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

· 2021-present, Director, Department of Bioinformatics
· 2019-2021, 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., Bioinformaitcs
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
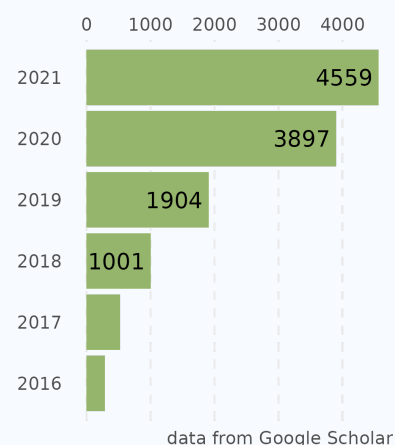
南方医科大学高层次人才"不忘初心 牢记使命"学习教育
延安干部培训学院   📍 Yan'an, CN

CONTACT

✉ gcyu1@smu.edu.cn
🐦 guangchuangyu
⌨ github.com/YuLab-SMU
🔗 https://yulab-smu.top/
💬 YuLabSMU (公众号)
📞 (86) 13826432521

Citation = 12595
H-index = 21
I10-index = 31

	0	1000	2000	3000	4000
2021					4559
2020				3897	
2019		1904			
2018	1001				
2017					
2016					

data from Google Scholar

Last updated on 2021-08-26.

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

2021 ● **2020全球前2%顶尖科学家**
美国斯坦福大学

● **2020年中国高被引学者**
Elsevier

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, 国防科技创新特区163计划

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

Scopus

2020 Highly Cited Chinese Researchers
爱思唯尔2020中国高被引学者
Awarded to:
余光创
南方医科大学
For exceptional research performance in the field of
生物医学工程
SHANGHAI RANKING

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 ● 基础医学研究与医学发展

School of Basic Medical Sciences ♀ Southern Medical University

· Undergraduate level class

**2021
|
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
|
2011** ● 功能蛋白质研究

College of Life Science and Technology ♀ Jinan University
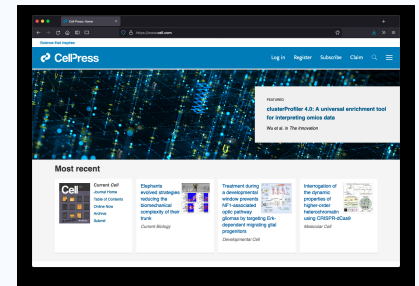
· Graduate level class

PUBLICATIONS

2021

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[*]

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**[*]

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**[*]

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

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[*]

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

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 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*

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*

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 *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*

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*

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 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[*]

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

2021

clusterProfiler 4.0: A universal enrichment tool for interpreting omics data
The 7th National Conference on Computational Biology and Bioinformatics

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 AFFLIATIONS

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

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