

GUANGCHUANG YU

Professor and dean of the Department of Bioinformatics, School of Basic Medicine, Southern Medical University.

My research group is committed to developing bioinformatics analysis algorithms and software through multidisciplinary integration, providing tools for exploring and analyzing data to solve complex issues in the field of biomedicine. At the same time, through the integration of multi-omics data, we systematically study the pathogenic mechanisms of reproduction and mental diseases.

教授、博导，现任南方医科大学基础医学院生物信息学系系主任。

课题组致力于通过多学科交叉融合，开发生物数据分析算法和软件，为解决生物医学领域复杂问题提供探索和分析数据的工具；同时通过多组学数据融合，系统性地研究生育与精神类疾病的致病机理



RESEARCH EXPERIENCE

present 2018	Professor School of Basic Medical Sciences • 2021-present, Director, Department of Bioinformatics • 2019-2021, Associate director, Department of Bioinformatics	Southern Medical University
2018 2017	Post-doctoral Fellow State Key Laboratory of Infectious Diseases	The University of Hong Kong
2013 2009	Bioinformatician Key Laboratory of Functional Protein Research of Guangdong Higher Education Institutes	Jinan University

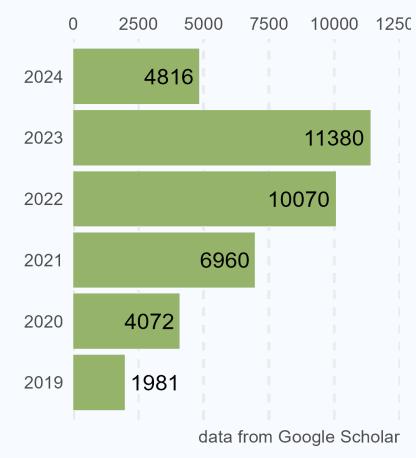
EDUCATION

2017 2013	PhD., Bioinformatics The University of Hong Kong • Thesis: Big-data computational methods for studying molecular evolution: from accurate genome assembly to phylogenetic analysis and data integration	Hong Kong, CN
2009 2006	M.S., Biochemistry and Molecular Biology Anhui Medical University • Thesis: miRNA靶基因计算分析新方法及其应用研究	Hefei, CN
2005 2001	B.S., Biotechnology South China Agricultural University	Guangzhou, CN

CONTACT

- ✉ gcyu1@smu.edu.cn
🐦 [guangchuangyu](#)
/github.com/YuLab-SMU
🔗 <https://yulab-smu.top/>
wechat [YuLabSMU](#) (公众号)
📞 +86-20-61648632

🏆 Highly Cited Researcher
Citation = 41774
H-index = 33
I10-index = 48



2019	● Antigenic cartography and antibody landscapes course University of Cambridge	📍 Cambridge, UK
2018	● 南方医科大学高层次人才“不忘初心 牢记使命”学习教育 延安干部培训学院	📍 Yan'an, CN
2015	● Train the Trainers Institut Pasteur	📍 Paris, FR
2009 2007	● Visiting student Beijing Institute of Radiation Medicine	📍 Beijing, CN

▣ CERTIFICATE

2019	● 高等学校教师资格 广东省教育厅
2015	● Certificate of Teaching and Learning in Higher Education Centre for Enhancement of Teaching and Learning 📍 The University of Hong Kong

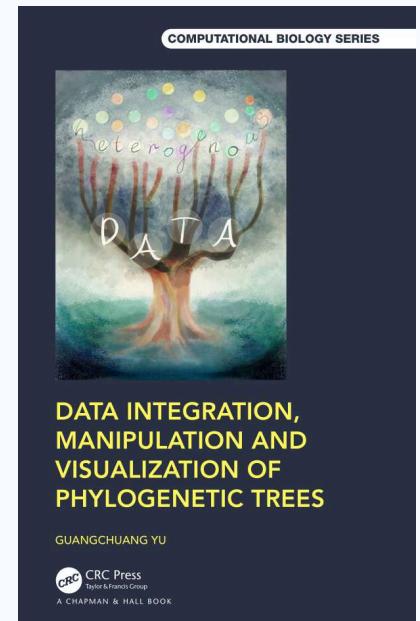
🏆 SCHOLARSHIPS & AWARDS

2023	● Highly Cited Researcher Clarivate
2023 2021	● 连续3年入选“终身科学影响力”排行榜 全球前2%顶尖科学家榜单
2023 2020	● 连续4年入选“年度科学影响力”排行榜 全球前2%顶尖科学家榜单
2023 2021	● 连续3年入选“中国高被引学者” Elsevier
2022	● 2020学年教学优秀一等奖 南方医科大学
2017 2013	● Postgraduate studentships The University of Hong Kong
2012	● Best paper of the year 2010 Journal of Integrated OMICS



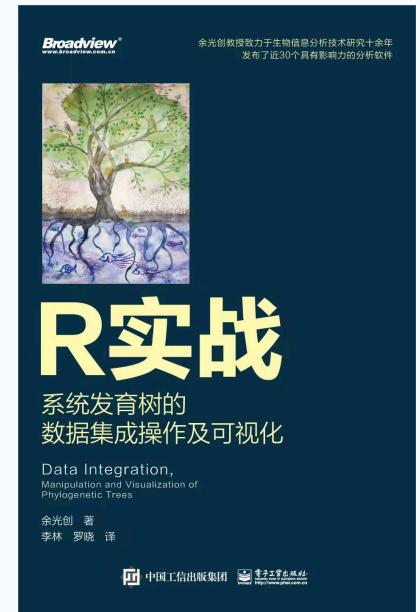
↳ GRANTS

- 2026
|
2023
- 基于噬菌体-细菌-人类宿主互作的多囊卵巢综合征患者肠道微生态解析与干预 (32270677)
主持, CNY ￥540,000, 国家自然科学基金, 面上项目
- 2025
|
2022
- 应用型生物信息学专项人才培养计划 (特色班)
主持, CNY ￥300,000, 广东省高校教学质量与教学改革工程建设项目
- 2022
|
2020
- 大样本多组学数据联合分析系统研究与构建
主持, CNY ￥600,000, 军科委国防科技创新特区
- 2020
|
2018
- 南方医科大学第三层次人才引进科研项目
主持, CNY ￥1,500,000
- 病毒性新发传染病的研究与防治 (2017YFE0190800)
参与, CNY ￥990,000, 中华人民共和国科学技术部, 国家重点研发计划
- 2013
- hnRNP蛋白在调控人肺癌细胞周期胞质分裂中的作用研究 (21613414)
主持, CNY ￥100,000, 中央高校基本科研业务费专项资金
- 2011
- HeLa细胞周期动态蛋白质组学分析 (21611303)
主持, CNY ￥20,000, 中央高校基本科研业务费专项资金



📘 BOOKS

- 2023
- R实战：系统发育树的数据集成操作及可视化
ISBN: 9787121451829
 - 余光创 (著), 李林, 罗晓 (译)
 - 电子工业出版社
- 2022
- Data Integration, Manipulation and Visualization of Phylogenetic Trees
ISBN: 9781032233574, DOI: 10.1201/9781003279242
 - G Yu
 - Chapman and Hall/CRC
 - Biomedical Data Visualization: Methods and Applications
ISBN: 9782889761906, DOI: 10.3389/978-2-88976-190-6
 - G Yu, TTY Lam, CL Xiao, M Zhou (eds.)
 - Lausanne: Frontiers Media SA



- 2020
- **Gene Ontology Semantic Similarity Analysis Using GOSemSim**
ISBN: 9781071603000, DOI: 10.1007/978-1-0716-0301-7_11
 - G Yu
 - In: Kidder B. (eds) *Stem Cell Transcriptional Networks, Methods in Molecular Biology*, 2117:207-215.
 - Humana, New York, NY

TEACHING EXPERIENCE

- present | 2023
- **生物技术前沿进展**
School of Laboratory Medicine and Biotechnology  Southern Medical University
 - Undergraduate level class
- present | 2022
- **生物信息学**
School of Basic Medical Sciences  Southern Medical University
 - Graduate level class
 - **毒理学原理与方法**
School of Public Health  Southern Medical University
 - Graduate level class
 - **生物信息学导论**
School of Basic Medical Sciences  Southern Medical University
 - Undergraduate level class
- present | 2021
- **医学研究与医学发展**
School of Basic Medical Sciences  Southern Medical University
 - Undergraduate level class
- present | 2019
- **基因组学**
School of Basic Medical Sciences  Southern Medical University
 - Undergraduate level class
 - **基础医学新进展讲座**
School of Basic Medical Sciences  Southern Medical University
 - Undergraduate level class
 - **生物信息学科研训练**
School of Basic Medical Sciences  Southern Medical University
 - Undergraduate level class
- 2021 | 2019

2019

- **BMB209: Workshops in Applied Bioinformatics**

Department of Biochemistry and Molecular Biology



University of Southern Denmark

- PhD level class, invited lecture

2012

- **功能蛋白质研究**

College of Life Science and Technology



- Graduate level class

|
2011



PUBLICATIONS

2023

- **The impact of pre-existing influenza antibodies and inflammatory status on the influenza vaccine responses in older adults**

Influenza and Other Respiratory Viruses. 2023, 17(7):e13172.

- M Kang, F Lin, Z Jiang, X Tan, X Lin, Z Liang, C Xiao, Y Xia, W Guan, Z Yang, G Yu, M Zanin, S Tang*, SS Wong*

- **MMINP: A computational framework of microbe-Metabolite interactions-based metabolic profiles predictor based on the O2-PLS algorithm**

Gut Microbes. 2023, 15(1):2223349.

- W Tang, H Zheng, S Xu, P Li, L Zhan, X Luo, Z Dai, Q Wang, G Yu*

- **MicrobiotaProcess: A comprehensive R package for deep mining microbiome**

The Innovation. 2023, 4(2):100388.

- S Xu, L Zhan, W Tang, Q Wang, Z Dai, L Zhou, T Feng, M Chen, T Wu, E Hu, G Yu*

- **Editorial: Computational and Systematic Analysis of Multi-omics Data for Drug Discovery and Development**

Frontiers in Medicine. 2023, 10:1146896.

- S Guo*, D Zhang, H Wang, Q An, G Yu, J Han, C Jiang, J Huang

2022

- **Ggtree: A serialized data object for visualization of a phylogenetic tree and annotation data**

iMeta, 2022, 1(4):e56.

- S Xu, L Li, X Luo, M Chen, W Tang, L Zhan, Z Dai, TT. Lam, Y Guan, G Yu*

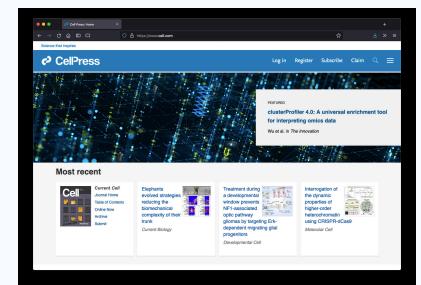
- **Exploring epigenomic datasets by ChIPseeker**

Current Protocols in Bioinformatics, 2022, 2(10):e585.

- Q Wang#, M Li#, T Wu, L Zhan, L Li, M Chen, W Xie, Z Xie, E Hu, S Xu, G Yu*

2021

- Characterization of toxin-antitoxin systems from public sequencing data: a case study in *Pseudomonas aeruginosa*
Frontiers in Microbiology. 2022, 13:951774.
 - Z Dai, T Wu, S Xu, L Zhou, W Tang, E Hu, L Zhan M Chen, G Yu*
- Stemness Analysis Uncovers That The Peroxisome Proliferator-Activated Receptor Signaling Pathway Can Mediate Fatty Acid Homeostasis In Sorafenib-Resistant Hepatocellular Carcinoma Cells
Frontiers in Oncology. 2022, 12:912694.
 - T Feng#, T Wu#, Y Zhang#, L Zhou#, S Liu, L Li, M Li, E Hu, Q Wang, X Fu, L Zhan, Z Xie, W Xie, X Huang*, X Shang*, G Yu*
- ggmsa: a visual exploration tool for multiple sequence alignment and associated data
Briefings in Bioinformatics. 2022, 23(4):bbac222.
 - L Zhou#, T Feng#, S Xu, F Gao, TT Lam, Q Wang, T Wu, H Huang, L Zhan, L Li, Y Guan, Z Dai*, G Yu*
- CBNplot: Bayesian network plots for enrichment analysis
Bioinformatics. 2022, 38(10):2959-2960.
 - N Sato, Y Tamada, G Yu, Y Okuno*
- Editorial: Biomedical Data Visualization: Methods and Applications
Frontiers in Genetics. 2022, 13:890775.
 - T Wu, CL Xiao, TT Lam, G Yu*
- Altered gut microbiota as an auxiliary diagnostic indicator for patients with fracture-related infection
Frontiers in Microbiology. 2022, 13:723791.
 - X Zhao#, W Tang#, H Wan#, Z Lan H Qin, Q Lin, Y Hu, G Yu*, N Jiang*, B Yu*
- Use ggbreak to effectively utilize plotting space to deal with large datasets and outliers
Frontiers in Genetics. 2021, 12:774846.
 - S Xu#, M Chen#, T Feng, L Zhan, L Zhou, G Yu*
- clusterProfiler 4.0: A universal enrichment tool for interpreting omics data
The Innovation. 2021, 2(3):100141.
 - T Wu#, E Hu#, S Xu, M Chen, P Guo, Z Dai, T Feng, L Zhou, W Tang, L Zhan, X Fu, S Liu, X Bo*, G Yu*



clusterProfiler (Wu et al. 2021),
the featured article in 2021-08-24's website banner of Cell Press

- **ggtreeExtra: Compact visualization of richly annotated phylogenetic data**
Molecular Biology and Evolution. 2021, 38(9):4039-4042.
 - S Xu, Z Dai, P Guo, X Fu, S Liu, L Zhou, W Tang, T Feng, M Chen, L Zhan, T Wu, E Hu, Y Jiang*, X Bo*, G Yu*
- **ggVennDiagram: An intuitive, easy-to-use, and highly customizable R package to generate Venn diagram**
Frontiers in Genetics. 2021, 12:706907.
 - CH Gao, G Yu, P Cai*
- **IOBR: Multi-Omics Immuno-Oncology Biological Research to Decode Tumor Microenvironment and Signatures**
Frontiers in Immunology. 2021, 12:687975.
 - D Zeng#, Z Ye#, R Shen, G Yu, J Wu, Y Xiong, R Zhou, W Qiu, N Huang, L Sun, X Li, J Bin, Y Liao, M Shi, W Liao*
- **nCov2019: an R package for studying the COVID-19 coronavirus pandemic**
PeerJ. 2021, 9:e11421.
 - T Wu, E Hu, X Ge*, G Yu**
- **TreeSummarizedExperiment: a S4 class for data with hierarchical structure**
F1000Research. 2021, 9:1246.
 - R Huang, C Soneson, FGM Ernst, KC Rue-Albrecht, G Yu, SC Hicks, MD Robinson*
- **Identification of prognostic Stromal-Immune Score-Based Genes in Hepatocellular Carcinoma microenvironment**
Frontiers in Genetics. 2021, 12: 625236.
 - S Liu, G Yu*, L Liu*, X Zou, L Zhou, E Hu, Y Song
- **Gut microbiota and metabolite alterations associated with reduced bone mineral density or bone metabolic indexes in postmenopausal osteoporosis**
Aging (Albany NY). 2020, 12(9):8583-8604.
 - J He#, S Xu#, B Zhang, C Xiao, Z Chen, F Si, J Fu, X Lin, G Zheng*, G Yu*, J Chen*
- **Using ggtree to Visualize Data on Tree-Like Structure**
Current Protocols in Bioinformatics, 69(1):e96
 - G Yu*

2020

- **treeio: an R package for phylogenetic tree input and output with richly annotated and associated data**
Molecular Biology and Evolution. 2020, 37(2):599-603.
 · LG Wang, TTY Lam, S Xu, Z Dai, L Zhou, T Feng, P Guo, CW Dunn, BR Jones, T Bradley, H Zhu, Y Guan, Y Jiang, **G Yu***
 · Impact Factor = 16.24
 · 🏆 ESI Highly Cited Paper
 - **RIdogram: drawing SVG graphics to visualize and map genome-wide data on the idiograms**
PeerJ Computer Science. 2020, 6:e251.
 · Z Hao, D Lv, Y Ge, J Shi, D Weijers, **G Yu***, J Chen*
 · 🏆 ESI Highly Cited Paper
- 2018
- **Two methods for mapping and visualizing associated data on phylogeny using ggtree**
Molecular Biology and Evolution. 2018, 35(12):3041-3043.
 · G Yu*, TTY Lam, H Zhu, Y Guan*
 · Impact Factor = 14.797
 - **Using meshes for MeSH term enrichment and semantic analyses**
Bioinformatics. 2018, 34(21):3766–3767.
 · G Yu*
- 2017
- **ggtree: an R package for visualization and annotation of phylogenetic trees with their covariates and other associated data**
Methods in Ecology and Evolution. 2017, 8(1):28-36
 · G Yu, DK Smith, H Zhu, Y Guan, TTY Lam*
 · 🏆 ESI Highly Cited Paper
- 2016
- **ReactomePA: an R/Bioconductor package for reactome pathway analysis and visualization**
Molecular BioSystems. 2016, 12(2):477-479
 · G Yu, QY He*
 · 🏆 ESI Highly Cited Paper
 - **Integrated Translatomics with Proteomics to Identify Novel Iron-Transporting Proteins in *Streptococcus pneumoniae***
Frontiers in Microbiology. 2016, 7:78
 · XY Yang, K He, G Du, X Wu, **G Yu**, Y Pan, G Zhang*, X Sun*, QY He*
 - **Genetic characterization of highly pathogenic H5 influenza viruses from poultry in Taiwan, 2015**
Infection, Genetics and Evolution. 2016, 38:96-100
 · PY Huang, CCD Lee, CH Yip, CL Cheung, **G Yu**, TTY Lam, DK Smith, H Zhu*, Y Guan*



The *ggtree* (Yu et al. 2017) paper was selected as a feature article to celebrate the 10th anniversary of the launch of *Methods in Ecology and Evolution*.

2015

- **ChIPseeker: an R/Bioconductor package for ChIP peak annotation, comparision and visualization**
Bioinformatics. 2015, 31(14):2382-2383
· G Yu*, LG Wang, QY He*
· 🏆 ESI Highly Cited Paper
- **DOSE: an R/Bioconductor package for Disease Ontology Semantic and Enrichment analysis**
Bioinformatics. 2015, 31(4):608-609
· G Yu*, LG Wang, GR Yan, QY He*
· 🏆 ESI Highly Cited Paper
- **ACK1 Promotes Gastric Cancer Epithelial-Mesenchymal Transition and Metastasis through AKT-POU2F1-ECD Signaling**
Journal of Pathology. 2015, 236(2):175-185
· SH Xu, JZ Huang, ML Xu, G Yu, XF Yin, D Chen*, GR Yan*
- **Proteomic analysis on the copper resistance of *Streptococcus pneumonia***
Metalomics. 2015, 7(3):448-454
· Z Guo, J Han, XY Yang, K Cao, K He, G Du, G Zeng, L Zhang, G Yu, Z Sun, QY He*, X Sun*
- **Proteomic analysis on the antibacterial activity of a Ru(II) complex against *Strepococcus pneumonia***
Journal of Proteomics. 2015, 115:107-116
· XY Yang, L Zhang, J Liu, N Li, G Yu, K Cao, J Han, G Zeng, Y Pan, X Sun*, QY He*

2014

- **Proteomic analysis of putative heme-binding proteins in *Streptococcus pyogenes***
Metalomics. 2014, 6(8):1451-1459
· N Wang#, J Zhang#, L Zhang, XY Yang, N Li, G Yu, J Han, K Cao, Z Guo, X Sun*, QY He*

2013

- **Putative cobalt- and nickel-binding proteins and motifs in *Streptococcus pneumonia***
Metalomics. 2013, 5(7):928-935
· X Sun#, G Yu#, Q Xu, N Li, C Xiao, X Yin, K Cao, J Han, QY He*
- **A novel andrographolide derivative AL-1 exerts its cytotoxicity on K562 cells through a ROS-dependent mechanism**
Proteomics, 2013, 13(1):169-178
· YY Zhu#, G Yu#, Y Zhang, Z Xu, YQ Huang, GR Yan*, QY He*

- **A DNA-Based Semantic Fusion Model for Remote Sensing Data**
PLoS One. 2013, 8(10):e77090
 · H Sun*, J Weng, G Yu, RH Massawe
- **Quantitative Proteomics Characterization on the Anti-tumor Effects of Isodexyelephantopin against Nasopharyngeal Carcinoma**
Proteomics. 2013, 13(21):3222-3232
 · GR Yan#, Z Tan#, Y Wang, ML Xu, G Yu, Y Li*, QY He*
- **Design, SAR, angiogenic activities evaluation and pro-angiogenic mechanism of new marine cyclopeptide analogs**
Current Medicinal Chemistry. 2013, 20(9):1183-1194
 · J Li, X Lu, Q Wu, G Yu, Z Xu, L Qiu, Z Pei, Y Lin, J Pang*
- **Proteomic investigation of the interactome of FMNL1 in hematopoietic cells unveils a role in calcium-dependent membrane plasticity**
Journal of Proteomics. 2013, 78:72-82
 · Y Han, G Yu, H Sarioglu, A Caballero-Martinez, F Schlott, M Ueffing, H Haase, C Peschel, AM Krackhardt*
- 2012
- **LXtoo: an integrated live Linux distribution for the bioinformatics community**
BMC Research Notes. 2012, 5(1):360
 · G Yu#, LG Wang#, XH Meng, QY He*
- **clusterProfiler: an R package for comparing biological themes among gene clusters**
OMICS: A Journal of Integrative Biology. 2012, 16(5):284-287
 · G Yu, LG Wang, Y Han, QY He*
 · 🏆 ESI Highly Cited Paper
- **Cellular MicroRNA let-7c Inhibits M1 Protein Expression of the H1N1 Influenza A Virus in Infected Human Lung Epithelial Cells**
Journal of Cellular and Molecular Medicine. 2012, 16(10):2539-2546
 · Y Ma#, J Yang#, X Fan#, H Zhao, W Hu, Z Li, G Yu, X Ding, J Wang, X Bo, X Zheng, Z Zhou*, S Wang*
- **Genistein-induced mitotic arrest of gastric cancer cells by downregulating KIF20A, a proteomics study**
Proteomics. 2012, 12(14):2391-2399
 · GR Yan#, FY Zhou#, BL Dang, Y Zhang, G Yu, X Liu, QY He*
- 2011
- **Functional similarity analysis of human virus-encoded miRNAs**
Journal of Clinical Bioinformatics. 2011, 1(1):15
 · G Yu, QY He*



clusterProfiler (Yu et al. 2012) 被中国科学技术信息研究所列为“2011-2021我国高被引论文中被引次数最高的10篇国际论文”（2021年中国科技论文统计报告）

- **A new method for measuring functional similarity of microRNAs**
Journal of Integrated OMICS. 2011, 1(1):49-54
· G Yu[#], CL Xiao[#], X Bo, CH Lu, Y Qin, S Zhan, QY He^{*}
 - **Phosphoproteome profile of human lung cancer cell line A549**
Molecular BioSystems. 2011, 7(2):472-479
· G Yu[#], CL Xiao[#], CH Lu[#], HT Jia, F Ge, W Wang, XF Yin, HL Jia, JX He^{*}, QY He^{*}
 - **Proteomic Analysis of Membrane Proteins from *Streptococcus pneumoniae* with Multiple Separation Methods plus High Accuracy Mass Spectrometry**
OMICS: A Journal of Integrative Biology. 2011, 15(10):683-694
· X Sun[#], XY Yang[#], XF Yin, G Yu, CL Xiao, X He, QY He^{*}
- 2010
- **GOSemSim: an R package for measuring semantic similarity among GO terms and gene products**
Bioinformatics. 2010, 26(7):976-978
· G Yu[#], F Li[#], Y Qin, X Bo^{*}, Y Wu, S Wang^{*}
- 2009
- **结合基因组分析预测炎症相关miRNA及其靶标**
军事医学科学院院刊. 2009, 33(3):245-247
· 余光创, 王超, 许尹, 伯晓晨, 王升启^{*}, 秦宜德^{*}
- 2007
- **依赖于5'端非编码区高级结构的真核生物mRNA翻译调控**
中国生物化学与分子生物学报. 2007, 23(11):881-887
· 余光创, 秦宜德, 伯晓晨, 王升启^{*}

CONFERENCE PROCEEDINGS

- 2023
- **浅谈南方医科大学生物信息学一流本科专业学科建设情况**
南海生信论坛, Nov 2023  Haikou, CN
 - **微生物组学数据管理与挖掘软件包**
Innovation Webinar, Jun 2023  Virtual Conference
 - **系统发育数据集成与可视化**
2023中国肠道大会, May 2023  Beijing, CN
 - **整合先验知识的单细胞分析策略**
首届TICSSO国际单细胞及空间组学大会, Apr 2023  Guangzhou, CN

- 2021
 - **clusterProfiler 4.0: A universal enrichment tool for interpreting omics data**
 The 7th National Conference on Computational Biology and Bioinformatics
 Yantai, CN
- 2020
 - **Data integration and visualization of phylogenetic trees**
 BioC Asia, Oct 2020
 Virtual Conference
- 2019
 - **R语言在生物信息学数据可视化中的应用**
 第八届南方医院博士论坛 - 研而有信之修“生”养“信”, Oct 2019
 Southern Medical University
 - **Data integration and visualization of phylogenetic trees**
 Managing Zoonotic Infections in the era of One Health, Oct 2019
 Guangzhou Medical University
 - **R包开发十条建议**
 第一届生信人才发展论坛
 Zhuhai, CN
 - **Two methods for mapping and visualizing associated data on phylogeny using ggtree**
 第一届南方医科大学基础医学学术年会, Jan 2019
 Southern Medical University
- 2017
 - **ggtree for tree visualization & annotation**
 Phylogenetic tree visualization workshop/hackathon, May 2017
 The Field Museum of Natural History
 - **Computational Methods in Ecology and Evolution**
 The Second International Workshop on Environmental Microbiomes, Apr 2017
 Sun Yat-sen University
- 2016
 - **R语言与生物信息学**
 潮博沙龙
 Guangzhou, CN
 - **ggtree for visualization and annotation of phylogenetic trees**
 The 9th China-R Conference, May 2016
 Renmin University of China

PROFESSIONAL AFFILIATIONS

- present | 2022
- **iMeta**
 Associate Editor
 - **The Innovation**
 Youth Editor

- **南方医科大学基础医学院第二届学术分委员会**
委员
present | 2021
- **中国生物工程学会**
计算生物学与生物信息学专业委员会委员
present | 2020
- **广东省精准医学应用学会**
微生态医学分会常务委员
📍 Guangdong, CN
- **广东省医学会**
医学遗传学分会青年委员会副主任委员
📍 Guangdong, CN
- **中国计算机学会**
会员
present | 2019
- **香港大学校友会**
会员
present | 2017
- **广东潮博智库**
专家
📍 Guangdong, CN
present | 2014
- **广东省生物信息学会**
理事
2028 | 2023
- **International Society for Influenza and other Respiratory Virus Disease**
Member
2016
- **International Network for Data Analysis**
Steering Committee
📍 Institut Pasteur
2015