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 **Professor** present Southern Medical University School of Basic Medical Sciences 2018 · 2019-present, Associate director, Department of Bioinformatics Post-doctoral Fellow 2018 State Key Laboratory of Infectious Diseases 2017 The University of Hong Kong Bioinformatician 2013 Key Laboratory of Functional Protein Research of Guangdong 2009 **Higher Education Institutes ♀**Jinan University **EDUCATION** PhD., Bioinformaitcs 2017 O Hong Kong, CN The University of Hong Kong 2013 · Thesis: Big-data computational methods for studying molecular evolution: from accurate genome assembly to phylogenetic analysis and data integration M.S., Biochemistry and Molecular Biology 2009 • Hefei, CN Anhui Medical University 2006 ·Thesis: miRNA靶基因计算分析新方法及其应用研究 **B.S.**, Biotechnology 2005 **Q** Guangzhou, CN South China Agricultural University 2001 Antigenic cartography and antibody landscapes course 2019 **Q** Cambridge, UK University of Cambridge 南方医科大学高层次人才"不忘初心 牢记使命"学习教育 2018 Yan'an. CN 延安干部培训学院



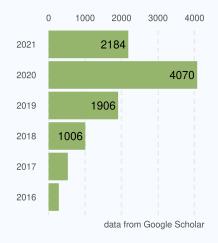
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2020 Gene Ontology Semantic Similarity Analysis Using GOSemSim

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 • 生物信息学科研训练

School of Basic Medical Sciences

Southern Medical University

· Undergraduate level class

2020 • 基因组学

2019

2019

2019

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

• BMB209: Workshops in Applied Bioinformatics

Department of Biochemistry and Molecular Biology

Q University of Southern Denmark

· PhD level class, invited lecture

2012 • 功能蛋白质研究

College of Life Science and Technology

♥Jinan University

· Graduate level class

PUBLICATIONS

• 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*



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.

2021

2011

Identification of prognostic Stromal-Immune Score-Based Genes in Hepatocellular Carcinoma microenvironment

Frontiers in Genetics. 2021, 12: 625236.

 \cdot 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^{*}
- 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, comparision and visualization

Bioinformatics. 2015, 31(14):2382-2383

- · G Yu*, LG Wang, QY He*
- ·**Y** 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*
- TESI 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

- \cdot 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

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 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

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• 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
 - \cdot 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*
- 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
- ⊵ 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*
- ◆ 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*



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