeo, Z. Xing, J. Ebinger, Y. Duan, Y. Zhang, S. Cheng, F. Ji, J. Deng. Exploring the underlying molecular mechanisms of acute myocardial infarction after SARS-CoV-2 infection. *American Heart Journal Plus: Cardiology Research and Practice*, 2024, 44, 100417.
6. C. Peng, Q. Chen, S. Tan, X. Shen, C. Jiang. Generalized Reporter Score-based Enrichment Analysis for Omics Data, *Briefings in Bioinformatics*, Volume 25, Issue 3, May 2024, bbae116. 
7. D. Ding, X. Shen, M.P. Snyder, R. Tibshirani, Semi-supervised Cooperative Learning for Multiomics Data Fusion, Machine Learning for Multimodal Healthcare Data. ML4MHD 2023. *Lecture Notes in Computer Science*, vol 14315. Springer, Cham. 
8. S. Jain, L. Pei, J. Spraggins, M. Angelo, J. Carson, N. Gehlenborg, F. Ginty, J. Gonçalves, J. Hagood, J. Hickey, N. Kelleher, L. Laurent, S. Lin, Y. Lin, H. Liu, A. Naba, E. Nakayasu, W. Qian, A. Radtke, P. Robson, B. Stockwell, R. Plas, I. Vlachos, M. Zhou, HuBMAP Consortium, K. Borner, M. Snyder, HuBMAP Consortium, Advances and Perspectives for the Human BioMolecular Atlas Program (HuBMAP), *Nature Cell Biology*, 2023. 

9. W. Wei, N. Riley, X. Lyu, **X. Shen**, J. Guo, S. Raun, M. Zhao, M. Moya-Garzon, H. Basu, A. Tung, V. Li, W. Huang, A. Wiggenhorn, K. Svensson, M. Snyder, C. Bertozzi, J. Long, **Organism-wide, Cell-type-specific Secretome Mapping of Exercise Training in Mice**, *Cell Metabolism*, 35: 1-19, 2023. 
10. S. Zhang, J. Cooper-Knock, A. Weimer, M. Shi, L. Kozhaya, D. Unutmaz, C. Harvey, T. Julian, S. Furini, E. Frullanti, F. Fava, A. Renieri, P. Gao, **X. Shen**, I. Timpanaro, K. Kenna, J. Baillie, M. Davis, P. Tsao, M.P. Snyder, **Multiomic Analysis Reveals Cell-type-specific Molecular Determinants of COVID-19 Severity**, *Cell Systems*, 13(8):598-614, 2022. 
11. L. Maitre, J. Guimbaud, C. Warembourg, N. Güil-Oumrait, P. Petrone, M. Chadeau-Hyam, M. Vrijheid, X. Basagaña, J. Gonzalez, **Exposome Data Challenge Participant Consortium**, **State-of-the-art methods for exposure-health studies: Results from the exposome data challenge event**, *Environment International*, 168: 107422, 2022. 
12. M. Wei, L. Zhao, J. Lv, X. Li, G. Zhou, B. Fan, **X. Shen**, D. Zhao, F. Xue, J. Wang, T. Zhang, **The Mediation Effect of Serum Metabolites On The Relationship Between Long-Term Smoking Exposure and Esophageal Squamous Cell Carcinoma**, *BMC cancer*, 21, 415. 
13. J. Lv, J. Wang, **X. Shen**, J. Liu, D. Zhao, X. Li, B. Fan, Y. Sun, F. Xue, Z.-J. Zhu, T. Zhang, **A Serum Metabolomics Analysis Reveals A Panel of Screening Metabolic Biomarkers for Esophageal Squamous Cell Carcinoma**, *Clinical and Translational Medicine*, 2021, 11, 5. 
14. X. Li, L. Zhao, M. Wei, J. Lv, Y. Sun, **X. Shen**, D. Zhao, F. Xue, T. Zhang, J. Wang, **Serum Metabolomics Analysis for The Progression of Esophageal Squamous Cell Carcinoma**, *Journal of Cancer*, 2021, 12, 3190-3197. 
15. L. Liang, M. Rasmussen, B. Piening, **X. Shen**, S. Chen, H. Rost, J. Snyder, R. Tibshirani, L. Skotte, N. Lee, K. Contrepois, B. Feenstra, H. Zackriah, M.J. Snyder, M. Melbye, **Metabolic Dynamics and Prediction of Gestational Age and Time to Delivery in Pregnant Women**, *Cell*, 2020, 181, 7, 1680-1692. 
16. Z. Wang, B. Cui, F. Zhang, Y. Yang, **X. Shen**, Z. Li, W. Zhao, Y. Zhang, K. Deng, Z. Rong, K. Yang, X. Yu, K. Li, P. Han, and Z.-J. Zhu, **Development of A Correlative Strategy to Discover Colorectal Tumor Tissue Derived Metabolite Biomarkers in Plasma Using Untargeted Metabolomics**, *Analytical Chemistry*, 2019, 91, 3, 2401-2408. 
17. Z. Zhou, **X. Shen**, X. Chen, J. Tu, X. Xiong, and Z.-J. Zhu, **LipidIMMS Analyzer: Integrating Multi-dimensional Information to Support Lipid Identification in Ion Mobility-Mass Spectrometry based Lipidomics**, *Bioinformatics*, 2018, 35, 4, 698-700. 
18. Z. Zhou, J. Tu, X. Xiong, **X. Shen**, and Z.-J. Zhu, **LipidCCS: Prediction of Collision Cross-Section Values for Lipids with High Precision to Support Ion Mobility-Mass Spectrometry based Lipidomics**, *Analytical Chemistry*, 2017, 89, 9559-9566. 
19. Z. Zhou, **X. Shen**, J. Tu, and Z.-J. Zhu, **Large-Scale Prediction of Collision Cross-Section Values for Metabolites in Ion Mobility-Mass Spectrometry**, *Analytical Chemistry*, 2016, 88, 11084-11091. 

## Patents

1. L. Liang, M.P. Snyder, **X. Shen**, S. Chen, **Systems and Methods for Evaluating Gestational Progress and Applications Thereof**, 2023, 18251702, USA.
2. M.P. Snyder, R. Kellogg, **X. Shen**, **Multi-Omic Sample Analysis Methods**, 2022, USA.
3. Z-J. Zhu, **X. Shen**, **A Method for Metabolite Annotation and Dysregulated Pathway Analysis**, 2019, China.

## Invited Talks

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1. **Multi-omics and Its Application in Precision Medicine and Biomedical Studies**, 2025/7/11, The 5th Environmental Exposure and Health International Symposium, Guiyang, China.
2. **Multi-omics and its application in precision medicine and biomedical studies**, 2024/12/4, FEBS-IUBMB-ENABLE 2024 Conference, Singapore.
3. **Unraveling the Comprehensive Metabolic Network Shaped by the Gut Microbiome and Its Role in Cardiovascular Diseases**, 2024/11/25, ILSI Southeast Asia Region Symposium, Malaysia.
4. **Dynamic Changes During Human Aging Revealed in Multi-omics Profiles. 2024 Chinese Biophysics Congress**, 2024/7, Lanzhou, China.
5. **Multi-omics For Precision Medicine. Hong Kong Baptist University**, 2024/7, Hong Kong, China.
6. **Multi-omics For Precision Medicine. Metabolomics in Human Health**, 2024/5, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore.
7. **R for Mass Spectrometry Data Processing. CAS Center for Excellence in Molecular Plant Sciences**. 2024/5, Shanghai, China.
8. **Multi-omics For Precision Medicine. Interdisciplinary Research Center on Biology and Chemistry**, 2024/3, Shanghai, China.
9. **Remote and Flexible Microsampling Multi-omics for Precision Medicine. The iPOP Summit 2023**. 2023/4, Stanford University, USA.
10. **Bioinformatics Algorithm Development for Mass Spectrometry Data and its Application to Precision Medicine. University of Colorado**. 2023/4, Denver, Colorado, USA.
11. **Bioinformatics Algorithm Development for Mass Spectrometry Data and its Application to Precision Medicine. University of Minnesota**. 2023/4, Twin Cities, Minnesota, USA.
12. **Bioinformatics Algorithm Development for Mass Spectrometry Data and its Application to Precision Medicine. University of Connecticut**. 2023/3, Storrs, Connecticut, USA.
13. **Bioinformatics Algorithm Development for Mass Spectrometry Data and its Application to Precision Medicine. Altos Labs**. 2023/3, Redwood City, USA.
14. **Bioinformatics Algorithm Development for Mass Spectrometry Data and its Application to Precision Medicine. Ohio State University**. 2023/2, Columbus, USA.
15. **Bioinformatics Method Development for Mass Spectrometry and its Application to Precision Medicine. Stanford CVI Early Career Research Roundtable**, 2022/11, Stanford, USA.

## Oral Presentations

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1. **Molecular Phenotypes and Responses During Human Pregnancy. ASMS 2025**, 2025/6/5, Baltimore, USA.
2. **Nonlinear dynamics of multi-omics profiles during human aging. Biomarkers of Aging Conference**, 2024/10, Boston, USA.
3. **Nonlinear Dynamic Changes During Human Aging Revealed in Multi-omics Profiles. Bay Area Metabolism Meeting (BAMM) 2023**, 2023/9, Palo Alto, USA.

4. **Multi-omics Microsampling for The Profiling of Lifestyle-Associate Changes in Health. The 3<sup>rd</sup> Chinese American Society for Mass Spectrometry Conference**, 2023/8, Virtual meeting.
5. **Multi-omics Microsampling for The Profiling of Lifestyle-Associate Changes in Health. The 71<sup>th</sup> American Society for Mass Spectrometry Conference**, 2023/6, Houston, USA.
6. **Multi-omics Microsampling for The Profiling of Lifestyle-Associate Changes in Health. Invited presentation**, 2023/2, Huazhong University of Science and Technology, China.
7. **Multi-omics Microsampling for The Profiling of Lifestyle-Associate Changes in Health. Stanford Postdoc Symposium**, 2023/2, Stanford, USA.
8. **Deep Learning-based Pseudo-Mass Spectrometry Imaging Analysis for Precision Medicine. CASMS Virtual Conference**, 2022/10, Virtual meeting.
9. **TidyMass: An Object-oriented Reproducible Analysis Framework for LC-MS Data. ACS Fall 2022**, 2022/8, Virtual meeting.
10. **metID: an R Package for Automatable Compound Annotation for LC-MS-based Data. The 69<sup>th</sup> American Society for Mass Spectrometry Conference**, 2021/11, Philadelphia, USA.
11. **Decoding Links Between the Exposome and Health Outcomes by Multi-omics Analysis. Exposome Data Challenge Event**, 2021/4, Virtual meeting.
12. **Metabolic Reaction Network-based Recursive Metabolite Identification for Untargeted Metabolomics. The 14<sup>th</sup> International Conference of the Metabolomics Society**, 2018/6, Seattle, USA.
13. **Assessment of the Response to Neoadjuvant Chemo-Radiation in Rectal Cancer Patients based on a Metabolomics Approach. The 3<sup>rd</sup> China Mass Spectrometry Analysis Conference**, 2017/12, Xiamen, China.
14. **Normalization and Integration of Large-Scale Mass Spectrometry-based Metabolomics Data Using Support Vector Regression. The 34<sup>th</sup> China Mass Spectrometry Society Conference**, 2016/9, Xining, China.
15. **Normalization and Integration of Large-Scale MS-based Metabolomics Data Using Support Vector Regression. The 64<sup>th</sup> American Society for Mass Spectrometry Conference**, 2016/6, San Antonio, USA.

## Poster Presentations

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1. **Nonlinear Dynamic Changes During Human Aging Revealed in Multi-omics Profiles. The 72<sup>nd</sup> American Society for Mass Spectrometry Conference**, 2024/6, Anaheim, California, USA.
2. **Nonlinear Dynamic Changes During Human Aging Revealed in Multi-omics Profiles. Stanford Bio-X Interdisciplinary Initiatives Seed Grants Program Symposium 2023**. 2023/9, Stanford, USA.
3. **TidyMass An Object-oriented Reproducible Analysis Framework for LC-MS Data. Stanford Data Science Conference**, 2023/5, Stanford University, USA.
4. **Deep Learning-based Pseudo-Mass Spectrometry Imaging Analysis for Precision Medicine. Stanford Genetics Retreat 2022**, 2022/9, Monterey, USA.
5. **Deep Learning-based Pseudo-Mass Spectrometry Imaging Analysis for Precision Medicine. Bay Area Metabolism Meeting (BAMM) 2022**, 2022/9, Palo Alto, USA.
6. **TidyMass An Object-oriented Reproducible Analysis Framework for LC-MS Data. The 70<sup>th</sup> American Society for Mass Spectrometry Conference**, 2022/6, Minneapolis, USA.

7. **Longitudinal Interactions Between Levels of Serum Cytokine and the Microbiome from Four Body Sites.** **IMMUNOLOGY2022**, 2022/5, Portland, USA.
8. **TidyMass An Object-oriented Reproducible Analysis Framework for LC-MS Data.** **Stanford Genetics Retreat 2021**, 2021/9, Palo Alto, USA.
9. **Longitudinal Urine Metabolic Profiling and Gestational Age Prediction in Pregnancy.** **The 17<sup>th</sup> International Conference of the Metabolomics Society**, 2020/6, Virtual meeting.
10. **Metabolic Reaction Network based Metabolite Annotation in Untargeted Metabolomics.** **The 13<sup>th</sup> International Conference of the Metabolomics Society**, 2017/6, Brisbane, Austria.

## Teaching

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- **Bioanalytical Techniques** 2025/10-Present, **Nanyang Technological University, Singapore**
- **Introduction to Biostatistics with R** 2025/3-Present, **Nanyang Technological University, Singapore**
- **LC-MS Data Processing and Analysis Using R language** 2022/9, **Biotree Company**  
Responsibilities: Lecture
- **R Language for Reproducible Data Analysis** 2020/4, **SCPA**  
Responsibilities: Lecture
- **Stanford School of Medicine Intern** 2019/8–2024/5, **Stanford University**  
Responsibilities: Mentor
- **Mass Spectrometry Analysis** 2014/9–2014/12, **Chinese Academy of Sciences**  
Responsibilities: Guest lecturer

## Volunteering

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- **Member of Editorial Board** 2023/8-present, **npj Women's health**
- **Member of Youth Editorial Board** 2023/2–present, **Phenomics**
- **Member of Youth Editorial Board** 2023/1–present, **Brain-X**
- **Member of Youth Editorial Board** 2022/7–present, **iMeta**
- **Co-chair** 2021/7–2022/8, **Stanford Chinese Postdoctoral Association**
- **Organizer** 2020/2–2021/12, **Stanford Chinese Postdoctoral Oral Presentation Improvement**
- **Member** 2019/7–2021/7, **Stanford Chinese Postdoctoral Association**

## Journal Referee

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- *Nature Biotechnology, Nature Aging, Nature Methods, Nature Genetics, Nature Communications, Cell Metabolism, Briefing in Bioinformatics, Bioinformatics, GigaScience, PLOS one, Genomics, Proteomics&Bioinformatics, Communications Chemistry, Communications Biology, Frontiers Molecular Biosciences, iMeta, iMetaOmics, Proteomics, BMC Bioinformatics, Proteomics, Cell Systems, Journal of Integrative Plant Biology, Cell Reports Medicine, Cell Reports Methods, Advanced Science*

## Referrers

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