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

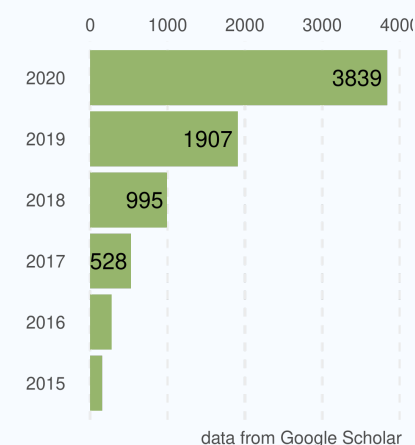### 南方医科大学高层次人才"不忘初心 牢记使命"学习教育
延安干部培训学院 📍 Yan'an, CN

CONTACT

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🐦 guangchuangyu
 github.com/GuangchuangYu
🔗 guangchuangyu.github.io
💬 biobabble
📞 (86) 13826432521

Citation = 8060
H-index = 18
I10-index = 29

Year	Citations
2020	3839
2019	1907
2018	995
2017	528
2016	
2015	

data from Google Scholar

Last updated on 2020-12-02.

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

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
|
2019

生物信息学科研训练

School of Basic Medical Sciences ♀ Southern Medical University

· Undergraduate level class

2020
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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

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[*]

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*.

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[*]
· 🏆 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

🏠 PROFESSIONAL AFFLIATIONS

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**
  会员
  📍 Guangdong, CN

2016
- **International Society for Influenza and other Respiratory Virus Disease**
  Member

2015
- **International Network for Data Analysis**
  Steering Committee
  📍 Institut Pasteur