

GUANGCHUANG YU

Professor of Bioinformatics at [Southern Medical University](#). I have developed more than 20 R packages, including [clusterProfiler](#), [ChIPseeker](#), [treeio](#) and [ggtree](#), to help biologists to explore and understand their data.

I am broadly interested in bioinformatics, metagenomics, molecular evolution, data integration and visualization.



RESEARCH EXPERIENCE

present
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2018

- **Professor**
School of Basic Medical Sciences Southern Medical University
• 2019-present, Associate director, Department of Bioinformatics

2018
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2017

- **Post-doctoral Fellow**
State Key Laboratory of Infectious Diseases
 The University of Hong Kong

2013
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2009

- **Bioinformatician**
Key Laboratory of Functional Protein Research of Guangdong
Higher Education Institutes
 Jinan University



EDUCATION

2017
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2013

- **PhD., Bioinformatics**
The University of Hong Kong Hong Kong, CN
• Thesis: Big-data computational methods for studying molecular evolution: from accurate genome assembly to phylogenetic analysis and data integration

2009
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2006

- **M.S., Biochemistry and Molecular Biology**
Anhui Medical University Hefei, CN
• Thesis: miRNA靶基因计算分析新方法及其应用研究

2005
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2001

- **B.S., Biotechnology**
South China Agricultural University Guangzhou, CN

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



CONTACT

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- 🌐 github.com/GuangchuangYu
- 🔗 guangchuangyu.github.io
- 🗣️ [biobabble](#)
- 📞 (86) 13826432521

SELECTED R PACKAGES

NGS

- ChIPseeker

Ontology

- clusterProfiler
- DOSE
- enrichplot
- GOSemSim

Phylogeny

- tidytree
- treeio
- ggtree

Visualization

- ggimage
- ggplotify
- seqcombo

Last updated on 2020-11-23.

2015 ● **Train the Trainers**
Institut Pasteur Paris, FR

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

TEACHING EXPERIENCE

2020
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2019 ● **生物信息学科研训练**
School of Basic Medical Sciences Southern Medical University
• Undergraduate level class

● **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

2019 ● **BMB209: Workshops in Applied Bioinformatics**
Department of Biochemistry and Molecular Biology
University of Southern Denmark
• PhD level class, invited lecture

2012
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2011 ● **功能蛋白质研究**
College of Life Science and Technology Jinan University
• Graduate level class

GRANTS

2020
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2018 ● **南方医科大学第三层次人才引进科研项目 (G618289088)**
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 ● **hnRNPK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

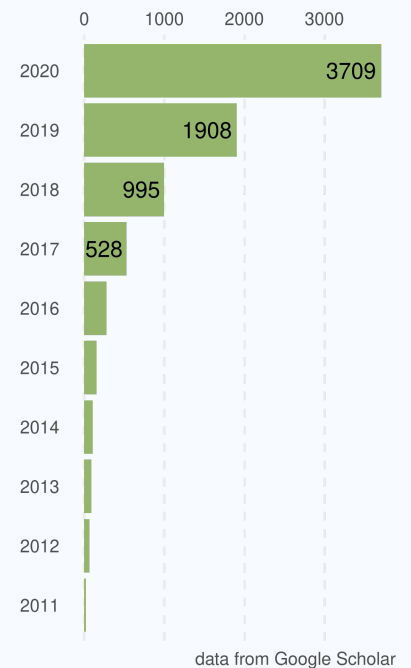
BOOKS

- 2020 ● **Gene Ontology Semantic Similarity Analysis Using GOSemSim**
Methods in Molecular Biology, 2117:207-215.
• G Yu
• In: Kidder B. (eds) *Stem Cell Transcriptional Networks*
• Humana, New York, NY
- 2012 ● **生物信息学II**
《功能蛋白质研究》. 385-425.
• 余光创
• 何庆瑜 (主编), 科学出版社
• “十二五”国家重点图书出版规划项目

PUBLICATIONS

- 2020 ● **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^{*}
- **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 = 14.797
- **Rideogram: 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^{*}
- 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

- Citation = 7932
- H-index = 18
- I10-index = 29



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*.

- **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*
- 2015 ● **ChIPseeker: an R/Bioconductor package for ChIP peak annotation, comparison 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***
Metallomics. 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 *Streptococcus 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***
Metallomics. 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***
Metallomics. 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 Isodexyephantopin 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^{*}
 - **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^{*}
• 🏆 ESI Highly Cited Paper

- 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

- 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