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., 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

✉ guangchuangyu@gmail.com
🐦 guangchuangyu
⭘ 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 2020-11-05.

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
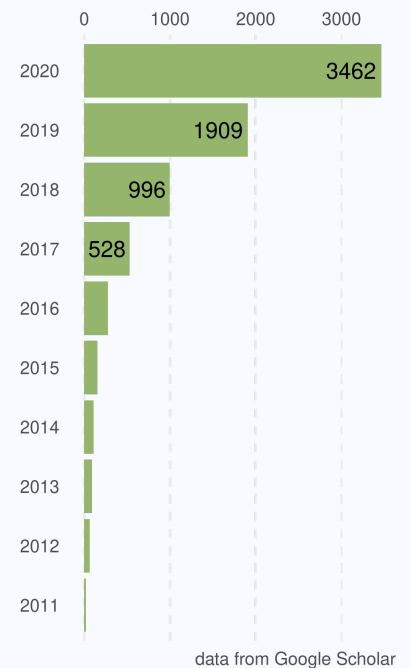**Hela细胞周期动态蛋白质组学分析 (21611303)**
主持, CNY ¥20,000, 中央高校基本科研业务费专项资金

📑 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 = 7685
· H-index = 18
· I10-index = 29

	0	1000	2000	3000
2020	3462			
2019	1909			
2018	996			
2017	528			
2016				
2015				
2014				
2013				
2012				
2011				

data from Google Scholar

Our article ggtree: an R package for visualization and annotation of phylogenetic trees with their covariates and other associated data was selected to highlight 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, 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[*]

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
· 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