

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**
|
2018
Professor
School of Basic Medical Sciences Southern Medical University
• 2019-present, Associate director, Department of Bioinformatics
- 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 Hong Kong, CN
• Thesis: Big-data computational methods for studying molecular evolution: from accurate genome assembly to phylogenetic analysis and data integration
- 2009**
|
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**
|
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



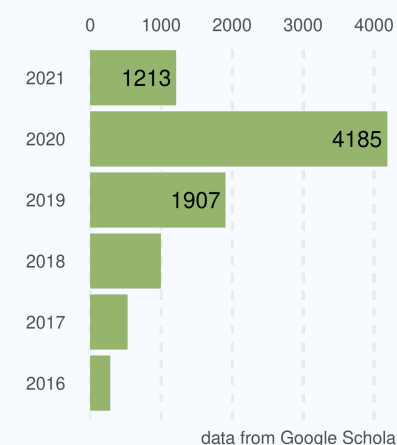
CONTACT

- guangchuangyu@gmail.com
- [guangchuangyu](#)
- github.com/GuangchuangYu
- <https://yulab-smu.top/>
- YuLabSMU (公众号)
- (86) 13826432521

Citation = 9623

H-index = 21

I10-index = 30



Last updated on 2021-03-04.


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

2017
|
2013 ● **Postgraduate studentships**
The University of Hong Kong

2012 ● **Best paper of the year 2010**
Journal of Integrated OMICS



GRANTS

2022
|
2020 ● **大样本多组学数据联合分析系统研究与构建 (K921280198)**
主持, CNY ¥600,000, 中央军委科学技术委员会

2020
|
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



TEACHING EXPERIENCE

2021

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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


2020

|
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

2019

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

2012

|
2011

- **功能蛋白质研究**
College of Life Science and Technology  Jinan University
 - Graduate level class



PUBLICATIONS

2021

- **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



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](#).

- 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
 - **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 pneumoniae***
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 pneumoniae***
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***
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 Isodexylephantopin 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^{*}

- 2011

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^{*}
- 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



PROFESSIONAL AFFILIATIONS

- 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
- present | 2019 ● **中国计算机学会**
会员
- present | 2017 ● **香港大学校友会**
会员
- present | 2014 ● **广东潮博智库**
专家
📍 Guangdong, CN
- 2016 ● **International Society for Influenza and other Respiratory Virus Disease**
Member
- 2015 ● **International Network for Data Analysis**
Steering Committee
📍 Institut Pasteur