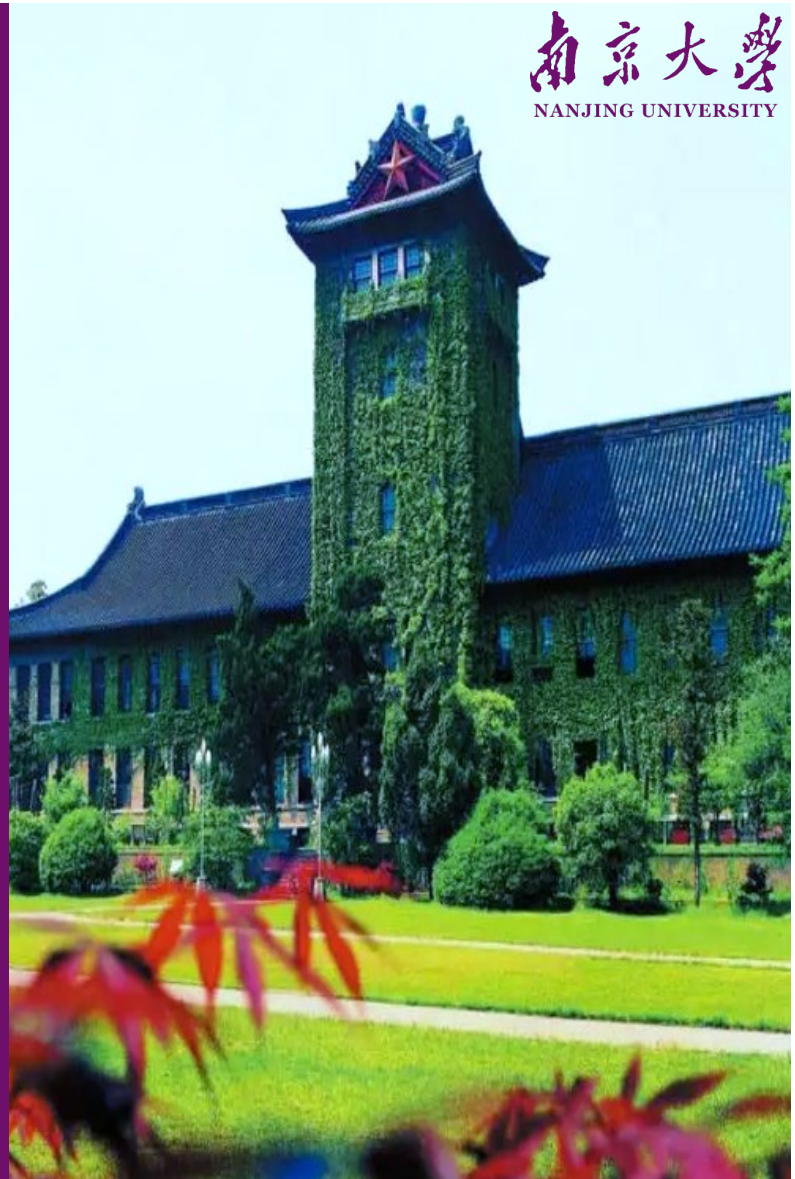
IMB 现代生物研究院
Institute of Modern Biology



南京大学
Nanjing University

https://imb.nju.edu.cn

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学校介绍 南京大学

NANJING UNIVERSITY

学校介绍　　南京大学
NANJING UNIVERSITY

南京大学是一所历史悠久、声誉卓著的百年名校，位于六朝古都南京。其前身是创建于1902年的三江师范学堂，此后历经两江师范学堂、南京高等师范学校、国立东南大学、国立第四中山大学、国立中央大学、国立南京大学等历史变迁，于1950年更名为南京大学。1996年，南京大学被确定为国家“211工程”重点支持的大学；1999年，南京大学进入国家“985工程”首批重点建设的高水平大学行列；2017年，南京大学入选A类世界一流大学建设高校名单。现有16个学科入选世界一流学科建设名单，拥有仙林、鼓楼、浦口、苏州四个校区，34个院系，本科生约13000人、硕士研究生约17000人、博士研究生~约8300人、留学生约1100人，现有一级学科国家重点学科8个，二级学科国家重点学科13个，“双一流”建设学科16个。新的百年，南京大学力争早日成为世界一流大学！



IMB　　现代生物院
Institute of Modern Biology



Nanjing University just celebrated its 120th anniversary and has an exceptional reputation in education and research. Locating in Nanjing the ancient capital of six dynasties in Chinese history, Nanjing University was designated as one of the key universities of the Nation’s “211 Program” in 1996, one of the first elite universities of the Nation’s “985 Program” in 1999, and one of the “group A” universities in China aiming to be world-class universities in 2017. The curriculums of sixteen different disciplines offered by Nanjing University were selected as the world-class ones. Currently, Nanjing University has Xianlin, Gulou, Pukou, and Suzhou campuses, thirty-four academic departments, ~13,000 undergraduates, ~25,000 M.S./Ph.D. students and ~1,100 international students. In the new century, Nanjing University is striving to become an internationally renowned university.

学院介绍　现代生物研究院

INSTITUTE OF MODERN BIOLOGY



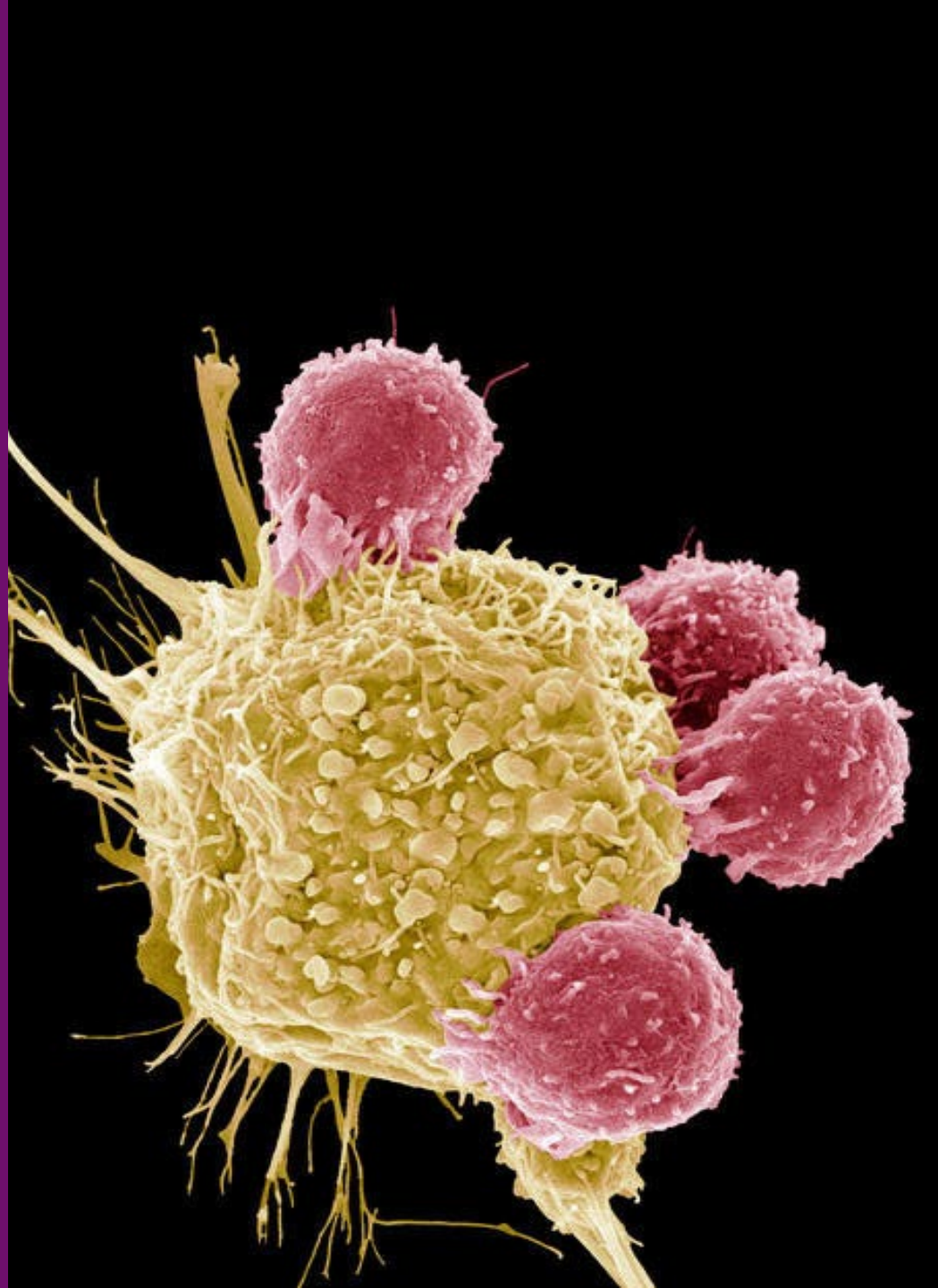
南京大学现代生物研究院（简称“现代生物院”），成立于2020年7月，由林安宁教授任创院院长。现代生物院追求学术卓越，致力于原创和严谨的基础和转化研究，营造学者型的教育和研究环境，鼓励和支持开拓性和系统性的学术探讨。现代生物院实行院长负责制，拥有相对独立的人事和财务自主权，实行与国际一流大学相同的准/长聘教授系列（Tenure-track/Tenured Professor）和以独立学术带头人/特聘研究员(Principal Investigator, PI) 组建实验室的科研体系，目前已有林安宁和帅克2位长聘终身教授，曾分别在美国芝加哥大学和加州大学洛杉矶分校任终身正教授，另已有21位助理教授/独立学术带头人，均拥有出色海外博士后经历并取得国际一流水平的创新研究成果。现代生物院的研究方向包括（但不限于）生物人工智能和计算机模拟、细胞信号转导、干细胞、基因编辑、肿瘤免疫与代谢、感染性和神经退行性疾病机理、精准医学和创新药物开发等，实行与国际一流大学接轨的硕/博研究生教育和培养制度，包括实验室轮转、导师指导小组和英文教学，拥有国际一流标准的实验空间，国际一流水平的分子细胞生物学、显微成像、流式细胞分析/分选、公共洗消等平台和SPF级动物房，为科研人员提供提供国际一流水平的实验技术保障。现代生物院的目标是造就一批在生物医学一些重大研究方向 / 领域里国际公认的学术权威，成为一个国际一流生物医学研究中心，促进人民健康幸福，并服务于国家科技兴国的战略。

The Institute of Modern Biology (IMB), Nanjing University, was established in July 2020. At IMB, we pursue academic excellence and commit to the original and rigorous scientific inquiry by providing a scholarly research environment for our faculty, students, and trainees to conduct the creative and innovative biomedical investigations in diverse but interacting research areas, including but not limited to machine learning in biology, computational modeling, tumor immunology and metabolism, inflammatory and neurodegenerative diseases, genome editing, precision medicine, and innovative drug discovery. IMB is determined to provide our graduate students with the best education and training, including an international standard curriculum taught in English, laboratory rotation, and dissertation committee. The research conducted at IMB is supported by the newly established state-of-art core facilities including molecular and cell biology core, imaging core, flow cytometry core, and laboratory animal core. IMB aims to have a group of internationally renowned investigators and become an international powerhouse in biomedical research.



研究集群　　实验室

RESEARCH GROUPS AND LABORATORIES





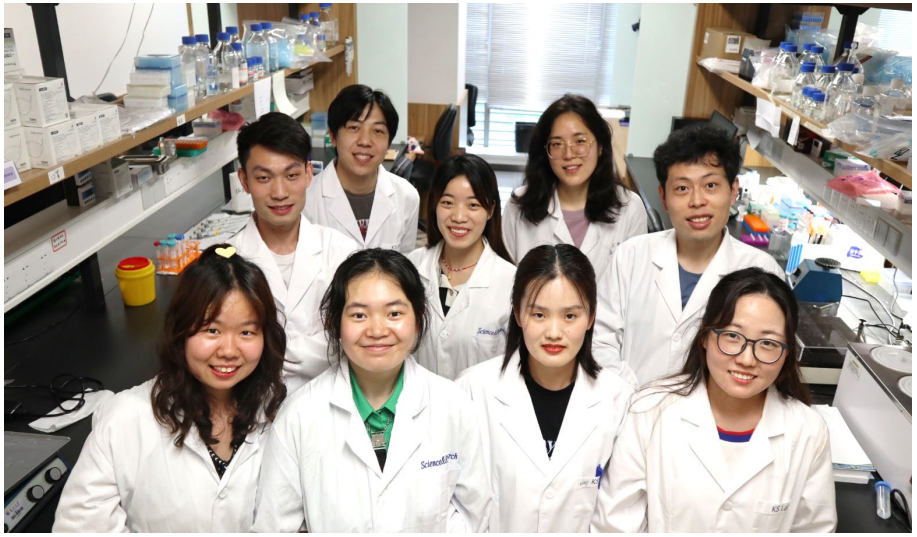
根据现代生物院的战略发展规划，具有相同研究兴趣的实验室已组成若干研究集群，通过多学科间的通力合作，挑战生物医学领域中关键问题，致力于原创性科学发现，为人类幸福安康做出影响深远的贡献。

To tackle the key challenges in the biomedical field, the independent laboratories at IMB have formed research interacting groups. Through collaborations, we wish to make original and groundbreaking discoveries in science and seminal contributions to humanity.

现代生物院实行与国际一流大学相同的以独立学术带头人/特聘研究员 (Principal Investigator, PI) 组建实验室的科研体系。

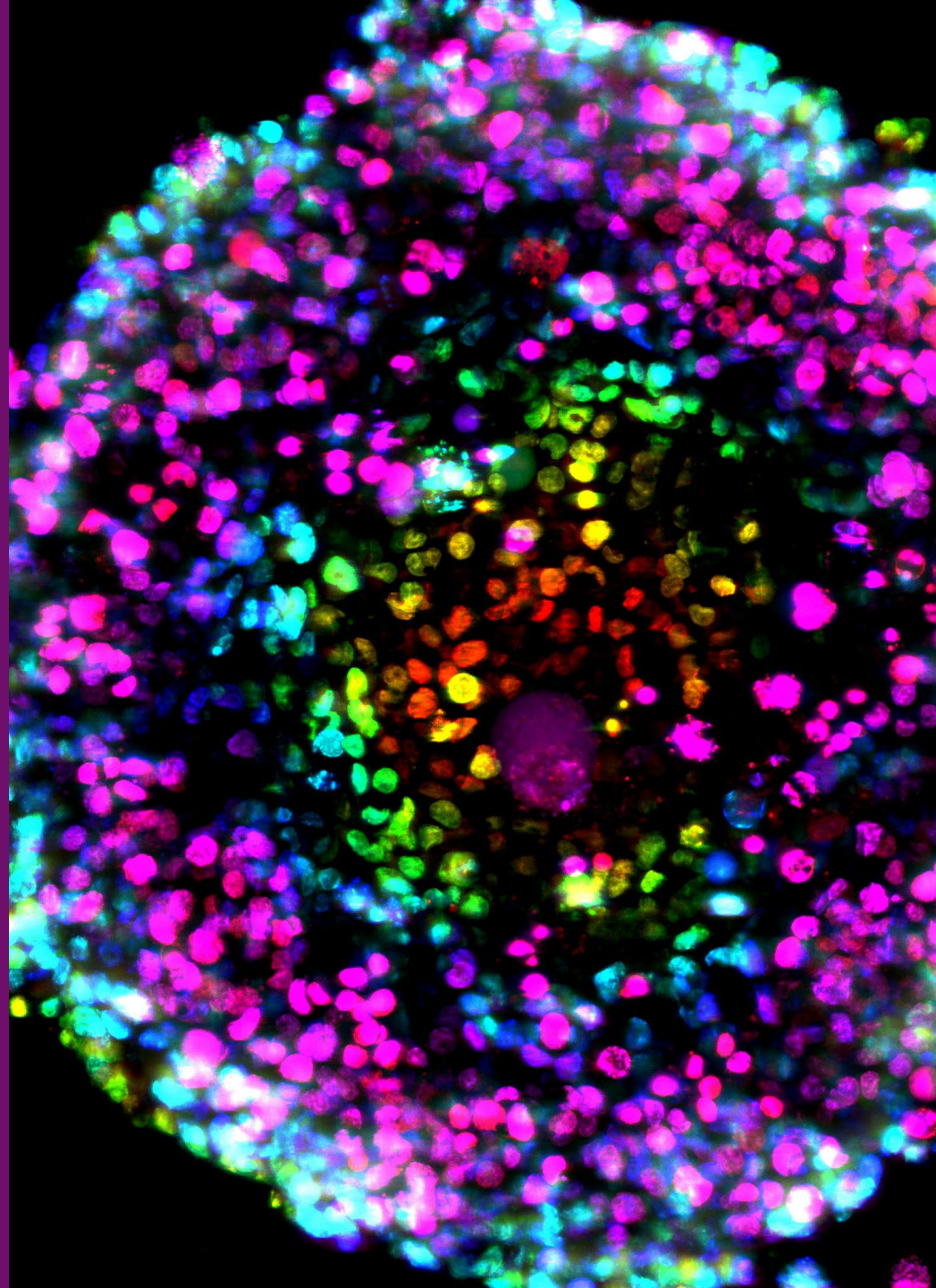
At IMB, every tenure-track or tenured professor is also a principal investigator (PI) and acts as the head of an individual laboratory. The PI directs all research and education activities in his/her independent laboratory.





实验共享平台

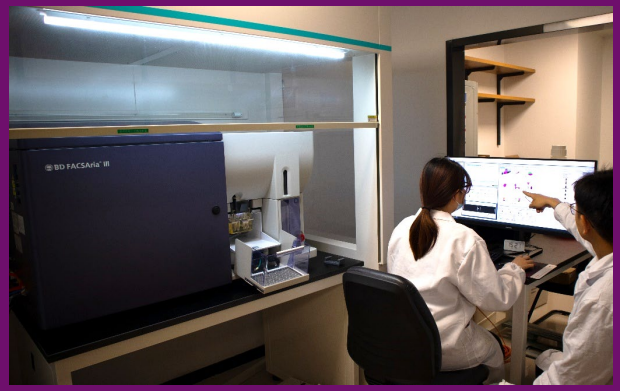
RESEARCH CORE FACILITIES



实验共享平台
RESEARCH CORE FACILITIES

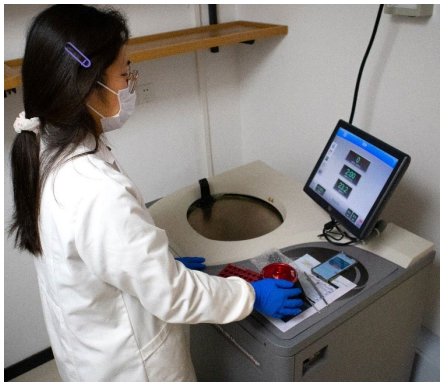
根据学院整体发展规划以及各独立课题组的研究需要，现代生物院实验共享平台已经设立了分子生物学平台、细胞生物学平台、显微成像、流式细胞分析/分选平台和公共洗消平台等，并可使用江北新区仪器共享平台。目前已拥有包括超高分辨率共聚焦显微镜、流式细胞分析仪、流式细胞分选仪、超速离心机、红外双色成像仪、定量PCR仪，核酸片段分析仪等大型科仪器设备，致力于为研究人员开展原创性生物医药研究提供国际一流的科研技术支撑体系。

The core facilities of IMB consist of Molecular and Cellular Biology core and Autoclave room, providing state-of-art technical support for our faculty, students, and trainees to conduct the original and rigorous inquiry.

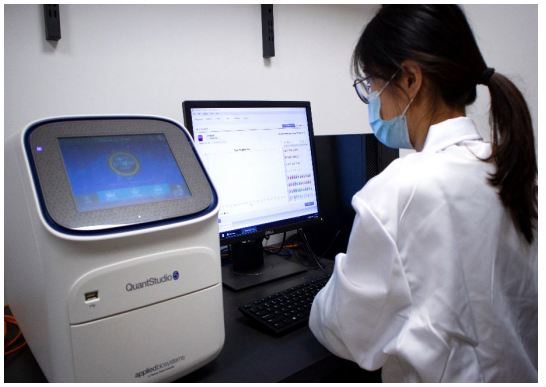




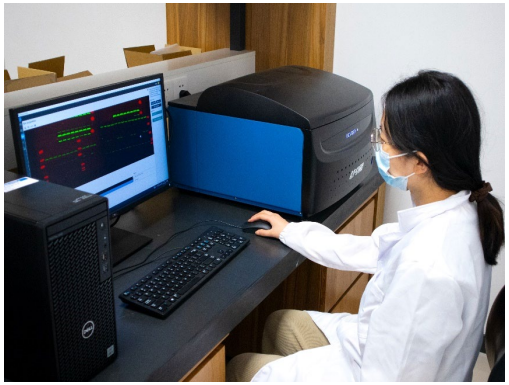
流式细胞分选仪 Flow cytometry Sorter (BD FACSAria III) (左)
流式细胞分析仪 Flow cytometry analyzers (BD LSRFortessa)（右）



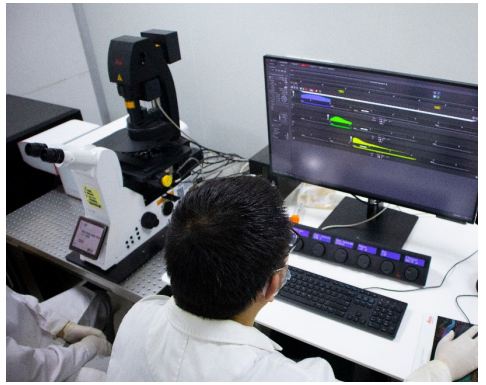
超速冷冻离心机 Ultracentrifuge
(Beckman OptimaXPN-100)



实时荧光定量PCR仪
Real-time PCR System
(Applied Biosystems QuantStudio 5)



红外双色影像分析仪
Infrared Two-color Image Analyzer
(LI-COR Odyssey DLx)

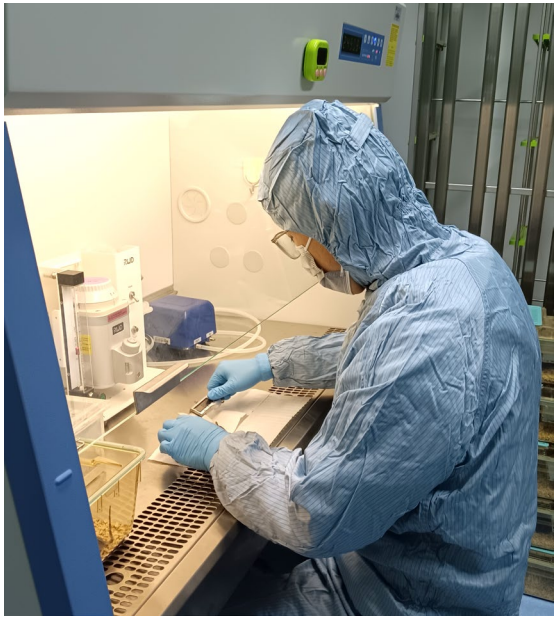


超高分辨率共聚焦显微镜
Super-resolution Confocal Microscope
(Leica Stellaris Sted)

实验动物中心
LABORATORY ANIMAL CORE FACILITY

实验动物中心根据国际一流标准建造的SPF级实验动物技术平台已经可以为生物医学研究相关的动物实验提供实验设计、饲养保育、技术操作等方面的支持服务。实验动物中心确保动物实验设计的合规性、合理性，以及实验结果的严谨性和可重复性，并且负责提供实验动物福利和完善动物实验伦理。





The laboratory animal core facility has been established according to the Specific Pathogen Free (SPF) standard, now providing strong intellectual and technical support to our faculty, students, and trainees to conduct the original and rigorous inquiry. The service provided by the animal core facility includes reviewing animal protocol, animal care, and welfare, maintaining and expanding genetically modified or non-modified mice lines, small animal surgery training, and establishment of various animal disease models.

学术活动

ACADEMIC ACTIVITIES

"Imagination is more important than knowledge."

- Albert Einstein

现代生物院科学顾问委员会



冯新华
浙江大学终身教授
国家特聘专家



张学敏
军事医学科学院教授
中科院院士



陈晔光
清华大学长聘教授
中科院院士



施一公
西湖大学讲席教授
中科院院士



袁钧瑛
中科院生物与化学
交叉研究中心教授
美国艺术和科学院院士



董晨
清华大学终身教授
中科院院士



景乃禾
广州国家实验室
研究员

现代生物院科学顾问委员会由国际著名学者组成，为现代生物院的发展提供战略性资询和建议。

IMB's scientific advisory board consists of internationally renowned scholars who advise the Institute on its strategic development.





现代生物院竭力为师生提供国内外学术交流平台，通过学术讲座、PI学术讨论会等形式多样的学术交流活动，促进师生与海内外顶尖/一流学者进行学术交流与沟通。

现代生物院学术委员会就学院战略发展和重大决策做出决议。定期召开会议，对学科建设、人才招聘、招生培养、科研创新等工作进行交流讨论。

IMB organizes symposiums, special lectures and seminars to promote the scientific exchange between our faculty and students with the leading biomedical investigators by hosting academic lectures, conferences, annual academic retreat and other kind of scientific exchange activities.

IMB's academic committee is a body of professors who make decisions on the strategic plan of the Institute and provide recommendations to the Dean on various institutional issues such as faculty recruitment and promotion, student admission, education, and training.

学生培养

STUDENT EDUCATION AND TRAINING



学生培养
STUDENT EDUCATION AND TRAINING

现代生物院采用与国际一流大学接轨的硕/博研究生教育体系，培养新一代科学家和教育家：

1. **实验室轮转制度**

现代生物院实行研究生和导师双向选择培养体系。新生入学后需要进行两轮实验室轮转 （每轮 2个月），以更全面的了解实验室的研究方向和课题、拓宽研究视野。轮转结束后研究生与导师双向选择，确定导师。导师负责确认选课内容，制定论文计划并组织导师小组。两轮轮转仍无法确定导师的同学，可以申请第三轮轮转。

2. **导师小组**

导师小组由导师与至少另外两位教授组成，共同对研究生进行指导和培养；研究生每6个月向导师小组进行课题进展汇报。

3. **考核、转博和学位答辩**

硕士生在完成课程学习、实验室工作开展顺利的前提下可申请中期考核。同一专业方向同一录取时间的学生应同时进行中期考核。为保证硕士研究生的质量在入学后的第四个学期进行中期考核。由全院教授组成中期考核小组，对研究生学位课程、论文进展等方面的情况进行检查考核, 选拔优秀硕士生转博。硕/博研究生论文答辩均由导师小组同意后面向全院进行。



IMB is determined to produce the next generation of scientists and educators by providing the best education and training to our graduate students.

1. **Laboratory Rotation**

All incoming graduate students are required to take 2 rounds (2 months each) of laboratory rotations, according to their research interests. The student selects a particular laboratory doing the dissertation, based on the mutual interests between the student and the thesis advisor, and is guided by a thesis committee consisting of the advisor and two other faculty members.

2. **Dissertation Committee**

The graduate student will meet with the thesis committee every six months to report the dissertation progression.

3. **Mid-term examination, Ph.D. prelim and Dissertation defense**

Graduate students take the mid-term examination in the fourth semester on the premise that they have satisfactorily completed the course study and carried out successfully the laboratory work. The graduate students who apply for the Ph.D. training program take the Ph.D. preliminary examination at the same time. Both M.S and Ph.D. students defend their dissertations publicly with the permission of their thesis advisory committees.

核心课程 Core courses

硕士研究生的学分课程包括四类：全校公共外语、政治理论等学位课程；一级学科为基础的公共学位课程与专业学位课程；全校公共选修课及院系选修课。林安宁教授、帅克教授和其他青年教授将为研究生开设系列精品专业课程。

The graduate student curriculum includes the required courses such as foreign languages, politics and molecular and cellular biology and elective courses such as the frontiers of modern biology. The advanced courses are taught by Drs. Anning Lin, Ke Shuai and other junior faculty in English.

优秀大学生开放日 Summer Camp

现代生物院在每年暑假举办面向全国优秀大学生的开放日活动（2022年将根据疫情决定线下或线上），通过学术讲座、教授/同学座谈会、实验室以及院实验共享平台参观、南京文化和历史古迹浏览等系列活动，与优秀大学生进行深入交流，回答当前前沿学科发展的关键问题。

IMB holds summer camps for outstanding undergraduates (~ 100 participants) national wide every year. The camp activities include mini-symposium, meeting with the professors and graduate students, visiting laboratories and research facilities, culture and history sightseen of Nanjing, and the selection of the outstanding campers.



暑期科研实习 Summer Intern

现代生物院在每年暑期面向拟录取硕博研究生开放实习岗位，向各个实验室申请，由实验室提供补贴。实习期间，同学们可以与实验室导师一同制定实习计划，提前适应实验室环境。

IMB offers the intern positions to incoming graduate students every summer. The students should directly contact the laboratory they are interested in doing the internship.

学生培养
STUDENT EDUCATION
AND TRAINING

IMB
Institute of Modern Biology
现代生物院

Welcome to IMB

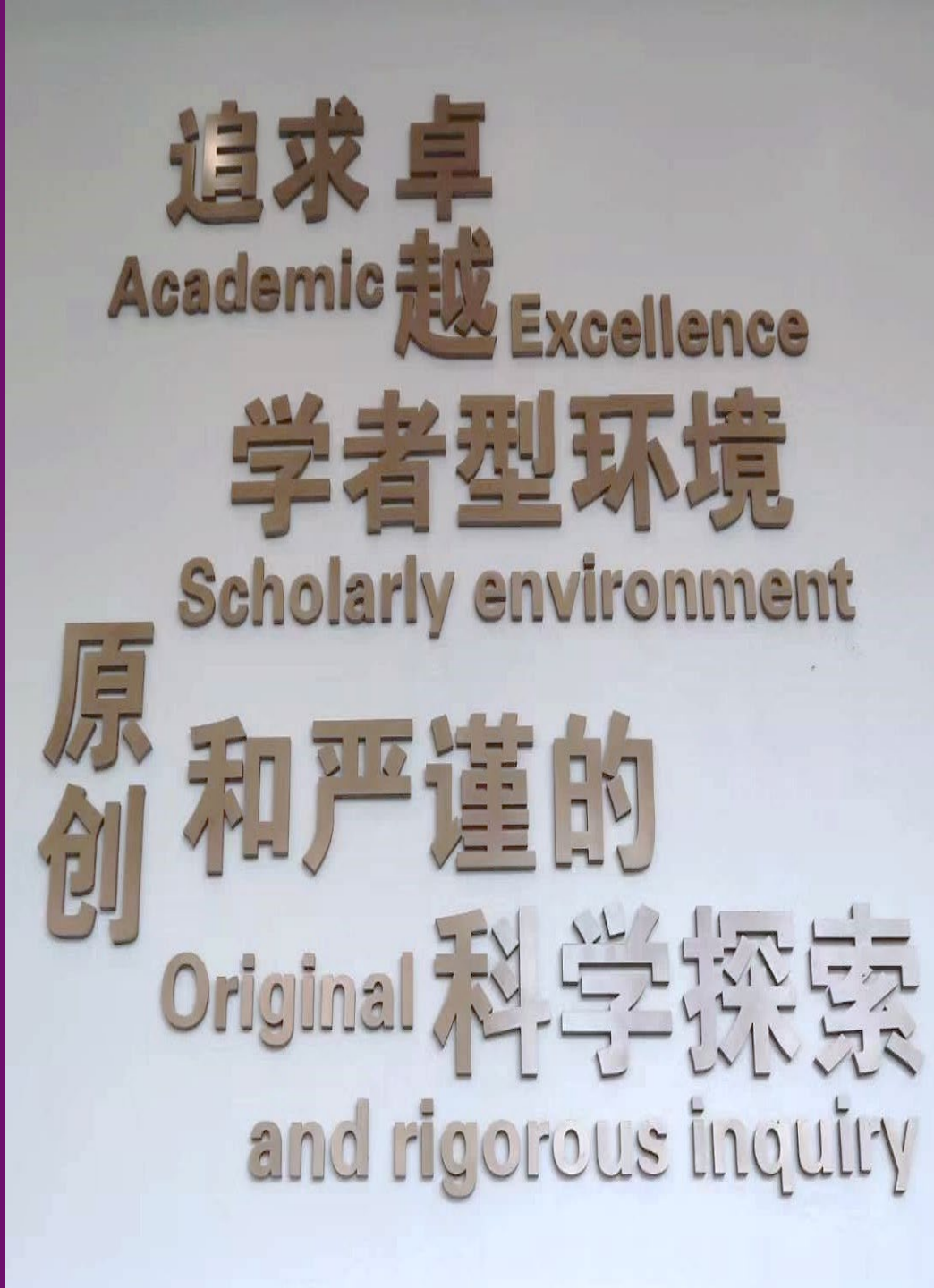


2021-2025 硕/博研究生

欢迎加入现代生物院

教职工介绍

FACULTY AND STAFF





程远明 博士

Yuanming Cheng, Ph.D.

Laboratory of Epitranscriptomic Regulation in Stem Cell and Cancer

干细胞与肿瘤表观转录调控实验室

电子邮箱/Email: ymcheng@nju.edu.cn

2016	中科院上海生命科学院 生物化学与分子生物学博士
2016 - 2021	癌症研究中心纪念斯隆凯特琳癌症中心（MSKCC） 博士后
2022 - 至今	南京大学现代生物研究院 助理教授，特聘研究员，博导

2010 - 2016	Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences (CAS), Ph.D.
2016 - 2021	Memorial Sloan Kettering Cancer Center (MSKCC), Research Scholar (Postdoctoral Fellow)
2022 –	Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

程远明教授致力于探究RNA表观遗传（表观转录组）调控基因表达的机制以及在生理和病理情况下RNA表观遗传的功能，综合运用包括分子细胞生物学、生物化学、CRISPR/Cas9筛选、各种组学、小鼠疾病模型及人类病例样本等各种前沿技术，旨在阐述干细胞命运决定及癌症发生过程中表观转录调控的机理，为理解体内肿瘤发生的机制提供新的视角，并为临床上肿瘤的治疗提供新的、有效的治疗方案和策略。主要研究方向包括:1）探究干细胞与肿瘤细胞通过表观转录调控细胞代谢的分子机制；2）探究干细胞与肿瘤细胞中表观转录-表观遗传协同调控基因表达的分子机制；3）筛选靶向表观转录调控因子的新型药物。

Dr. Cheng's laboratory investigates the mechanism of RNA epigenetics (Epitranscriptomics) regulation on gene expression and the physiological and pathological function of RNA epigenetics. By applying a variety of cutting-edge technologies including molecular and cellular biology, biochemistry, CRISPR/Cas9 screening, various omics, mouse models and human patient samples, we aim to elucidate the molecular mechanisms of epitranscriptomic regulation in stem cell fate decision and tumorigenesis. Our research will provide a new perspective for understanding the mechanisms of RNA epigenetics regulation and identify novel therapeutic strategies for cancer. The main research interests of Cheng laboratory are: 1. understanding how RNA epigenetics regulates cellular metabolism in stem cell and cancer cell; 2. Revealing the molecular mechanisms of "epigenetic-epitranscriptomic" regulation on gene expression in stem cell and cancer cell; and 3. Screening potential drugs targeting epitranscriptomic regulators.

代表论文 Selected Publications

1. **Cheng, Y.**,* Xie, W.,* Pickering, B.F., Chu, K.L., Savino, A.M., Yang, X., Luo, H., Nguyen, D.T., Mo, S., Barin, E., Velleca, A., Rohwetter, T., Patel, D.J., Jaffrey, S.R., Kharas, M.G. (2021). N6-methyladenosine on mRNA facilitates a phase-separated nuclear body that suppresses myeloid leukemic differentiation. ***Cancer Cell*** 39:958-972.
2. **Cheng, Y.**, Luo, H., and Kharas, M. G. (2020). Rubbing Out Leukemia Stem Cells by Erasing the Eraser. ***Cell Stem Cell*** 27:3-5.
3. **Cheng, Y.**,* Luo, H.,* Izzo, F.,* Pickering, B.F., Nguyen, D., Myers, R., Schurer, A., Gourkanti, S., Bruning, J.C., Vu, L.P., et al. (2019). m(6)A RNA Methylation Maintains Hematopoietic Stem Cell Identity and Symmetric Commitment. ***Cell Reports*** 28:1703-1716.
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代晓明 博士

Xiaoming Dai, Ph.D.

The laboratory of nutrient sensing pathways and cancer immunotherapy

营养感受与肿瘤免疫治疗实验室

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2012 - 2017	浙江大学生命科学研究院 博士
2017 - 2021	哈佛大学医学院 博士后
2021	哈佛大学医学院 讲师
2023	哈佛大学医学院 助理教授
2023	南京大学现代生物研究院 助理教授 特聘研究员 博导（待公示）
2012 - 2017	Zhejiang University, Life Sciences Institute, Ph.D.
2017 - 2021	Harvard Medical School, Postdoctoral Research Fellow
2021	Harvard Medical School, Instructor
2023	Harvard Medical School, Assistant Professor (Tenure Track)
2023	Nanjing University, Institute of Modern Biology, Assistant Professor (Tenure-track), Principal Investigator (PI). Ph.D. Supervisor (to be Announced)

主要研究领域与方向 Main Research Fields

实验室将利用各种前沿技术包括分子生物学、生物化学、细胞生物学、CRISPR/Cas9筛选、各种组学和小鼠疾病模型等从分子、细胞、以及动物个体水平等多个层次阐述生物体对营养和能量感受的分子机制及其在肿瘤发展以及免疫逃逸的作用。这些研究成果既对了解体内营养和能量的感受提供新的视角又将为临床上肿瘤的治疗提供新的、有效的治疗方案和策略。

1）探究生物体如何感受体内营养物质例如氨基酸、葡萄糖和脂类等变化的分子机制；
2）揭示不同营养物质对肿瘤及代谢紊乱相关疾病的发生发展机制；
3）筛选靶向体内营养感受通路的新型药物及在肿瘤代谢中的作用。

The laboratory will apply a variety of cutting-edge technologies including molecular biology, biochemistry, cell biology, CRISPR/Cas9 screening, various omics and mouse disease models to elucidate the molecular mechanisms of how cells sense nutrients and energy and its role in tumorigenesis. Our research will not only provide a new perspective for understanding the mechanisms of nutrients and energy sensing in the body, but also provide novel treatment options for cancer.

1) Explore the molecular mechanisms of how cells sense environmental nutrients such as amino acids, glucose and lipids;

2) Reveal the mechanisms of how aberrant nutrient sensing contributes to tumorigenesis and metabolic disorders;

3) Screen new drugs targeting nutrient sensing pathways to treat cancer and metabolic disorders.

代表论文 Selected Publications

1. **Dai X*,** Jiang C*, Jiang Q*, Fang L, Yu H, Guo J, Yan P, Chi F, Zhang T, Inuzuka H, Asara JM, Wang P, Guo J†, Wei W†. (2023). AMPK-dependent phosphorylation of the GATOR2 component WDR24 suppresses glucose-mediated mTORC1 activation. ***Nature Metabolism*** 5:265-276.
2. **Dai X*,** Bu X*, Gao Y*, Guo J, Hu J, Jiang J, Zhang Z, Xu K, Duan J, He S, Zhang J, Wan L, Liu T, Zhou X, Hung M-C, Freeman G, Wei W. (2021). Energy status dictates PD-L1 protein abundance and anti-tumor immunity to enable checkpoint blockade. ***Molecular Cell*** 81:2317-2331.e6.
3. **Dai X,** Liu J, Wei W. (2023). Mitochondrial PD-L1 modulates cancer immunotherapy. (2023). ***Cell Research*** 33:335-336.
4. Jiang C*, **Dai X*,** He S, Zhou H, Fang L, Guo J, Liu S, Zhang T, Pan W, Yu H, Fu T, Li D, Inuzuka H, Wang P, Xiao J†, Wei W†. (2023). Ring domains are essential for GATOR2-dependent mTORC1 activation. ***Molecular Cell*** 83:74-89.e9.
5. Gan, W.,* **Dai, X*,** Dai, X., Xie, J., Yin, S., Zhu, J., Wang, C., Liu, Y., Guo, J., Wang, M., Liu, J., Hu, J., Quinton, R.J., Ganem, N.J., Liu, P., Asara, J.M., Pandolfi, P.P., Yang, Y., He, Z., Gao, G., Wei, W. (2020). LATS suppresses mTORC1 activity to directly coordinate Hippo and mTORC1 pathways in growth control. ***Nature Cell Biology*** 22:246-256. (*Equal Contribution)



冯素敏 博士

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2013 - 2019　北京大学 理学博士

2019 - 2024　加拿大多伦多大学 卢能菲尔德-坦南鲍姆研究所 博士后

2025 - 至今　南京大学现代生物研究院 助理教授 独立研究员 博导（待公示）

2013 - 2019　Peking University, Ph.D.

2019 - 2024　University of Toronto, Lunenfeld-Tanenbaum Research Institute, Postdoc

2025 -　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

冯素敏教授实验室聚焦于基因组稳定性维持的分子机制，特别关注该机制受损如何驱动肿瘤、衰老及神经退行性疾病等重大疾病的发生与演进。实验室以DNA损伤应答与修复通路为核心，系统解析关键调控因子的功能依赖性及其在不同遗传背景下的网络重构特征，识别潜在的合成致死关系，为重大疾病的靶向干预策略提供理论基础与候选靶点。围绕“从机制解析到靶点验证”的研究主线，实验室建立了多层次、可拓展的功能研究平台，涵盖高通量CRISPR筛选、碱基编辑技术、蛋白质诱导互作系统（induced proximity）、染色质组学分析等，能够从分子、生化与细胞水平系统性揭示DNA修复因子的功能网络及互作关系，并加速基础研究成果的临床转化。我们致力于在复杂遗传背景下，探索基因组稳态受损所带来的“致命依赖点”，并据此开发创新型靶向干预策略。具体研究方向和内容包括：1）构建DNA损伤修复调控功能图谱，深入揭示基因组稳定性维持的关键机制；2）基于合成致死原理，在特定类型肿瘤中挖掘可成药靶点，发展精准治疗策略；3）利用蛋白质近距离诱导系统，筛选并开发具备选择性降解能力的小分子或工程工具，用于实现关键修复蛋白的靶向干预。

Dr. Feng focuses on the molecular mechanisms that maintain genome stability, with particular interest in how disruptions in these pathways contribute to cancer, aging-related diseases, and neurodegenerative disorders. By studying the DNA damage response and associated repair pathways, the lab investigates the functional dependencies of key regulatory factors and how repair networks are rewired under different genetic backgrounds. A major goal is to identify synthetic lethal interactions that can be leveraged for targeted therapeutic development. The lab has built a multiscale and expandable research platform that supports the full pipeline from mechanistic discovery to therapeutic validation. Core technologies include high-throughput CRISPR screening, base editing tools, induced proximity-based protein interaction systems, and chromatin profiling techniques. Key research directions include: 1) Constructing functional maps of DNA repair regulation to elucidate essential mechanisms of genome maintenance; 2) Identifying druggable targets in specific cancer types based on synthetic lethality principles; 3) Developing selective molecular tools via induced proximity screening platforms to degrade essential repair proteins for targeted cancer therapy.

代表论文 Selected Publications

1. **Feng S**, Liu K, Shang J, Hoeg L, Sastre-Moreno G, Melo H, Yang W, Roy S, Young J, Xu D, Durocher D. Profound synthetic lethality between FANCM and SMARCAL1. ***Molecular Cell.*** 2024 84.23 (2024): 4522-4537.
2. **Feng S***, Ma S*, Li K*, Gao S, Ning S, Shang J, Guo R, Chen Y, Blumenfeld B, Simon I, Li Q, Guo R, Xu D. RIF1-ASF1-mediated high-order chromatin structure safeguards genome integrity. ***Nature communications.*** 2022 Feb 17;13(1):957. (*Equal contribution).
3. Gao S*, **Feng S***, Ning S, Liu J, Shang J, Zhao K, Guo R#, Xu D#. An OB- fold complex controls the repair pathways for DNA double-strand breaks. ***Nature Communications.*** 2018 Sep 25;9(1):3925. (*Equal contribution).
4. **Feng S**, Zhao Y, Xu Y, Ning S, Hou W, Hou M, Gao G, Ji J, Guo R#, Xu D#. Ewing Tumor- Associated Antigen 1 Interacts with Replication Protein A to Promote Restart of Stalled Replication Forks. ***Journal of Biological Chemistry.*** 2016 Oct 1;291(42):21956-62.



关东铣 博士

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2008 - 2015	中国科学院上海生命科学研究院 生物化学与分子生物学 博士
2015 - 2016	中国科学院上海生命科学研究院 博士后
2016 - 2024	美国哈佛大学医学院/波士顿儿童医院 博士后
2024 - 至今	南京大学现代生物研究院 助理教授 特聘研究员 博导（待公示）

2008 - 2015	Chinese Academy of Sciences Shanghai Institutes for Biological Sciences, Ph.D.
2015 - 2016	Chinese Academy of Sciences Shanghai Institutes for Biological Sciences, Postdoctoral Fellow
2016 – 2024	Harvard Medical School/Boston Children's Hospital, Postdoctoral Research Fellow
2024 -	Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

关东铣教授长期聚焦于重大代谢性疾病及肿瘤相关的机制与转化研究，围绕内质网应激开展了其与系统性炎症、糖脂代谢紊乱、瘦素抵抗、神经元敏感性及肿瘤干细胞的适应性耐药等多角度的探索并取得了一系列开创性的研究成果：首次揭示乙酰化修饰对瘦素受体的敏感性调控机制，重新定义了瘦素抵抗；首次实现靶向激活瘦素受体，取得多年来应对肥胖代谢病的历史性突破，并发现了多项高转化潜力的化学小分子；首次揭示蛋白质顺反异构折叠紊乱的感应机制和致病机理；首次挑战并证明了临床随机对照双盲实验评价体系的不完备性；率先构建并利用临床来源的肝癌活体库揭示了肿瘤干细胞对分子靶向药的适应性耐药机理与分化治疗可行性等， 旨在为相关疾病的临床诊疗提供有建设性的参考方案。关东铣实验室现阶段的主要研究方向为探索重大疾病中以临床转化为导向的神经代谢调控与新药研发，包括：1，中枢关键核团神经元的敏感性陷阱感知；2，中枢与外周的多元化场景式交互；3，细胞功能性重塑与干预等。以大数据、多模态、多学科、高前沿技术相融合的策略，开展原始创新型的研究。

Dr. Guan has been dedicated to investigating the mechanisms and translational research related to critical metabolic diseases and tumors. Specifically, he has focused on understanding both the functions and mechanisms of endoplasmic reticulum stress in systemic inflammation, dysregulation of glucose and lipid metabolism, leptin resistance, neuronal sensitivity, and adaptive resistance of tumor stem cells in clinical therapy. Through this multidimensional exploration, He has made several breakthrough outcomes, including: 1) revealing the critical mechanism of acetylation of leptin receptors (LepR) to regulate its sensitivity, leading to a rewrite of leptin resistance in the obesity field; 2) discovering multiple chemical small molecules to directly activate LepR, making a milestone in obesity research to overcome leptin resistance over the years; 3) elucidating the cellular sensing and pathogenic mechanism of protein cis-trans isomerization disorder; and 4) challenging and documenting for the first time the incompleteness of the clinical randomized controlled trial (RCT) evaluation system; 5) establishing a clinical liver cancer patient-derived xenograft (PDX) library to reveal the adaptive resistance mechanism of tumor stem cells to molecularly targeted drugs and explore the feasibility of differentiation therapy. These endeavors aim to provide constructive references for clinical diagnosis and therapeutics. Through the integration of big data, multimodal, multidisciplinary, and cutting-edge technologies, the current primary research in Dr. Guan's Laboratory is working on neuro-metabolic regulation and novel drug development in extremely significant clinical challenges, including: 1) sensitivity trap perception of central neurons in metabolic diseases; 2) diversified scenario-based interactions between central and peripheral systems; 3) cellular functional remodeling and intervention, etc.

代表论文 Selected Publications

1. **Guan Dongxian**, Men Yuqin, Bartlett Alexander, Salazar Hernández Mario Andrés, Xu Jie, Yi Xinchi, Li Husong, Kong Dong, Mazitschek Ralph, Ozcan Umut. Central Inhibition Of HDAC6 Re-Sensitizes Leptin Signaling During Obesity To Induce Profound Weight Loss. ***Cell Metabolism***. 2024 Apr 2;36(4):857-876.

2. Herrema Hilde*, **Guan Dongxian***, Choi Jae Won*, Feng Xudong, Salazar Hernandez Mario Andres, Faruk Farhana, Auen Thomas, Boudett Eliza, Tao Rongya, Chun Hyonho, Ozcan Umut. FKBP11 Rewires UPR Signaling To Promote Glucose Homeostasis In Type2 Diabetes And Obesity. ***Cell Metabolism***. 2022 Jul 5;34(7):1004-1022.

3. Feng Xudong*, **Guan Dongxian***, Auen Thomas, Choi Jae Won, Salazar-Hernandez Mario Andres, Lee Jaemin, Chun Hyonho, Faruk Farhana, Kaplun Esther, Herbert Zachary, Copps Kyle D, Ozcan Umut. IL1R1 Is Required For Celastrol's Leptin Sensitization And Anti-Obesity Effects. ***Nature Medicine***. 2019 Apr;25(4):575-582.

4. **Guan Dongxian**, Shi Jie, Zhang Yang, Zhao Jiangsha, Long Lingyun, Chen Tianwei, Zhang Eebin, Feng Yuanyuan, Bao Wendai, Deng Yuezhen, Qiu Lin, Zhang Xueli, Koeffler HP, Cheng Shuqun, Li Jingjing, Xie Dong. Sorafenib Enriches Epcam Positive Tumor Initiating Cells And Exacerbates A Subtype Of Hepatocellular Carcinoma Through TSC2-AKT Cascade. ***Hepatology***. 2015 Dec;62(6):1791-803.

5. Zhang Yang*, **Guan Dongxian***, Shi Jie, Gao Hong, Li Jingjing, Zhao Jiangsha, Qiu Lin, Liu Jiang, Li Nan, GuoWeixing, Xue Jie, Zhou Feiguo, Wu Mengchao, Wang Hongyang, Xie Dong, Cheng Shuqun. All-Trans Retinoic Acid Potentiates The Chemotherapeutic Effect Of Cisplatin By Inducing Differentiation Of Tumor Initiating Cells In Liver Cancer. ***Journal of Hepatology***. 2013 Dec;59(6):1255-63.

(*Equal contribution)



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2013 - 2019　NKI-AVL (荷兰癌症研究中心)　博士

2019 - 2024　Hubrecht Institute （荷兰皇家科学院）博士后

2025 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导

2013 - 2019　Netherlands Cancer Institute-Antoni van Leeuwenhoek Hospital, Ph.D.

2019 - 2024　Hubrecht Institute, Postdoctoral Fellow

2025 - Present　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

韩瑞琦教授长期致力于探究表观遗传对基因转录及细胞功能的影响，在相关领域取得了一系列原创性成果。1.首次通过系统性的研究来揭示在细胞中基因转录过程与蛋白质翻译效率之间的直接关系，并通过m6A相关的RNA修饰解释了其中的关键机制（Cell, 2017）。2. 建立了首个针对非编码基因组的CRISPR文库来对人类基因组的增强子区域进行功能性筛选，并发现了数个具有显著细胞功能的增强子 （Nature biotechnology, 2016; Genome biology 2018）。3. 首次在细胞中开发了黏连蛋白定向装载并可实现正常蛋白功能的工具，同时揭示了若干黏连蛋白关键功能的原创研究（Manuscript in revision, 2025）。具体研究方向和内容包括：（1）黏连蛋白和转录之间的互作关系；（2） 黏连蛋白对致癌基因及细胞功能的影响；（3） 黏连蛋白对DNA损伤修复及其在癌症治疗中的应用；（4）建立CRISPR筛选文库来发现新的癌症治疗靶点。

Dr. Han has long been dedicated to investigating the impact of epigenetics on gene transcription and cellular functions, achieving a series of original findings in this field:
A systematic study revealed, for the first time, the direct relationship between gene transcription and protein translation efficiency in cells, uncovering a key mechanism mediated through m6A RNA modifications (Cell, 2017); He established the first CRISPR library specifically targeting the human non-coding genome, enabling functional screening of enhancer regions, and identified several enhancers with critical cellular functions (Nature Biotechnology, 2016; Genome Biology, 2018). He developed the first cellular tool capable of targeted cohesin loading while maintaining normal protein function, uncovering several novel cohesin-mediated mechanisms (Manuscript in revision, 2025).
His current research directions specifically include:
(1) The interactions between cohesin complexes and transcription processes;
(2) The impact of cohesin on oncogene regulation and cellular function;
(3) The role of cohesin in DNA damage repair and its potential applications in cancer therapy;
(4) Construction of CRISPR screening libraries to discover new therapeutic targets in cancer.

代表论文 Selected Publications

1. **Ruiqi Han#***, Yike Huang#, Iwan Vaandrager, Amin Allahyar, Mikhail Magnitov, Marjon Verstegen, Elzo de Wit, Peter H. L. Krijger, Wouter de Laat*. Targeted cohesin loading characterizes the entry and exit sites of loop extrusion trajectories. (Manuscript in revision)
2. Boris Slobodin#*, **Ruiqi Han#,** Vittorio Calderone, Joachim AF Oude Vrielink, Fabricio Loayza-Puch, Ran Elkon, Reuven Agami*. Transcription impacts the efficiency of mRNA translation via co-transcriptional N6-adenosine methylation. Cell 169(2): 326-337. (2017)
3. **Ruiqi Han#,** Li Li#, Alejandro Piñeiro Ugalde, Arieh Tal, Zohar Manber, Eric Pinto Barbera, Veronica Della Chiara, Ran Elkon, Reuven Agami. Functional CRISPR screen identifies AP1-associated enhancer regulating FOXF1 to modulate oncogene-induced senescence. Genome biology 19: 118. (2018)
4. Gozde Korkmaz#, Rui Lopes#, Alejandro P Ugalde, Ekaterina Nevedomskaya, **Ruiqi Han**, Ksenia Myacheva, Wilbert Zwart, Ran Elkon, Reuven Agami*. Functional genetic screens for enhancer elements in the human genome using CRISPR-Cas9. Nature Biotechnology 34(2): 192-198. (2016)



黄靓倩 博士

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2011 - 2016	中国科学院上海生命科学研究院 生物化学与分子生物学博士
2016 - 2022	美国宾夕法尼亚大学医学院 博士后
2022 - 至今	南京大学现代生物研究院 助理教授 特聘研究员 博导

2007 - 2011	Sun Yat-Sen University, Bachelor
2011 - 2016	Chinese Academy of Sciences Shanghai Institutes for Biological Sciences, PhD
2016 - 2022	University of Pennsylvania School of Medicine, Postdoctoral Fellow
2022 -	Nanjing University Institute of Modern Biology, Assistant Professor (Tenure Track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

黄靓倩教授研究发现了一类新型的、具有负电荷结构域的非传统蛋白质量控制系—Poly-D/E蛋白，能够帮助蛋白质正确折叠，并且有效抑制肿瘤与神经退行性疾病，为开发疾病治疗方法提供了新的方向。黄靓倩教授及其团队致力于研究蛋白质量控制系统在细胞稳态中的作用与分子机制，具体包括以下三方面：1）解析Poly-D/E蛋白介导的非传统蛋白质量控制系统在维持细胞稳态中的作用与分子机制；2）探讨非传统蛋白质量控制对蛋白质液相分离与无膜细胞器形成、稳定、老化的调控作用与分子机制；3）研究非传统蛋白质量控制系统在蛋白质错误折叠疾病的防治等方面的新应用。

Dr. Huang has discovered a new type of protein folding regulatory proteins (Poly-D/E proteins), which can be used as non-traditional protein quality control (PQC) system to help proteins fold correctly and effectively inhibit tumors and neurodegenerative diseases. Huang laboratory is committed to studying the role and molecular mechanism of PQC system in cellular homeostasis, include the following aspects: 1. Analyze the role of the non-traditional PQC system mediated by Poly-D/E proteins in maintaining cellular homeostasis; 2. Investigate the effect of non-traditional PQC on protein phase separation and membraneless condensates formation, stabilizing and aging; and 3. Study the new applications of non-traditional PQC system in prevention and treatment of protein misfolding diseases.

代表论文 Selected Publications

1. **Huang, L.**, Agrawal, T., Zhu, G., Yu, S., Tao, L., Lin, J., Marmorstein, R., Shorter, J., and Yang, X. (2021). DAXX represents a new type of protein-folding enabler. ***Nature*** 597:132–137.
2. Zhu, G., Harischandra, D.S., Ghaisas, S., Zhang, P., Prall, W., **Huang, L.**, Maghames, C., Guo, L., Luna, E., Mack, K.L., Torrente, M.P., Luk, K.C., Shorter, J., Yang, X. (2020). TRIM11 Prevents and Reverses Protein Aggregation and Rescues a Mouse Model of Parkinson's Disease. ***Cell Rep*** 33:108418.
3. **Huang, L.**, Yu, Z., Zhang, Z., Ma, W., Song, S., Huang, G. (2016). Interaction with Pyruvate Kinase M2 Destabilizes Tristetraprolin by Proteasome Degradation and Regulates Cell Proliferation in Breast Cancer. ***Sci Rep*** 6:22449.
4. **Huang, L.**, Yu, Z., Zhang, T., Zhao, X., Huang, G. (2014). HSP40 interacts with pyruvate kinase M2 and regulates glycolysis and cell proliferation in tumor cells. ***PLoS One*** 9:e92949.
5. Yu, Z., Zhao, X., **Huang, L.**, Zhang, T., Yang, F., Xie, L., Song, S., Miao, P., Zhao, L., Sun, X., Liu, J., Huang, G. (2013). Proviral insertion in murine lymphomas 2 (PIM2) oncogene phosphorylates pyruvate kinase M2 (PKM2) and promotes glycolysis in cancer cells. ***J Biol Chem*** 288:35406-35416.



林安宁 博士

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1986 - 1990	阿拉巴马州立大学伯明翰分校 博士
1991 - 1996	加州大学圣地亚哥分校 Michael Karin 实验室 博士后
1996 - 1999	阿拉巴马州立大学伯明翰分校 助理教授
1999 - 2020	历任芝加哥大学Ben May 癌症生物学系 助理教授 终身副教授 终身正教授
2009 - 2014	中科院上海生化与细胞所 终身正教授 研究员 博导 所长
2020 - 至今	南京大学现代生物研究院 终身正教授 特聘研究员 博导 院长

1986 - 1990	University of Alabama at Birmingham (UAB), Ph.D.
1991 - 1996	University of California, San Diego (UCSD), Postdoctoral Fellow in Michael Karin's laboratory
1996 - 1999	University of Alabama at Birmingham (UAB), Assistant Professor (Tenure-track)
1999 - 2020	University of Chicago, Assistant Professor (Tenure-track), Associate Professor (Tenured), Professor (Tenured)
2009 - 2014	Shanghai Institute of Biochemistry and Cell Biology (SIBCB), Chinese Academy of Sciences (CAS), Professor (Tenured), Principal Investigator, Ph.D. Supervisor, Director
2020 -	Institute of Modern Biology, Nanjing University, Professor (Tenured), Principal Investigator (PI), Ph.D. Supervisor, Dean

主要研究领域与方向 Main Research Fields

林安宁教授是著名JNK-c-Jun信号转导通路的主要发现人之一，在整合肿瘤坏死因子TNFα 信号转导网络整合及其在细胞凋亡、炎症、肿瘤和老年痴呆等疾病中的作用机理方面做出了一系列原创性发现。实验室目前主要研究方向包括：1) 生物人工智能; 2) 重塑肿瘤免疫信号转导网络; 3) 神经退行性疾病的信号转导机理。

Dr. Lin played an instrumental role in the discovery of JNK-c-Jun signaling pathway and made a series of seminal and original findings on wiring TNFα signaling network and its mechanism of action in programmed cell death, inflammation, cancer and Alzheimer's disease. The main research interests of Lin laboratory are: 1. AI Biology; 2. Rewiring signaling network in tumor infiltrating immune cells; and 3. Signaling mechanism of neurodegenerative diseases.

代表论文 Selected Publications

1. Zhang, W., Zhangyuan, Y., Wang, F., Jin, K., Shen, H., Zhang, L., Yuan, X., Wang, J., Zhang, H., Yu, W., Huang, R., Xu, X., Yin, Y., Zhong, G., **Lin, A***., Sun, B*. (2021). The zinc finger protein Miz1 suppresses liver tumorigenesis by restricting hepatocyte-driven macrophage activation and inflammation. ***Immunity*** 54:1168-1185. (*Equal corresponding author)
2. Yan, J., Zhang, H., Xiang, J., Zhao, Y., Yuan, X., Sun, B., and **Lin, A.** (2018). The BH3-only protein BAD mediates TNFα cytotoxicity despite concurrent activation of IKK and NF-κB in septic shock. ***Cell Res*** 28:701-718.
3. Yan, J., Xiang, J., Lin, Y., Ma, J., Zhang, J., Zhang, H., Sun, J., Danial, N.N., Liu, J., and **Lin, A.** (2013). Inactivation of BAD by IKK inhibits TNFα-induced apoptosis independently of NF-κB activation. ***Cell*** 152: 304-315.
4. Yu, C., Minemoto, Y., Zhang, J., Liu, J., Tang, F., Bui, T.N., Xiang, J., and **Lin, A**. (2004). JNK suppresses apoptosis via phosphorylation of the proapoptotic BCL-2 family protein BAD. ***Mol Cell*** 13:329-340.
5. Tang, G., Minemoto, Y., Dibling, B., Purcell, N.H., Li, Z., Karin, M., and **Lin, A**. (2001). Inhibition of JNK activation through NF-κB target genes. ***Nature*** 414:313-317.



刘畅 博士

Chang Liu, Ph.D.

Laboratory of tumor immunology and immune memory

肿瘤免疫和免疫记忆实验室

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2005 - 2011　中科院上海生物化学与细胞生物学研究所 博士
2013 - 2014　圣裘德儿童研究医院 博士后
2014 - 2019　匹兹堡大学 博士后
2019 - 2021　匹兹堡大学 研究科学家
2022 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导

2005 - 2011　Shanghai Institutes for Biochemistry and Cell Biology, Chinese Academy of Sciences, Ph.D.
2013 - 2014　St. Jude Children's Research Hospital Postdoctoral Scholar
2014 - 2019　University of Pittsburgh School of Medicine Postdoctoral Associate
2019 – 2021　University of Pittsburgh School of Medicine Research Scientist
2022 -　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

刘畅教授在肿瘤免疫领域接受了系统的博士后研究训练，其工作首次提出“免疫记忆相关检验点蛋白 (Memory Checkpoints)”的概念，并提示这类蛋白可能是导致肿瘤特异性免疫记忆难以建立的分子基础。实验室将继续致力于揭示肿瘤特异性免疫记忆形成的基本原理，为理解临床中肿瘤术后复发，转移，宿主对免疫治疗响应异质性等关键现象提供分子细胞机理，从而指导新颖药靶的发现和临床治疗的优化。实验室主要研究方向包括: 1. 关键受体蛋白，转录因子及肿瘤微环境调控肿瘤特异性长期免疫的分子机制； 2. CRISPR/Cas9系统性体内筛选未知 Memory Checkpoints 并阐释其作用机理；3. 介导肿瘤特异性免疫记忆的细胞起源及其命运决定的调控。

Dr. Liu's research focuses on understanding immune response against tumor and has made a series of discoveries during her postdoc training. In particular, her work has led to the concept of 'Memory Checkpoints' that defines a novel class of immune checkpoints selectively inhibiting the formation of tumor-specific long-term immunity. The independent research in Liu Lab will be dedicated to the regulation of tumor-specific long-term immunity, specifically, to decipher the 'multilayered' Memory Checkpoints at both cellular and molecular levels. The answers to these questions will lay the groundwork for rationally designing therapies that exert both effective and durable anti-tumor effect.

"***Science is not for the faint of heart, but for the soul of curiosity and the spirit of perseverance.***"

代表论文 Selected Publications

1. **Liu, C.**, Somasundaram, A., Manne, S., Gocher, A.M., Szymczak-Workman, A.L., Vignali, K.M., Normolle, D.P., Ferris, R.L., Bruno, T.C., Wherry, E.J., Workman, C.J., Vignali, D, A.A. (2020). Neuropilin-1 is a T cell memory checkpoint limiting long-term anti-tumor immunity. ***Nat. Immunol*** 21:1010-1021
2. Chuckran, C.A.*, **Liu, C.***, Bruno, T.C., Workman, C.J., Vignali, D, A.A. (2020). Neuropilin-1: a checkpoint target with unique implications for cancer immunology and immunotherapy. ***Journal for ImmunoTherapy of Cancer*** 8:e000967. (*Equal contribution)
3. Andrews, L.P., Somasundaram, A., Moskovitz, J.M., Szymczak-Workman, A.L., **Liu, C.**, Cillo, A.R., Lin, H., Normolle, D.P., Moynihan, K.D., Taniuchi, I., Irvine, D.J., Kirkwood, J.M., Lipson, E.J., Ferris, R.L., Bruno, T.C., Workman, C.J., Vignali, D, A.A. (2020). Resistance to PD1 blockade in the absence of metalloprotease-mediated LAG3 shedding. ***Sci. Immunol*** 5:eabc2728
4. **Liu, C.**, Chikina, M., Deshpande, R., Menk, A.V., Wang, T., Tabib, T., Brunazzi, E.A., Vignali, K.M., Sun, M., Stolz, D.B., Lafyatis, R.A., Chen, W., Delgoffe, G.M., Workman, C.J., Wendell, S.G., and Vignali, D, A.A. (2019). Treg cells promote the SREBP1-dependent metabolic fitness of tumor-promoting macrophages via repression of $CD8^+$ T cell-derived Interferon-γ;. ***Immunity*** 51:381-397.
5. **Liu, C.**, Workman, C.J., Vignali, D, A.A. (2016). Targeting Regulatory T Cells in Tumors. ***FEBS J*** 283:2731-2748



刘喜娟 博士

Xijuan Liu, Ph.D.

Laboratory of Tumor Oxygen Sensing Pathway and Hypoxia

肿瘤氧气感知与缺氧实验室

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2011 - 2017　中国科学院武汉病毒研究所 微生物学博士

2017- 2023　美国北卡罗来纳大学教堂山分校与美国西南医学中心联合博士后

2023 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导

2007 - 2011　Southwest Jiaotong University, Bachelor

2011 - 2017　Wuhan Institute of Virology, Chinese Academy of Sciences, Ph.D.

2017 - 2023　University of North Carolina at Chapel Hill and UT Southwestern Medical Center, Postdoctoral Fellow and Research Associate

2023　Nanjing University Institute of Modern Biology, Assistant Professor (Tenure Track), Principal Investigator (PI), Ph.D. Supervisor (to be Announced)

主要研究领域与方向 Main Research Fields

刘喜娟教授致力于氧气感知与缺氧驱动肿瘤发生发展机制研究，刘喜娟教授发现了新的氧气感知通路底物，解析了缺氧促进肿瘤发生的新机制，为临床治疗肾透明细胞癌提供了新靶标；刘喜娟教授是组蛋白羟基化修饰的发现者并命名为H3P16oh，此项发现开辟了一个氧气感知-组蛋白羟基化-信号通路调控-肿瘤发生的新的领域。刘喜娟教授具体研究方向为：1）探讨肿瘤如何感知氧气、肿瘤缺氧与肿瘤发生；2）探讨蛋白修饰尤其是脯氨酸羟基化与肿瘤发生。

Dr. Liu researches Oxygen sensing pathway and Hypoxia in cancer. Dr. Liu has identified SFMBT1 as a novel oxygen sensing pathway target, which may represent a new therapeutic avenue for kidney cancer treatment; Dr. Liu reported the existence of a histone PTM in mammalian cells, namely histone H3 with hydroxylation of proline at residue 16 (H3P16oh). Dr. Liu's findings linked Oxygen sensing signaling, Histone modification and Gene expression. Liu laboratory is focusing on studying : (1) Oxygen sensing pathway and Hypoxia in cancer; (2) Protein modification especially Proline Hydroxylation in cancer.

代表论文 Selected Publications

1. **Xijuan Liu#,** Wang J#, Gong W, Zhao S, Zhang C, Wu Q, Jain K, Boyer JA, Guo Y, Rodriguez J, Li M, Uryu H, Liao C, Hu L, Zhou J, Shi X, Tsai YH, Yan Q, Luo W, Zhang Q, Strahl BD, Kriegsheim A, Wang GG*, Baldwin AS*, Zhang Q*. (2022). A Role for Histone H3 Proline 16 Hydroxylation in Regulation of Mammalian Gene Expression. ***Nature Genetics*** 54:1721-1735.
2. **Xijuan Liu,** Simon JM, Xie H, Hu L, Wang J, Zurlo G, Fan C, Ptacek TS, Herring L, Tan X, Li M, Baldwin AS, Kim WY, Wu T, Kirschner MW, Gong K, Zhang Q. (2020). Genome-wide Screening Identifies SFMBT1 as an Oncogenic Driver in Cancer with VHL Loss. ***Mol Cell*** 77:1294-1306.e5.
3. Xie H#, Zhou J#, **Xijuan Liu#,** Xu Y, Simon JM, Hepperla A, Liao C, Baldwin AS, Gong K*, Zhang Q*. (2022). USP13 Promotes Deubiquitination of ZHX2 and Tumorigenesis in Kidney Cancer. **Proc Natl Acad Sci U S A** 119:e2119854119.
4. **Xijuan Liu,** Zurlo G, Zhang Q. (2020). The Roles of Cullin-2 E3 Ubiquitin Ligase Complex in Cancer. ***Adv Exp Med Biol*** 1217:173-186. *(Chapter)*
5. **Xijuan Liu,** Yang B, Huang SN, Wu CC, Li XJ, Cheng S, Jiang X, Hu F, Ming YZ, Nevels M, Britt WJ, Rayner S, Tang Q, Zeng WB, Zhao F, Luo MH. (2017). Human cytomegalovirus IE1 downregulates Hes1 in neural progenitor cells as a potential E3 ubiquitin ligase. ***PLoS Pathog*** 13:e1006542.



罗文 博士

Wen Luo, Ph.D.

Cardiovascular Development and Disease Laboratory

心血管发育与疾病发生实验室

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2008 - 2015　南京大学模式动物研究所 博士

2015 - 2020　西班牙国家心血管研究中心 博士后

2021 - 至今　南京大学现代生物研究院 助理教授　特聘研究员 博导

2008 - 2015　Nanjing University, Model Animal Research Certer. Ph.D.

2015 - 2020　Centro Nacional de Investigaciones Cardiovasculares
Postdoctoral Research Fellow

2021 –　Nanjing University, Institute of Modern Biology, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

罗文教授实验室将利用先进的诱导型荧光遗传嵌合小鼠模型，全新的组织分离及全组织荧光染色方法，遗传谱系示踪技术，并以3D荧光成像的方式实现高分辨率、单细胞水平上对心血管发育，动静脉分化，血管重塑与再生等进行动态观察和分析，同时结合高通量流式细胞分选及单细胞测序技术探究其分子细胞机制，并为治疗冠状动脉疾病和缺血性心血管疾病的策略。主要研究方向：1)环境因素对心血管发育与血管新生的影响(缺氧、损伤)；2)血管动静脉分化的分子细胞调控机制;3)内皮细胞与神经导向因子互作在心脑血管发育与形成中的作用机制研究

Dr. Luo's laboratory will take advantage of novel advanced inducible fluorescent genetic mosaic mouse models, novel tissue dissection and whole mount immunostaining methods, genetic lineage tracing technologies to trace and analyze cardiovascular development, arterial and venous (A-V) differentiation, vessel remodeling and regeneration at high resolution, in single-cell level and in a 3D manner, meanwhile, by using high-throughput flow cytometric sorting and single-cell RNA sequencing analysis for molecular and cellular mechanisms investigation. Our research will enable better strategies to treat coronary artery disease and ischemic cardiovascular disease. The main research interests of Luo laboratory are: 1. The effect of environmental factors on cardiovascular development and neovascularization; 2. The molecular and cellular mechanisms in arterial and venous (A-V) differentiation; and 3. The interaction of endothelium and axon guiding molecules in cardio/cerebrovascular development and formation.

代表论文 Selected Publications

1. **Luo, W.**, Garcia-Gonzalez, I., Fernandez-Chacon, M., Casquero-Garcia, V., Sanchez-Munoz, M.S., Muhleder, S., Garcia-Ortega, L., Andrade, J., Potente, M., Benedito, R. (2021). Arterialization requires the timely suppression of cell growth. ***Nature*** 589:437-441.
2. Pontes-Quero, S., Fernandez-Chacon, M., **Luo, W.**, Lunella, F.F., Casquero-Garcia, V., Garcia-Gonzalez, I., Hermoso, A., Rocha, S.F., Bansal, M., Benedito, R. (2019). High mitogenic stimulation arrests angiogenesis. ***Nat Commun*** 10:2441.
3. Fernandez-Chacon, M., Casquero-Garcia, V., **Luo, W.**, Francesca Lunella, F., Ferreira Rocha, S., Del Olmo-Cabrera, S., Benedito, R. (2019). iSuRe-Cre is a genetic tool to reliably induce and report Cre-dependent genetic modifications. ***Nat Commun*** 10:2262.
4. Pontes-Quero, S., Heredia, L., Casquero-Garcia, V., Fernandez-Chacon, M., **Luo, W.**, Hermoso, A., Bansal, M., Garcia-Gonzalez, I., Sanchez-Munoz, M.S., Perea, J.R., et al. (2017). Dual ifgMosaic: A Versatile Method for Multispectral and Combinatorial Mosaic Gene-Function Analysis. ***Cell*** 170:800-814.
5. **Luo, W.**, Zhao, X., Jin, H., Tao, L., Zhu, J., Wang, H., Hemmings, B.A., and Yang, Z. (2015). Akt1 signaling coordinates BMP signaling and β-catenin activity to regulate second heart field progenitor development. ***Development*** 142:732-742.



任兴杰 博士

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Laboratory of Genome Editing and Gene Regulation

基因编辑与基因调控实验室

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2012 - 2017	清华大学 生物学博士
2017 - 2022	美国加州大学旧金山分校 博士后
2022 - 2025	美国加州大学旧金山分校 副研究科学家
2025 - 至今	南京大学现代生物研究院 助理教授 研究员 博导（待公示）

2012 - 2017	Tsinghua University, Ph.D.
2017 - 2022	University of California San Francisco, Postdoctoral Fellow
2022 - 2025	University of California San Francisco, Assistant Specialist
2025 -	Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

任兴杰教授长期致力于基因编辑和人类疾病相关研究。在体内基因编辑方面，1）开发了生殖细胞特异性的CRISPR/Cas9系统实现高效可遗传的体内基因编辑和多基因同时敲除；2）开发了高效体内基因激活系统flySAM，实现多基因同时激活。在高通量基因编辑方面，1）开发并利用高通量基因编辑筛选系统，鉴定到影响神经发育和调控神经系统疾病致病基因的功能性非编码调控序列；2）首次构建了高通量Prime Editing筛选系统，实现在单碱基水平解析基因调控序列和疾病相关遗传变异的功能。实验室以神经系统疾病和癌症为核心，综合利用基因编辑，高通量CRISPR筛选，干细胞诱导分化等技术，致力于疾病分子机制的解析和治疗策略的开发。主要研究方向包括，1）疾病相关遗传变异、非编码调控序列、风险基因的功能解析；2）基于iPSC/ESC的细胞诱导分化系统及疾病模型的构建与应用；3）高通量、高精度基因编辑系统的开发及应用。

Dr. Ren focuses on genome editing and human diseases. In the area of in vivo genome editing, he developed a germline-specific CRISPR/Cas9 system that enables efficient knockout of single and multiple genes, and an efficient transcriptional activation system, flySAM, which allows simultaneous activation of multiple genes. In the field of high-throughput genome editing, he developed and applied high-throughput CRISPR screening methods to identify functional non-coding regulatory sequences. In addition, he established a high-throughput Prime Editing system, PRIME, enabling functional analysis of human genome at single-nucleotide resolution. Dr. Ren's lab focuses on neurological diseases and cancers. The main research directions include: 1. Functional characterization of disease-associated genetic variants, non-coding regulatory elements, and risk genes; 2. Development and application of iPSC/ESC-based cell differentiation systems and disease models; 3. Development and application of high-throughput, high-precision genome editing technologies.

代表论文 Selected Publications

1. **Ren X***, Yang H*, Nierenberg JL, *et al*. High-throughput PRIME-editing screens identify functional DNA variants in the human genome. ***Molecular Cell*** (Cover story). 2023 Dec 21;83(24):4633-4645.
2. **Ren X**#, Takagi MA, Shen Y#. Efficient bi-allelic tagging in human induced pluripotent stem cells using CRISPR. ***STAR Protocols***. 2023 Mar 17;4(1):102084.
3. **Ren X**, Wang M, Li B, *et al*. Parallel characterization of cis-regulatory elements for multiple genes using CRISPRpath. ***Science Advances***. 2021 Sep 17;7(38):eabi4360.
4. Jia Y*, Xu RG*, **Ren X***, Ewen-Campen B*, Rajakumar R, *et al*. Next-generation CRISPR/Cas9 transcriptional activation in Drosophila using flySAM. ***PNAS***. 2018 May 1;115(18):4719-4724.
5. **Ren X***, Yang Z*, Xu J*, Sun J*, Mao D*, *et al*. Enhanced specificity and efficiency of the CRISPR/Cas9 system with optimized sgRNA parameters in Drosophila. ***Cell Reports***. 2014 Nov 6;9(3):1151-62.
6. **Ren X***, Sun J*, Housden BE, *et al*. Optimized gene editing technology for Drosophila melanogaster using germ line-specific Cas9. ***PNAS***. 2013 Nov 19;110(47):19012-7.



帅克 博士

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1990 美国爱因斯坦医学院 博士
1990 - 1994 美国洛克菲勒大学James E. Darnell 实验室 博士后
1994 美国加州大学洛杉矶分校（UCLA）助理教授
2000 美国加州大学洛杉矶分校终身副教授
2004 - 2021 美国加州大学洛杉矶分校终身正教授
2021- 至今 南京大学现代生物研究院 终身正教授 特聘研究员 博导

主要研究领域与方向 Main Research Fields

帅克教授致力于原创性、引领性研究，是著名的JAK-STAT 信号传导通路的主要发现人之一。帅克实验室首次发现干扰素信号调控中一个重要蛋白质是具有特异性DNA识别功能的转录因子，并将其正式命名为STAT, 及STAT/JAK信号通路。他的实验室首先发现并命名了PIAS家族蛋白，为临床治疗和药物开发提供了崭新的途径。帅克教授目前的主要研究兴趣是探索肿瘤和免疫疾病的分子调控机制，并开展创新型生物医药的转化研究。

代表论文 Selected Publications

1. Chung, C.D., Liao, J., Liu, B., Rao, X., Jay, P., Berta, P., **Shuai, K.** (1997). Specific inhibition of Stat3 signal transduction by PIAS3. ***Science*** 278:1803-1805.
2. Liu, B., Yang, Y., Chernishof, V., Ogorzalek Loo, R., Jang, H., Tahk, S., Yang, R., Mink, S., Schultz, D. Bellone, C., Loo, J. **Shuai, K**. (2007). Pro-Inflammatory Stimuli Induce IKKα-Mediated Phosphorylation of PIAS1 to Restrict Inflammation and Immunity. ***Cell*** 129:903-914.
3. Liu, B., Tank, S., Yee, K., Fan, G., **Shuai, K**. (2010). The ligase PIAS1 restricts natural regulatory T-cell differentiation by epigenetic repression. ***Science*** 330:521-525.
4. Liu, B., Yee, K.M., Tahk S., Mackie R., **Shuai, K**. (2014). PIAS1 SUMO ligase regulates the self-renewal and differentiation of hematopoietic stem cells. ***EMBO J*** 33:101-113. (highlighted on the journal cover and by a featured review article in the same issue)
5. Yee, K.M., Shuai, R.W., Liu, B., Huynh, C.A., Niu, C., Lee, H.R., Lee, M.S., Wen, J., Zou, J., Wu, J., **Shuai, K.** (2021). TET1 controls Cxcl1 induction by DNA demethylation and promotes neutrophil recruitment during acute lung injury. ***bioRxiv*** doi: 2021.09.07.459280.



孙同玉 博士

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Laboratory of non-coding genome

非编码基因组的调控及功能

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2013 - 2018　中科院上海营养与健康研究所 细胞生物博士

2019 - 2024　美国杜克大学 博士后

2025 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导（待公示）

2013 - 2018　Shanghai Institute of Nutrition and Health, Ph.D.

2019 - 2024　Duke University, Postdoctoral Fellow

2025 -　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

非编码基因组（如转座子、增强子和绝缘子等）占据了人类DNA的98%序列。孙同玉教授实验室运用蛋白组学、转录组学、表观基因组学、三维基因组学和生物信息学等相关技术手段，解析非编码基因组在人类胚胎干细胞和肠癌中的活性调控机制。同时，利用体外定向诱导分化、类器官培养和转基因小鼠模型，进一步探究其在胚胎干细胞命运决定和肠癌发生发展中的功能。具体研究方向和内容包括：

1）人类胚胎干细胞中转座子的转录活性调控及其功能

2）转座子、增强子及绝缘子等在肠癌中的功能及其调控

3） LINE-1在肠癌中转座机制

The non-coding genome (such as transposable elements, enhancers, and insulators) accounts for 98% of the human DNA sequence. Dr. Tongyu Sun's laboratory employs proteomics, transcriptomics, epigenomics, 3D genomics, and bioinformatics to dissect the regulatory mechanisms of non-coding genome activity in human embryonic stem cells and colon cancer. In addition, through in vitro directed differentiation, organoid culture, and transgenic mouse models, the lab further investigates the functional roles of the non-coding genome in embryonic stem cell fate determination and the development of colon cancer. Research directions include: 1) Transcription regulation and function of transposable elements in human embryonic stem cells; 2) Functional roles and regulatory mechanisms of transposable elements, enhancers, and insulators in colon cancer; 3) Mechanisms of LINE-1 transposition in colon cancer.

代表论文 Selected Publications

1. **Sun, T.,** Xu, Y., Angel, N., Meng, Z., Varghese, S., & Diao, Y. Transposable Elements as Mechano-Response Enhancer Elements in Controlling Human Embryonic Stem Cell Fate. (Nature Cell Biology, accepted)

2. Zhao, S., Lu, J., Pan, B., Fan, H., Byrum, S. D., Xu, C., Kim, A., Guo, Y., Kanchi, K. L., Gong, W., **Sun, T.,** Storey, A. J., Burkholder, N. T., Mackintosh, S. G., Kuhlers, P. C., Edmondson, R. D., Strahl, B. D., Diao, Y., Tackett, A. J., Raab, J. R., … Wang, G. G. (2023). TNRC18 engages H3K9me3 to mediate silencing of endogenous retrotransposons. Nature, 623(7987), 633–642.

3. **Sun, T.,** Xu, Y., Xiang, Y., Ou, J., Soderblom, E. J., & Diao, Y. (2023). Crosstalk between RNA m6A and DNA methylation regulates transposable element chromatin activation and cell fate in human pluripotent stem cells. Nature genetics, 55(8), 1324-1335.

4. Wei, X., Xiang, Y., Peters, D. T., Marius, C., **Sun, T.,** Shan, R., Ou, J., Lin, X., Yue, F., Li, W., Southerland, K. W., & Diao, Y. (2022). HiCAR is a robust and sensitive method to analyze open-chromatin-associated genome organization. Molecular cell, 82(6), 1225–1238.e6.



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2014 – 2017　韩国忠北国立大学 生殖生物学博士

2017 – 2020　美国约翰霍普金斯大学医学院 博士后

2020 – 2025　新加坡国立大学力生物学研究所 高级研究员

2025 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导（待公示）

2014 – 2017　Chungbuk National University, Ph.D.

2017 – 2020　The Johns Hopkins University School of Medicine, Postdoctoral Fellow

2020 – 2025　National University of Singapore, Senior Research Fellow

2025 -　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

汪海洋教授长期致力于卵母细胞及早期胚胎发育的前沿研究，特别关注年龄相关的卵子质量下降及生育力衰退的机制，近几年取得了多项创新性成果：（1）首次证实年轻卵泡微环境可以恢复老龄卵母细胞的发育潜力，为延长女性生育寿命带来新希望（*Nature Aging*, 2024，cover story），该研究还获得 *Nature* 及 *Nature Aging* 的专题报道并引发广泛关注；（2）揭示了卵母细胞成熟过程中纺锤体迁移的新机制 (*Current Biology*, 2022)，为提高卵子质量及成熟率提供了新思路；（3）发现了卵子受精过程中的纺锤体旋转机制（*Science Advances*，2020），为提升卵子受精率提供了新的策略。这些突破性发现不仅深化了对卵母细胞成熟和受精过程的理论认知，还为治疗与年龄相关的女性不孕症提供了全新的干预策略，具有重要的临床转化潜力。相关研究成果在国际学术界及公众媒体中获得了广泛关注，被The Straits Times、NUS News、BioArt、科学网 和 生物谷 等国际及国内主流媒体广泛报道。研究成果已申请3项国际专利。应邀担任Cells杂志特刊编辑。

Dr. Wang has long been dedicated to cutting-edge research on oocyte and early embryonic development, with a particular focus on the mechanisms underlying age-related decline in oocyte quality and female fertility. In recent years, he has made several innovative breakthroughs: (1) he was the first to demonstrate that a young follicular microenvironment can restore the developmental potential of aged oocytes, offering new hope for extending female reproductive longevity; this study was featured as the cover story in *Nature Aging* (2024) and received special highlights in *Nature* and *Nature Aging*, attracting widespread attention; (2) he uncovered a novel mechanism of spindle migration during oocyte maturation (*Current Biology*, 2022), providing new insights into improving oocyte quality and maturation rates; and (3) he identified the mechanism of spindle rotation during fertilization (*Science Advances*, 2020), which may offer new strategies to enhance fertilization success. These groundbreaking discoveries have not only deepened theoretical understanding of oocyte maturation and fertilization but also opened new avenues for interventions in age-related female infertility, with strong potential for clinical translation.

代表论文 Selected Publications (#co-first author; *corresponding author)

1. **Wang, H.,*** Huang, Z., Shen, X., Lee, Y., Song, X., Shu, C., Wu, L.H., Pakkiri, L.S., Lim, P.L., Zhang, X., Drum, C.L Zhu, J., Li, R.,* (2024). Rejuvenation of aged oocyte through exposure to young follicular microenvironment. **Nature Aging** 4, 1194-1210.
   Nature highlight: https://doi.org/10.1038/d41586-024-02872-x
   Nature Aging highlight: https://doi.org/10.1038/d41586-024-02872-x
   Nature Aging Cover story.
2. **Wang, H.,#** Hu, J.,# Yi, K., Ma, Z., Song, X., Lee, Y., Kalab, P., Bershadsky, A.D., Miao, Y., and Li, R.* (2022). Dual control of formin-nucleated actin assembly by the chromatin and ER in mouse oocytes. **Current Biology** 32, 4013-4024 e4016.
3. **Wang, H.,#** Li, Y.,# Yang, J., Duan, X., Kalab, P., Sun, S.X.,* and Li, R.* (2020). Symmetry breaking in hydrodynamic forces drives meiotic spindle rotation in mammalian oocytes. **Science Advances** 6, eaaz5004.
4. **Wang, H.,** Choe, M.H., Lee, I.W., Namgoong, S., Kim, J.S., Kim, N.H.,* and Oh, J.S.* (2017). CIP2A acts as a scaffold for CEP192-mediated microtubule organizing center assembly by recruiting Plk1 and aurora A during meiotic maturation. **Development** 144, 3829-3839.
5. **Wang, H.,** Guo, J., Lin, Z., Namgoong, S., Oh, J.S.,* and Kim, N.H.* (2017). Filamin A is required for spindle migration and asymmetric division in mouse oocytes. **FASEB J** 31, 3677-3688.



王刚 博士

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2008 - 2012	南京大学	学士
2012 - 2014	香港科技大学	硕士
2014 - 2018	香港科技大学	博士
2018 - 2019	香港科技大学	博士后
2019 - 2025	哈佛大学医学院	博士后
2025 - 至今	南京大学现代生物研究院 助理教授 研究员 博导（待公示）	

2008 - 2012	Nanjing University, Bachelor.
2012 - 2014	Hong Kong University of Science and Technology, MSc
2014 - 2018	Hong Kong University of Science and Technology, Ph.D
2018 - 2019	Hong Kong University of Science and Technology, Postdoctoral Fellow
2019 - 2025	Harvard Medical School, Postdoctoral Fellow
2025 -	Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

王刚教授的研究专注于组织驻留调节性T细胞（Regulatory T Cells, Tregs）、组织特异性间充质基质细胞（Mesenchymal Stromal Cells, mSCs）和干细胞在维持生理稳态、组织修复以及代谢调控中的功能及机制。运用单细胞测序、多组学分析、CRISPR基因编辑等技术，结合小鼠模型以及患者样本，主要专注于免疫-基质细胞互作在以下方面的研究：1）研究组织驻留的免疫细胞与基质细胞互作在肥胖、肿瘤恶病质等代谢疾病中的作用及分子机制。2）深入研究T细胞和组织特异性基质细胞在自身免疫性疾病（如系统性红斑狼疮）中脏器受累的作用及潜在治疗靶点。3）探索肠道菌群及其代谢物通过脂肪组织中的免疫和基质细胞影响代谢疾病和自身免疫病的机制。

Dr. Wang's research focuses on the function and mechanisms of tissue-resident regulatory T cells (Tregs), tissue-specific mesenchymal stromal cells (mSCs), and stem cells in maintaining physiological homeostasis, tissue repair, and metabolic regulation. Utilizing single-cell sequencing, multi-omics analysis, CRISPR gene editing, and other advanced technologies, combined with mouse models and patient samples, his work primarily investigates immune-stromal cell interactions in the following areas: 1) Examining the role and molecular mechanisms of immune-stromal cell interactions in metabolic diseases such as obesity and cancer cachexia. 2) In-depth study of T cells and tissue-specific stromal cells in organ involvement in autoimmune diseases (e.g., systemic lupus erythematosus) and identification of potential therapeutic targets. 3) Exploring how gut microbiota and their metabolites influence metabolic and autoimmune diseases through immune and stromal cells in adipose tissue.

代表论文 Selected Publications

1. **Wang, G., Muñoz-Rojas, A.R., Spallanzani R.G., Franklin R.A., Benoist, C., and Mathis, D. (2024) Adipose-tissue regulatory T cells promote metabolic health by restraining differentiation of adipocytes from stromal precursors.** ***Immunity*** **57, 1345–1359.**
2. **Hanna, B.S., Wang, G., Galván-Peña, S., Mann, A.O., Ramirez, R.N., Muñoz-Rojas, A.R., Smith, K., Wan, M., Benoist, C., and Mathis, D. (2023). The gut microbiota promotes distal tissue regeneration via RORγ+ regulatory T cell emissaries.** ***Immunity*** **56, 829–846.**
3. **Wang, G., Zhu, H., Situ, C., Han, L., Yu, Y., Cheung, T.H., Liu, K., and Wu, Z. (2018). p110α of PI3K is necessary and sufficient for quiescence exit in adult muscle satellite cells.** ***The EMBO Journal*****, e98239. 10.15252/embj.201798239.**
4. **An, Y.*, Wang, G.*, Diao, Y.*, Long, Y., Fu, X., Weng, M., Zhou, L., Sun, K., Cheung, T.H., Ip, N.Y., et al. (2017). A Molecular Switch Regulating Cell Fate Choice between Muscle Progenitor Cells and Brown Adipocytes.** ***Developmental Cell*** **41, 382-391.e5. 10.1016/j.devcel.2017.04.012. (*Equal contribution)**



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2016 - 2022　美国加州大学圣地亚哥分校 博士后

2022 - 2023　美国加州大学圣地亚哥分校 助理项目科学家

2023 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导

2010 - 2016　Shanghai Jiao Tong University, Ph.D.

2016 - 2022　University of California San Diego, Postdoctoral Fellow

2022 - 2023　University of California San Diego, Assistant Project Scientist

2023 -　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

王高伟教授建立了定量分析基因调控网络的计算和理论框架，并用其研究了网络结构对于细胞稳定性、适应性以及命运调控的影响。在计算和理论工作基础上，结合多组学数据（基因组、表观遗传组、转录组、蛋白组等）、生物信息、机器学习、数学模型和网络分析等，对白血病、肝癌和糖尿病发生发展过程和分子机制进行了系统和定量研究。在前期工作基础上，实验室将继续结合实验、计算和理论，以多学科交叉融合的方式研究白血病、糖尿病等复杂疾病的核心分子机制，以及预防和治疗策略。具体研究方向和内容包括：1）复杂疾病发生发展过程中细胞属性变化的规律和核心分子机制；2）环境和遗传因素对细胞中与疾病发生发展相关的核心分子机制的影响；3）利用数学模型和机器学习，定量地预测复杂疾病的预防和治疗策略，并用试验检验预测。

Dr. Wang has established a computational and theoretical framework for the quantitative analysis of gene regulatory networks and explored the impact of network topology on cell stability, adaptation, and fate determination. Moreover, he has combined multi-omics data, bioinformatics, machine learning, mathematical model, and network analysis to uncover the molecular basis underlying the development of leukemia, liver cancer, and diabetes. The Wang lab will continue to use a multidisciplinary approach combining experimental, computational, and theoretical methods to understand complex diseases. Research directions include: 1) identifying the molecular mechanisms of cell identify changes during disease progression; 2) quantifying the impact of environmental and genetic factors on disease-relevant gene regulatory programs; and 3) using mathematical models and machine learning to quantitatively predict prevention and treatment strategies for diseases and experimentally validate the predictions.

代表论文 Selected Publications

1. **Wang, G.***, Chiou, J.*, Zeng, C.*, Miller, M., Matta, I., Han, J. Y., Kadakia, N., Okino, M., Beebe, E., Mallick, M., Camunas-Soler, J., et al. (2023). Integration genetics with single-cell multiomic measurements across disease states identifies mechanisms of beta cell dysfunction in type 2 diabetes. ***Nature Genetics*** (In press, *Equal contribution).
   Zhu, H.*, **Wang, G.***, Nguyen-Ngoc, K. V., Kim, D., Miller, M., Goss, G., Kovsky, J., Harrington, A., Saunders, D., Hopkirk, A., Melton, R., et al. (2023). Understanding cell fate acquisition in stem cell-derived pancreatic islets using single-cell multiome-inferred regulomes. ***Developmental Cell*** 58:727-743 (*Equal contribution).
2. **Wang, G.**, Luo, X., Liang, Y., Kaneko, K., Li, H., Fu, X. D., & Feng, G. S. (2019). A tumorigenic index for quantitative analysis of liver cancer initiation and progression. ***Proceedings of the National Academy of Sciences*** 116:26873-26880.
3. **Wang, G.**, Su, H., Yu, H., Yuan, R., Zhu, X., & Ao, P. (2016). Endogenous network states predict gain or loss of functions for genetic mutations in hepatocellular carcinoma. ***Journal of The Royal Society Interface*** 13:20151115.
4. **Wang, G.**, Zhu, X., Hood, L., & Ao, P. (2013). From Phage lambda to human cancer: endogenous molecular-cellular network hypothesis. ***Quantitative Biology*** 1:32-49.



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2011 - 2016	中国科学院水生生物研究所 水生生物学博士
2018 - 2022	美国北卡大学教堂山分校 博士后
2022 - 2023	美国北卡大学教堂山分校 Research Associate
2023 - 至今	南京大学现代生物研究院 助理教授 特聘研究员 博导

2011 - 2016	Institute of Hydrobiology, Chinese Academy of Sciences, PhD
2016 - 2022	UNC at Chapel Hill, Postdoctoral Fellow
2022 - 2023	UNC at Chapel Hill, Research Associate
2023 -	Nanjing University Institute of Modern Biology, Assistant Professor (Tenure Track), Principal Investigator (PI), Ph.D. Supervisor(to be Announced)

主要研究领域与方向 Main Research Fields

王俊实验室将围绕表观调控因子以及转录因子介导基因异常表达的调控机制开展研究，利用多组学技术（2D和3D基因组学）、蛋白质谱技术、CRISPR-sgRNA 筛选以及单细胞测序等技术，以小鼠为模型，结合临床样本以探索和开发癌症治疗的新的靶点以及新的治疗策略。具体研究方向：剖析和靶向表观遗传因子及转录因子介导的基因转录调控机制；探究表观遗传因子介导的肿瘤耐药性机制研究；探索表观遗传因子及转录因子介导的肿瘤免疫及机制；靶向表观遗传因子及转录因子癌症治疗药物开发。

Wang laboratory will be focused on the mechanism study of epigenetic regulators and transcription factors in mediating abnormal gene transcription expression, taking advantage of multi-omics technology (2D and 3D genomics), protein mass-spec, CRISPR-sgRNA screening and single-cell sequencing Technology, using mice models, combined with clinical samples to explore and develop new therapeutic strategies for cancer treatment. Specific research directions as follows: 1), dissect and target the gene transcription regulation mechanism mediated by epigenetic factors and transcription factors (TFs); 2), explore the mechanism of tumor drug resistance mediated by epigenetic factors; 3), explore the crosstalk of tumor Immunity with epigenetic factors and TFs; 4), developing new drug targeting epigenetic factors and TFs for cancer therapy.

代表论文 Selected Publications

1. **Wang J***, Yu X*, Gong W, Liu X, Park KS, Ma A, Tsai YH, Shen Y, Onikubo T, Pi WC, Allison DF, Liu J, Chen WY, Cai L, Roeder RG, Jin J#, Wang GG#. (2022). EZH2 noncanonically binds cMyc and p300 through a cryptic transactivation domain to mediate gene activation and promote oncogenesis. ***Nat Cell Biol*** 24:384-399.
2. Liu X*, **Wang J***, Gong W, Zhao S, Zhang C, Wu Q, Jain K, Boyer JA, Guo Y, Rodriguez J, Li M, Uryu H, Liao C, Hu L, Zhou J, Shi X, Tsai YH, Yan Q, Luo W, Zhang Q, Strahl BD, Kriegsheim A, Wang GG, Baldwin AS, Zhang Q#. (2022). A Role for Histone H3 Proline 16 Hydroxylation in Regulation of Mammalian Gene Expression. ***Nature Genetics*** 54:1721-1735.
3. **Wang J***, Park KS, Yu X, Gong W, Earp HS, Wang GG, Jin J, Cai L. (2022). A cryptic transactivation domain of EZH2 binds AR and its splice variant promoting oncogene activation and prostate tumorigenesis. tumorous transformation. ***Nucleic Acids Research*** 50:10929-10946.
4. Yu X*, **Wang J***, Gong W, Ma A, Shen Y, Zhang C, Liu X, Cai L, Liu J, Wang GG#, Jin J#. (2023). Dissecting and Targeting Noncanonical Functions of EZH2 in Multiple Myeloma via an EZH2 Degrader. ***Oncogene*** 42:994-1009.
5. **Wang J**, Wang GG. (2020). No Easy Way Out for EZH2: Its Pleiotropic, Noncanonical Effects on Gene Regulation and Cellular Function. ***Int J Mol Sci*** 21:9501.



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2011 中科院上海药物研究所 药理学博士

2011 - 2012 上海药明康德新药研发有限公司 高级研究员

2012 - 2016 美国加州大学圣地亚哥分校医学院 博士后

2016 - 2021 中国药科大学 教授 博导

2016 “江苏省特聘教授”

2017 “江苏省六大高峰人才” “江苏省双创团队核心成员”

2021 - 至今 南京大学现代生物研究院 助理教授 特聘研究员 博导

2011 Shanghai Institute of Materia Medica (SIMM), Chinese Academy of Sciences, Ph.D.

2011 - 2012 WuXi AppTec, Senior Investigator

2012 - 2016 School of Medicine, University of California, San Diego (UCSD), Postdoctoral Fellow

2016 - 2021 China Pharmaceutical University, Professor, Ph.D. Supervisor

2016 “Distinguished professor of Jiangsu Province”

2017 “Six talent peaks in Jiangsu Province”, “Key member of dual initiative team in Jiangsu Province”

2021 - Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

王丽蕊教授实验室目前主要研究方向：1. 围绕"肠-肝轴"进行研究，重点关注肠道微生物、代谢产物、肠上皮细胞屏障等对慢性肝病，包括酒精性肝病、非酒精性脂肪性肝病等疾病的调控作用，并研究这种调控作用的生物学机制；2. 致力于慢性肝病的创新靶点鉴定及治疗药物研发；3. 探索药物-微生物-宿主的交互作用在个性化药物治疗中的应用。

Dr. Wang’s laboratory’s researches focus on: 1. The regulatory role of gut microbiota, metabolites, and intestinal epithelial barrier in chronic liver diseases, including alcoholic liver disease, non-alcoholic fatty liver disease, and explore its biological mechanism in the context of the "gut-liver axis“; 2. Identifying the innovative targets of chronic liver diseases and discovering new therapeutic drugs; and 3. Exploring the application of drug-microbe-host interactions in personalized medication.

代表论文 Selected Publications

1. Li, Y., Zhao, D., Qian, M., Liu, J., Pan, C., Zhang, X., Duan, X., Zhang, Y., Jia, W., **Wang, L.** (2022). Amlodipine, an anti-hypertensive drug, alleviates non-alcoholic fatty liver disease by modulating gut microbiota. ***British Journal of Pharmacology*** 179:2054-2077.
2. Qian, M., Liu, J., Zhao, D., Cai, P., Pan, C., Jia, W., Gao, Y., Zhang, Y., Zhang, N., Zhang, Y., Zhang, Q., Wu, D., Shan, C., Zhang, M., Schnabl, B., Yang, S., Shen, X., **Wang, L.** (2022). Aryl hydrocarbon receptor deficiency in intestinal epithelial cells aggravates alcohol-related liver disease. ***Cellular and Molecular Gastroenterology and Hepatology*** 13:233–256. (highlighted by an editorial in the same issue)
3. **Wang, L.**, Mazagova, M., Pan, C., Yang, S., Brandl, K., Liu, J., Reilly, S.M., Wang, Y., Miao, Z., Loomba, R., Lu, N., Guo, Q., Liu, J., Yu, R.T., Downes, M., Evans, RM., Brenner, D.A., Saltiel, A.R., Beutler, B., Schnabl, B. (2019). YIPF6 controls sorting of FGF21 into COPII vesicles and promotes obesity. ***Proceedings of the National Academy of Sciences of the United States of America*** 116:15184-15193.
4. **Wang, L.**, Fouts, D.E., Stärkel, P., Hartmann, P., Chen, P., Llorente, C., DePew, J., Moncera, K., Ho, S.B., Brenner, D.A., Hooper, L.V., Schnabl, B. (2016). Intestinal REG3 lectins protect mice from alcohol-induced steatohepatitis by reducing mucosa-associated microbiota and preventing bacterial translocation. ***Cell Host & Microbe*** 19:227-239. (Highlighted by Nature Reviews Gastroenterology &Hepatology)
5. **Wang, L.**, Hartmann, P., Haimerl, M., Bathena, S., Sjöwall, C., Almer, S., Alnouti, Y., Hofmann, A., Schnabl, B. (2014). Nod2 deficiency protects mice from cholestatic liver disease by increasing renal excretion of bile acids. ***Journal of Hepatology*** 60:1259-1267.



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肿瘤微环境和免疫细胞治疗实验室

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2007 - 2012	中国科学院上海生命科学研究院 生物化学与分子生物学博士
2013 - 2016	美国耶鲁大学医学院 博士后
2016 - 2021	美国耶鲁大学医学院 副研究员
2021 - 2023	美国罗格斯大学新泽西肿瘤研究所 助理教授
2023 - 至今	南京大学现代生物研究院 助理教授 特聘研究员 博导

2007 - 2012	Chinese Academy of Sciences Shanghai Institutes for Biological Sciences, Ph.D.
2013 - 2016	Yale University School of Medicine, Postdoctoral Fellow
2016 - 2021	Yale University School of Medicine, Associate Research Scientist
2021 - 2023	Rutgers Cancer Institute of New Jersey, Rutgers University, Assistant Professor
2023 -	Nanjing University Institute of Modern Biology, Assistant Professor (Tenure Track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

肖倩教授致力于肿瘤免疫微环境机制研究以及开发新一代基于T细胞的免疫疗法，取得了一系列原创特色的研究成果：鉴定出了一个新的肿瘤微环境中的免疫抑制蛋白DKK2，并开发了针对DKK2的新型免疫疗法；揭示了抗原激活CAR的分子机制，为CAR-T的设计提供了新思路。肖倩教授以及团队已建立了新型体外筛选肿瘤特异TCR的细胞平台，将致力于开发拥有自主知识产权的实体肿瘤TCR-T细胞免疫疗法与探索TCR-T细胞治疗抗药性的分子机制，为实体瘤的TCR-T细胞免疫治疗提供新策略。实验室研究方向为：1. 肿瘤免疫微环境，肿瘤细胞对TCR-T细胞治疗抗药性的机制研究；2. 筛选肿瘤特异的TCR，改进和优化TCR-T的设计，开发新型TCR-T细胞疗法。

The research interests of Dr. Xiao have been focusing on tumor immune microenvironment and the development of novel immunotherapies. Her major scientific achievement includes: (1) identifying a previously unknown tumor immune-suppressive mechanism mediated by DKK2 and developing an anti-DKK2 immunotherapy ; (2) establishing a “size exclusion” model to explain how antigen recognition activates CAR-T cells. Dr. Xiao has established an *in vitro* platform for searching tumor-reactive TCRs. By applying it, she has identified two high-affinity TCRs that recognize renal cell carcinoma; TCR-T cells carrying these TCRs can effectively kill cancer cells. Xiao laboratory is committed to 1）inventing novel TCR-T-based cell therapies for the Chinese population, 2）developing strategies to sensitize tumor cells to T-cell killing, and 3）identifying novel targets for new immunotherapies.

代表论文 Selected Publications

1. **Qian Xiao,** Jibo Wu, Wei-Jia Wang, Shiyang Chen, Yingxia Zheng, Xiaoqing Yu, Katrina Meeth, Mahnaz Sahraei, Alfred LM Bothwell, Lieping Chen, Marcus Bosenberg, Jianfeng Chen, Veronika Sexl, Le Sun, Lin Li, Wenwen Tang, and Dianqing Wu. (2018). DKK2 imparts tumor immunity evasion through β-catenin-independent suppression of cytotoxic immune-cell activation. ***Nature Medicine*** 24:262-270.
2. **Qian Xiao,** Xinyan Zhang, Liqun Tu, Jian Cao, Christian S. Hinrichs, and Xiaolei Su. (2022). Size-dependent activation of chimeric antigen receptor. ***Science Immunology*** 7:eabl3995. **Journal Cover Article.**
3. Jiajia Hu, Zhengting Wang, Zhengxi Chen, Ao Li, Jing Sun, Minghua Zheng, Jibo Wu, Tianli Shen, Ju Qiao, Lin Li, Biao Li, Dianqing Wu, and **Qian Xiao#**. (2020). DKK2 blockage-mediated immunotherapy enhances anti-angiogenic therapy of Kras mutated colorectal cancer. ***Biomedicine & Pharmacotherapy*** 127:110229. (#corresponding author)
4. **Qian Xiao,** Ceara K McAtee, Xiaolei Su. (2022). Phase separation in immune signaling. ***Nature Reviews Immunology*** 22:188-199.
5. Xiao Hu, Zhengxi Chen, Zheng Wang, and **Qian Xiao#**. (2022). Cancer evolution: Special focus on the immune aspect of cancer. ***Seminars in Cancer Biology*** 86:420-435. (#corresponding author)



熊理凤 博士

Lifeng Xiong, Ph.D.

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肠道粘膜免疫及相关疾病发病机制实验室

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2010 - 2015	香港大学医学院，博士
2017 - 2021	美国佛罗里达大学，博士后
2021 - 2023	美国佛罗里达大学，助理研究员
2023 -	南京大学现代生物研究院 助理教授 特聘研究员 博导

2010 - 2015	University of Hong Kong, PhD
2017 - 2021	University of Florida, Postdoctoral Associate
2021 - 2023	University of Florida, Assistant Scientist
2023 -	Nanjing University Institute of Modern Biology, Assistant Professor (Tenure Track), Principal Investigator (PI), Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

熊理凤教授长期致力于肠道淋巴细胞维系肠道稳态、应对病原菌感染引发的肠炎中的功能及调控机制的探索。近年来主要研究成果包括：（1）率先发现肠道先天淋巴细胞ILC3s在沙门氏菌感染过程中新颖的互作模式和独特功能，为ILC3s的功能研究提供了新视角和借鉴作用；（2）原创性阐明Ahr-Foxp3-RORγt轴精细调控Treg细胞中大肠归巢受体GPR15表达的关键功能，从而系统解析了机体控制Treg细胞迁移至大肠发挥作用的分子机制，为炎症性肠病等肠道炎症的临床治疗提供了潜在靶点；（3）鉴定肠道病原菌中新的毒力基因及其相应的致病功能，为研究其引发肠炎的致病机理奠定了良好基础。实验室将继续致力于深入剖析肠道淋巴细胞与肠道健康的关系，为肠道病原菌感染等引发的炎症疾病的治疗提供潜在靶点和新策略。

Dr. Xiong has focused on determining the molecular mechanisms that regulate the development and function of T lymphocytes and innate lymphoid cells (ILCs), the host immune system-microbe/pathogen interactions at the mucosal interface, and identifying new bacterial virulence factors modulating host immune responses, including: 1. the first to identify a biphasic response of ILC3s to *Salmonella infection*; 2. Discovered the critical role of aryl hydrocarbon receptor (Ahr), together with RORγt and Foxp3, for finely regulating the expression of colon homing receptor GPR15, thereby controlling the gut homing of $CD4^+$ T cells; 3. characterized new virulence factors in intestinal pathogens and explored the related pathogenesis. Xiong laboratory will continue determining the molecular mechanisms of mucosal lymphocytes maintaining intestinal homeostasis.

代表论文 Selected Publications

1. **Xiong, L.,** Wang, S., Dean, J.W., Oliff, K.N., Jobin, C., Curtiss, R 3rd., and Zhou, L. (2022). Group 3 innate lymphoid cell pyroptosis represents a host defense mechanism against *Salmonella* infection. ***Nature Microbiology*** 7:1087-1099.
2. **Xiong, L.,** Dean, J.W., Fu, Z., Oliff, K.N., Bostick, J.W., Ye, J., Chen, Z.E., Mühlbauer, M., and Zhou, L. (2020). Ahr-Foxp3-RORγt axis controls gut homing of $CD4^+$ T cells by regulating GPR15. ***Science Immunology*** 5:eaaz7277.
3. **Xiong, L.,** and Zhou, L. (2023). 'Silent' flagellin drives immunotolerance to commensal bacteria. ***Trends in Immunology*** 44(3):150-152.
4. **Xiong, L.,** Chan, E., Teng, J.L.L., Liu, S., Lau, S.K.P., and Woo, P.C. (2019). Malate-dependent carbon utilization enhances central metabolism and contributes to biological fitness of *Laribacter hongkongensis* via CRP regulation. ***Frontiers in Microbiology*** 10:1991.
5. Lau, S.K.#, Zhang, L.#, Luk, H.K.H.#, **Xiong, L.,**#, Peng, X., Li, K.S.M., He, X., Zhao, P.S., Fan, R.Y.Y., Wong, A.C.P., Ahmed, S.S., Cai, J.P., Chan, J.F.W., Sun, Y., Jin, D., Chen, H., Lau, T.C.K., Kok, R.K.H., Li, W., Yuen, K.Y., and Woo, P.C. (2018). Receptor usage of a novel bat lineage C betacoronavirus reveals evolution of MERS-related coronavirus spike proteins for human DPP4 binding. ***The Journal of Infectious Diseases*** 218:197-207. (#equal contributions).



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2010 - 2015 浙江大学 生物化学与分子生物学博士

2015 - 2017 浙江大学药学院 博士后

2017 - 2021 耶鲁大学医学院 博士后

2021 - 2022 耶鲁大学医学院 副研究科学家

2022 - 至今 南京大学现代生物研究院 助理教授 特聘研究员 博导

2010 - 2015 Zhejiang University, Biochemistry and Molecular Biology, Ph.D.

2015 - 2017 Zhejiang University, Postdoctoral Fellow

2017 - 2021 Yale University, Postdoctoral Associate

2021 - 2022 Yale University, Associate Research Scientist,

2022 - Now Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

癌症是影响全人类健康的重大疾病，为此，叶露鹏实验室开发和运用前沿的基因编辑技术并结合免疫学，肿瘤生物学，分子生物学，细胞生物学、生物信息学等学科来开发肿瘤免疫治疗和细胞治疗的新靶点和新策略并深入解析其潜在的分子机制，已在国际顶尖/一流期刊发表多项原创性成果。实验室目前主要研究方向为：（1）寻找潜在的免疫治疗新靶点并揭示其分子机制，提高免疫治疗效果。（2）嵌合抗原受体T（CAR-T）细胞的遗传改造，增强CAR-T细胞对实体瘤的治疗效果。（3）开发全新的免疫遗传改造技术，用于高效生产治疗性免疫细胞并用于临床癌症的治疗。

Cancer is a leading cause of death worldwide. Ye lab focuses on developing and applying genome editing technologies and combining multi-disciplines such as immunology, cancer biology, molecular biology, cell biology, and bioinformatics to jointly identify new targets for advancing cancer immunotherapy and cell therapy. Dr. Ye's laboratory has published several original papers in prestigious journals such as *Cell, Nature Biotechnology, Cell Metabolism, Nature Biomedical Engineering, Nature Methods, and Cell Discovery*. The main research interests of Ye laboratory are: 1. Identify potential immunotherapy targets and reveal their underlying mechanisms to improve immunotherapy efficacy; 2. CAR-T genetic engineering to enhance solid tumor therapeutic efficacy; and 3. Developing brand new immune engineering technologies to high-efficiently produce therapeutic immune cells for clinic applications.

代表论文 Selected Publications

1. **Ye L.,** Lam S., Yang L., Suzuki K., Zou Y., Lin Q., Zhang Y., Clark P., Peng L., Chen S.†.(2023) AAV-mediated delivery of a Sleeping-Beauty transposon and an mRNA-encoded transposase for the engineering of therapeutic immune cells. ***Nature Biomedical Engineering*** (In press)
2. **Ye, L.,*** Park, J.J.,* Peng, L.,* Yang, Q.,* Chow, R.D., Dong, M., Lam, S., Guo, J., Tang, E., Zhang, Y., Wang, G., Dai, X., Du, Y., Kim, H., Cao, H., Errami, Y., Clark, P., Bersenev, A., Montgomery, R.R., Chen, S. (2022). A genome-scale gain-of-function CRISPR screen in CD8 T cells identifies proline metabolism as a means to enhance CAR-T therapy. ***Cell Metabolism*** 34:595-614. (*Contributed equally)
3. **Ye, L.,*** Park, J.J.,* Dong, M.B.,* Yang, Q., Chow, R.D., Peng, L., Du, Y., Guo, J., Dai, X., Wang, G., Errami, Y., Chen, S. (2019). In vivo CRISPR screening in CD8 T cells with AAV-Sleeping Beauty hybrid vectors identifies membrane targets for improving immunotherapy for glioblastoma. ***Nature Biotechnology*** 37:1302-1313. (*Contributed equally)
4. Dong, M.B.,* Wang, G.,* Chow, R.D.,* **Ye, L.,*** Zhu, L., Dai, X., Park, J.J., Kim, H.R., Errami, Y., Guzman, C.D., Zhou, X., Chen, K.Y., Renauer, P.A., Du, Y., Shen, J., Lam, S.Z., Zhou, J.J., Lannin, D.R., Herbst, R.S., Chen, S. (2019). Systematic Immunotherapy Target Discovery Using Genome-Scale In vivo CRISPR Screens in CD8 T Cells. ***Cell*** 178:1189-1204. (*Contributed equally)
5. Chow, R.D.,* Wang, G.,* **Ye, L.,*** Codina, A., Kim, H.R., Shen, L., Dong, M.B., Errami, Y., Chen S. (2019). In vivo profiling of metastatic double knockouts through CRISPR-Cpf1 screens. ***Nature Methods*** 16:405-408. (*Contributed equally)



袁素敬博士

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2010 - 2017　中国科学院上海生物化学与细胞生物学研究所 生物学博士

2018 – 2021　中山大学肿瘤防治中心 博士后

2021 - 2025　美国St. Jude儿童研究医院 博士后

2025 - 至今　南京大学现代生物研究院 助理教授 特聘研究员 博导

2010 - 2017　University of Chinese Academy of Sciences, Ph.D.

2018 - 2021　Sun Yat-sen University Cancer Center , Postdoctoral Fellow

2021 - 2025　St. Jude Children's Research Hospital, Postdoctoral Fellow

2025 -　Institute of Modern Biology, Nanjing University, Assistant Professor (Tenure-track), Principal Investigator (PI), Ph.D. Supervisor

主要研究领域与方向 Main Research Fields

袁素敬博士利用Cas9/CRISPR技术开展系统性代谢文库筛选，首次揭示靶向VDAC2可显著增强IFNγ介导的肿瘤细胞死亡和炎症反应，显著提升免疫检查点阻断疗法的治疗效果。这项创新性研究阐明了肿瘤杀伤与炎症反应协同调控在激活强效抗肿瘤免疫中的关键机制，为改善临床免疫治疗策略提供了新思路。此外，袁素敬博士在利用CRISPR筛选技术发掘病毒感染及肿瘤微环境中调控$CD8^+$ T细胞分化与耗竭的关键检查点分子，以及营养竞争调控树突状细胞抗肿瘤免疫等方向具有浓厚的兴趣，相关工作已发表于Nature等权威期刊。

袁素敬博士实验室围绕"肿瘤微环境中肿瘤细胞-免疫细胞的相互作用调控"这一重大科学问题，结合临床数据、生物信息学分析和CRISPR筛选，系统性、多层次地从展开研究。具体研究方向包括但不限于：1. CRISPR筛选免疫微环境中细胞因子诱导肿瘤细胞死亡与炎症反应的基因调控网络; 2. CRISPR筛选调控CD8+ T细胞持久性及功能的基因网络。

Dr. Yuan has utilized Cas9/CRISPR technology to conduct systematic metabolic library screening and revealed that targeting VDAC2 can significantly enhance IFN-γ-mediated tumor cell death and inflammatory response, thereby markedly improving the therapeutic efficacy of immune checkpoint blockade therapies. This study elucidates a key mechanism in which tumor cell killing and inflammatory response are co-regulated to activate potent anti-tumor immunity, providing new insights for improving clinical immunotherapy strategies. In addition, Dr. Yuan is interested in using CRISPR screening technology to identify key checkpoint molecules that regulate $CD8^+$ T cell differentiation and exhaustion during viral infection and within the tumor microenvironment, as well as exploring how nutritional competition affects dendritic cell-mediated anti-tumor immunity.

Dr. Yuan's lab will continue to focus on "Tumor-Immune cell interactions in the tumor microenvironment." Research directions include: 1. CRISPR screening to uncover the gene regulatory networks involved in cytokine-induced tumor cell death and inflammatory responses within the immune microenvironment; 2. CRISPR screening to identify gene networks that regulate the persistence and function of $CD8^+$ T cells.

代表论文 Selected Publications

1. **Sujing Yuan***, Renqiang Sun*, *et al.* (2025) VDAC2 loss elicits tumor destruction and inflammation for cancer therapy. ***Nature*** 640，1062-1071. *Equal contributors.

2. **Sujing Yuan,** *et al.* (2023) Early immune pressure makes tumors metabolically stronger. ***Cell Metabolism*** 35 (1), 3-5.

3. Peipei Zhou*, Hao Shi*, Hongling Huang*, Xiang Sun, **Sujing Yuan**, *et al.* (2023) Single-cell CRISPR screens in vivo map T cell fate regulomes in cancer. ***Nature*** 624 (7990), 154-163. *Equal contributors.

4. Chuansheng Guo; Zhiyuan You; Hao Shi; Yu Sun; Xingrong Du; Gustavo Palacios, Cliff Guy, **Sujing Yuan**, e*t al.* (2023). SLC38A2 and glutamine signalling in cDC1s dictate anti-tumour immunity. ***Nature*** 620 (7972), 200-208.

5. Ao Guo*; Hongling Huang*; Zhexin Zhu; Mark J. Chen; Hao Shi; **Sujing Yuan**, e*t al.* (2022) cBAF complex components and MYC cooperate early in $CD8^+$ T cell fate. ***Nature*** 607 (7917), 135-141. *Equal contributors.



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2006-2010．四川大学 生物学学士

2010-2016. 复旦大学 发育遗传学博士

2016-2017. 美国科罗拉多大学博尔德校区 研究助理

2017-2025. 美国德州大学西南医学中心 博士后

2025-至今. 南京大学现代生物研究院 助理教授 特聘研究员 博导（待公示）

2006–2010．Sichuan University，Bachelor of Science in Biology

2010–2016．Fudan University Ph.D.

2016–2017．University of Colorado Boulder, USA，Research Assistant

2017–2024．UT Southwestern Medical Center, USA，Postdoctoral Researcher

2025–Present. Institute of Modern Biology, Nanjing University, Assistant Professor / Principal investigator（PI）/ Ph.D. Supervisor (to be announced)

主要研究领域与方向 Main Research Fields

核糖体是细胞内最丰富的细胞器，但是目前对核糖体的研究主要集中在研究其在合成蛋白质中的功能。从能量效率进化角度分析，细胞内如此丰富的核糖体很可能具有大量尚未被发现的功能。朱博士致力于发现核糖体的新功能。朱博士最具标志性的工作是发现核糖体P位tRNA介导的mRNA降解（PTMD）。该研究首次阐明tRNA通过其特异性序列与结构特征招募CCR4-NOT复合体以调控mRNA稳定性。这项发现不仅破解了哺乳动物密码子偏好性影响mRNA稳定性的分子机制，更颠覆了传统教科书对tRNA功能的认知，被《PNAS》专评誉为“概念性革新”。在这项研究中，朱博士建立了一套高效的哺乳动物体外翻译系统，为研究核糖体功能提供了便捷和可靠的平台。此外，朱博士通过全基因组筛选发现溶酶体功能、铁稳态及氧化损伤通过调节核糖体回收效率影响mRNA代谢，为相关疾病机制研究提供了新方向。目前，朱博士作为独立PI，带领团队专注于探究生命体最基础的本质规律，运用多组学分析、全基因组遗传筛选等前沿技术，系统解析核糖体的新功能。朱博士的主要研究方向为: （1）鉴定与核糖体结合的因子（蛋白质/非编码RNA/代谢物），并解析这些因子与核糖体结合后的功能。（2）系统研究核糖体在不同生理状态下的动态组分变化，并阐明其功能意义。（3）基于基础研究成果，开发针对核糖体相关疾病的新治疗策略。

Ribosomes are the most abundant organelles in cells, yet current research primarily focuses on their canonical role in protein synthesis. From an evolutionary energy-efficiency perspective, the sheer abundance of ribosomes suggests they likely harbor numerous undiscovered functions. Professor Dr. Zhu is dedicated to uncovering these novel roles of ribosomes.

His most landmark work is the discovery of P-site tRNA-mediated mRNA decay (PTMD), a mechanism by which ribosomes regulate mRNA stability. This study revealed, for the first time, that tRNAs recruit the CCR4-NOT complex via their specific sequence and structural features to control mRNA turnover. This breakthrough not only deciphered the molecular basis of codon preference-dependent mRNA stability in mammals but also overturned the textbook understanding of tRNA functions. The work was hailed as a "conceptual innovation" in a PNAS commentary. As part of this research, Dr. Zhu developed a high-efficiency mammalian in vitro translation system, providing a robust platform for studying ribosome functions. Additionally, through genome-wide screening, Dr. Zhu demonstrated that lysosomal activity, iron homeostasis, and oxidative stress influence mRNA metabolism by modulating ribosome recycling efficiency, opening new avenues for understanding related disease mechanisms.

Dr. Zhu’s current research focus include: (1) Identifying ribosome-associated factors (proteins/non-coding RNAs/metabolites) and characterizing their functional roles upon ribosome binding. (2) Systematically investigating dynamic compositional changes of ribosomes under varying physiological states and elucidating their functional implications. (3) Translating fundamental discoveries into novel therapeutic strategies for ribosome-related diseases.

代表论文 Selected Publications

1. 1. Zhu, X., Cruz, VE., Zhang, H., Erzberger, JP., and Mendell, JT. (2024). Specific tRNAs promote mRNA decay by recruiting the CCR4-NOT complex to translating ribosomes. Science, 386 (6724), eadq8587
2. 3. Zhu, X., Zhang, H., Mendell, JT. (2020). Ribosome recycling by ABCE1 links lysosomal function and iron homeostasis to 3′ UTR-directed regulation and nonsense-mediated decay. Cell Reports, 32(2):107895.
3. 4. Zhu, X., Xie, S., Xu, T., Wu, X., and Han, M. (2017). Rasal2 deficiency reduces adipogenesis and occurrence of obesity-related disorders. Molecular Metabolism, 6(6):494-502.

人才招聘

TALENT RECRUITMENT



人才招聘
TALENT RECRUITMENT

准/长聘教授 招聘

现代生物院面向全球招聘从事生物医学前沿基础研究的准聘和长聘教授【独立学术带头人(Principal Investigator, PI)】，研究方向包括但不限于：计算机模拟和生物人工智能，感染、免疫与代谢机理，癌症和神经退行性疾病等重大疾病分子机制，基因编辑、创新型药物研发和精准医学等。

准聘教授/PI（Tenure-track）应聘条件

- 有完整出色的博士后训练经历
- 有国际一流水平的创新研究成果
- 能独立开展创新型研究

长聘教授/PI（Tenured）应聘条件

- 在国际一流大学/研究所任终身或长聘教授
- 系统性地做出国际一流水平的创新性研究成果

IMB has the opening positions for tenure-track and tenured professors (Principal Investigator) at the rank of Assistant, Associate, and Full professor. The research areas include, but not limited to, computational modeling, machine learning in biology, infection, tumor immunology and metabolism, neurodegenerative diseases, genome editing, precision medicine, and innovative drug discovery. The applicant who applies for the position of tenure-track Assistant/Associate Professor should have outstanding postdoctoral training and have made important discoveries in his/her research field. The applicants applying for the position of tenured Professor should be a tenured professor in an internationally renowned university/institute and a leading investigator in his/her research field.

博士后招聘

现代生物研究院的各位准聘/长聘 (tenure-track/tenured) 教授的各个实验室均在招聘博后、副研等科研岗位，可登录现代生物研究院官网查看准/长聘系列人才队伍，欢迎感兴趣者发送邮件至下列教授邮箱。

The laboratories at IMB have the opening positions for postdoctoral fellows and research associates. The applicants should send their applications to the email addresses listed below.

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南京文脉

NANJING THE CITY WE PROUD OF





始建于南宋乾道四年（1168年），中国历史上规模最大、影响最广的科举考场。中国南方地区开科取士之地，其规模之大、占地之广居中国各省贡院之冠，创中国古代科举考场之最。仅明清时期全国就有半数以上官员出自江南贡院，被誉为“中国古代官员的摇篮”。

Jiangnan Gongyuan was founded in the fourth year of the Southern Song Dynasty (1168) and is the largest and most influential examination hall for officials in Chinese history. In the Ming and Qing dynasties only, more than half of the officials in the country came from Jiangnan Gongyuan, known as "the cradle of ancient Chinese officials."

中国近代伟大的民主革命先行者孙中山先生的陵寝及其附属纪念建筑群，中山陵前临平川，背拥青嶂，东毗灵谷寺，西邻明孝陵，整个建筑群依山势而建，由南往北沿中轴线逐渐升高，主要建筑有博爱坊、墓道、陵门、石阶、碑亭、祭堂和墓室等，排列在一条中轴线上，体现了中国传统建筑的风格。中山陵建筑融汇中国古代与西方建筑之精华，庄严简朴，别创新格，有着极高的艺术价值，被誉为“中国近代建筑史上第一陵”。

The Mausoleum is the final resting place of Dr. Sun Yat-sen, the pioneer of the great democratic revolution in modern China. The entire building complex of the Mausoleum faces Pingchuan, back against Qingzhuang, east of Linggu Temple, west of Ming Xiaoling, built from south to north along the central axis of the gradually rising mountainous terrain. The Mausoleum architecture integrates the essence of ancient Chinese and Western architecture, solemn and simple, unique style, has a great artistic value, known as "the first mausoleum in the history of modern Chinese architecture".



南京总统府是中国近代建筑遗存中规模最大、保存最完整的建筑群，中国近代历史的重要遗址。1912年1月1日，孙中山在此宣誓就职中华民国临时大总统，辟为大总统府，后为南京国民政府总统府。

The Nanjing Presidential Palace is the largest and most complete architectural complex in modern China, having an important position in modern Chinese history. It became the Grand Presidential Palace, where Sun Yat-sen was sworn in as the Provisional President of the Republic of China on January 1, 1912, and later the Presidential Palace of the National Government in Nanjing.





中国共产党代表团梅园新村纪念馆位于南京市梅园新村。由国共和平谈判期间中共代表团办事处旧址、国共南京谈判史料陈列馆、周恩来铜像、周恩来图书馆等组成，属于近现代历史遗迹及革命纪念建筑物。

The Meiyuan Xincun Memorial Hall of the Communist Party of China delegation locates at Meiyuan Xincun, Nanjing. It is composed of the former site of the CPC delegation office during the peace talks between the KUOMINTANG and the Communist Party of China, the Exhibition Hall of Historical Materials of the Nanjing Negotiations, the Bronze Statue of Zhou Enlai and his Library, listed as modern historical sites and revolutionary memorial buildings.

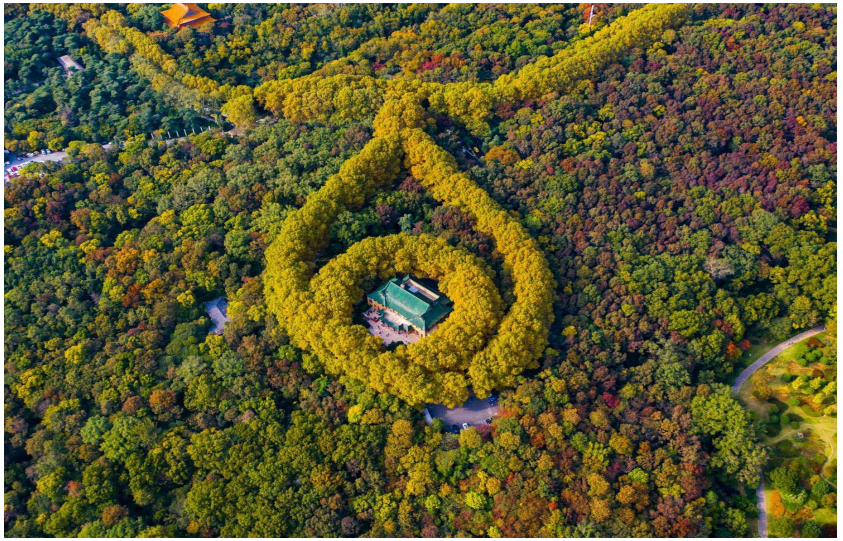


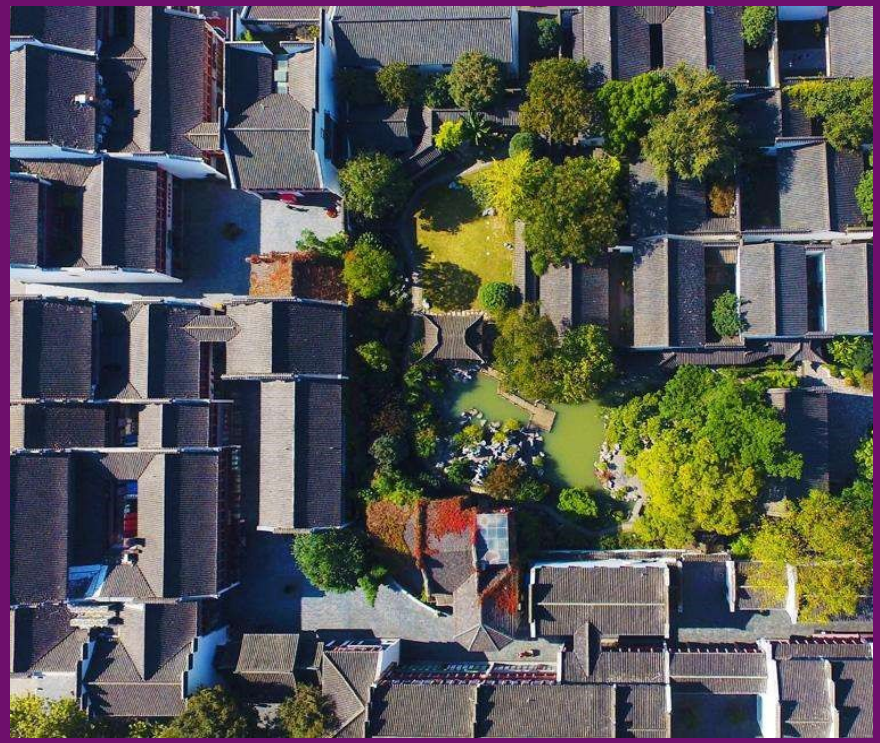
中山陵音乐台是中国20世纪建筑遗产。音乐台建筑风格为中西合璧，在利用自然环境，以及平面布局和立面造型上，充分吸收古希腊建筑特点，而在照壁、乐坛等建筑物的细部处理上，则采用中国江南古典园林的表现形式，从而创造出既有开阔宏大的空间效果，又有精湛雕饰的艺术风范，达到了自然与建筑的完美和谐统一。

The Music Hall in Sun Yat-sen Mausoleum area is a 20th-century architectural heritage of China. The music hall combined the architectural style of Chinese and Western, in the use of the natural environment, as well as the layout and façade modeling, it fully absorbed the architectural characteristics of ancient Greek, while in the detailed treatment of buildings such as wall screen and music altar, it adopted the expression of classical gardens in Jiangnan, China, thereby creating an artistic style that has both open and grand space and exquisite carving, achieving the perfect harmony and unity of nature and architecture.

南京的美，始终离不开浪漫的“梧桐大道”，也与许多美丽的爱情故事相关。民间传说蒋介石知道宋美龄喜欢法国梧桐，遂令在其住所周围种满了法国梧桐，并以梧桐树为丝带，以住所为璀璨的宝石，形成一条呈爱心形的，独一无二的绝世“最美项链“，也就是我们今天看到的“美龄宫”。

The beauty of Nanjing will not be true without the romantic "Wutong Avenue", and many other love stories. It was said that when Chiang Kai-shek pursued Soong Mei-ling, he knew that she liked the French sycamore very much. Soon after the marriage, Chiang Kai-shek ordered the planting of French plane trees around Song Meiling's residence, using the plane trees as ribbons and the residence as a shining gem to form a love-shaped, unique necklace, known as the "Meiling Palace".





南京市甘熙宅第占地面积14060平方米，是南京地区收藏、陈列民俗物品，研究民风民俗，弘扬民间优秀传统文化的专门机构，于2010年建立中国首家民俗、非遗“双博馆”，是全国重点文物保护单位。始建于清嘉庆年间，俗称“九十九间半”，与明孝陵、明城墙并称为南京明清三大景观。

Nanjing “Gan Xi House”, occupying 14,060 square meters, is a special institute in Nanjing for collecting, displaying and studying folk customs and carrying forward the folk excellent traditional culture. It was established as China's first folk customs and intangible cultural heritage "double museum" in 2010, listing as a national key cultural relics protection site. Originally built in the Qing Jiaqing period known as "ninety-nine and a half rooms". Gan Xi Mansion together with the Ming Tomb and the Ming City Wall are known as the three main Ming and Qing landscapes of Nanjing.