

## 欧阳明星博士

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欧阳明星，博士，教授，1976年生。2005年在中国科学院（北京分区）生物物理研究所博士毕业。2006年起先后在伊利洛伊大学香槟分校(UIUC)和加州理工学院(Caltech)做博士后，2011年起先后在耶鲁大学(Yale)和加州大学圣地亚哥分校(UCSD)做助理研究员。2017年加入常州大学生物医学工程与健康科学研究院，2019年获评江苏省特聘教授。在生物医学工程领域有10多年的研究经验，重点方向是细胞分子生物学、生物力学和合成生物学，在显微镜活细胞成像(live cell imaging)和荧光共振能量转移技术(FRET)领域积累了丰富的经验。

博士毕业后至今，在SCI期刊发表论文约30多篇，h-index: 16，其中发表主要一作研究论文的杂志有Nature Communications, PNAS (2008, 2012), Cancer Research, J Biol. Chem., ACS Sensors。在FRET分子探针研发领域和理解细胞内信号转导、细胞定向迁移中的分子极性机制等方面做出了贡献；长程生物力作用的研究工作(PNAS, 2012)具有一定开拓性，被Nature Materials和PNAS杂志报道，后续也得到相关领域一些科学家的研究关注。近年来，先后在第八届世界生物力学大会(2018, 爱尔兰)、全国生物力学大会(2018, 西安)、全国生物医学工程大会(2019, 济南)、第十届国际先进材料大会(2019, 新加坡)、第一届生物力学与医学工程国际学术会议(2019, 加州圣地亚哥)作口头报告。

主要研究领域：生物医学工程、细胞生物学、分子生物学、生物力学、FRET技术、合成生物学。

在制药与生命科学学院的主要硕士招生方向：生物工程、制药工程、生物化学。

### 主持的科研和人才项目：

1. 国家自然科学基金面上项目，11872129，“细胞长程力在上皮管状结构自组装中的作用及其信号转导机制研究”，2019/01-2022/12，63万元，主持。
2. 江苏省科技厅自然科学基金面上项目，SBK2018021371，“棕榈酰化修饰对细胞内Fyn激酶活性的影响及其机制研究”，2018/07-2021/06，10万元，主持。
3. 江苏省教育厅人才项目，特聘教授，2019.07-2022.06，130万元，主持。

### 主要科研成果：

1. Wang J\*, Guo J, Che B, Ouyang M<sup>#</sup>, Deng L<sup>#</sup> (2020) Cell motion-coordinated fibrillar assembly of soluble collagen I to promote MDCK cell branching formation. *BiochemBiophys Res Commun* 2020 Jan 26.

2. Mingxing Ouyang\*, Rongxue Wan, Qin Qin, Qin Peng, Pengzhi Wang, Jenny Wu, Molly Allen, Yiwen Shi, Shannon Laub, Linhong Deng, Shaoying Lu\*, Yingxiao Wang\*(2019) Sensitive FRET biosensor reveals Fyn kinase regulation by sub-membrane localization. *ACS Sensors*4(1): 76-86.
3. Mingxing Ouyang\*, Shaoying Lu\*, Yingxiao Wang<sup>#</sup> (2014) Genetically Encoded Fluorescent Biosensors for Live-cell Imaging of MT1-MMP Protease Activity. *Methods in Molecular Biology* 2014;1071:163-74. doi: 10.1007/978-1- 62703-622-1\_13.
4. Mingxing Ouyang\*, Shaoying Lu\*, Chin-En Chen, Taejin Kim, Deborah Leckband, Fei Wang, Albert B. Reynolds, Martin A. Schwartz<sup>#</sup>, Yingxiao Wang<sup>#</sup> (2013) N-cadherin regulates spatially polarized signals through distinct p120ctn and  $\beta$ -catenin-dependent signaling pathways. *Nature Communications*, 4:1589. doi: 10.1038/ncomms2560.
5. Chin-Lin Guo\*<sup>#</sup>, Mingxing Ouyang\*, Jiun-Yann Yu, Jordan Maslov, Andrew Price, and Chih-Yu Shen (2012) Feature Article: Long-range mechanical force enables self-assembly of epithelial tubular patterns. *Proc Natl AcadSci USA*. 109(15):5576-82.  
 同行的报道和评述:  
 “Secrets of tubule engineering by epithelial cells.” Commentary in *Proc Natl AcadSci USA*. (2012) 109 (18): 6790- 6791.  
 “Morphogenesis: Laying down the tracks.” News and Views in *Nature Materials* (2012) 11, 490-492.
6. Mingxing Ouyang\*, He Huang\*, Nathan Shaner, Albert Remacle, Sergey Shiryayev, Alex Strongin, Roger Y. Tsien, Yingxiao Wang<sup>#</sup> (2010) Simultaneous Visualization of Pro-tumorigenic Src and MT1-MMP Activities with Fluorescence Resonance Energy Transfer. *Cancer Research* 70(6):2204-12.
7. Mingxing Ouyang\*, Jie Sun, Shu Chien<sup>#</sup>&Yingxiao Wang<sup>#</sup> (2008) Determination of hierarchical relationship of Src and Rac at subcellular locations with novel FRET biosensors. *Proc Natl AcadSci USA* 105(38): 14353-8.
8. Mingxing Ouyang\*, Shaoying Lu, Xiao-Yan Li, Jing Xu, JihyeSeong Ben N. G. Giepmans, John Y.-J. Shyy, Stephen J. Weiss, and Yingxiao Wang<sup>#</sup> (2008) Visualization of Polarized Membrane Type 1 Matrix Metalloproteinase (MT1-MMP) Activity in Live Cells by Fluorescence Resonance Energy Transfer (FRET) Imaging. *J Biological Chemistry* Vol. 283, 17740- 17748.
9. Mingxing Ouyang\*, Xun Shen<sup>#</sup> (2006) Critical role of ASK1 in the 6-hydroxydopamine-induced apoptosis in human neuroblastoma SH-SY5Y cells. *J Neurochemistry*, Vol. 97, 234-244.

(注释: \* 一作或并列一作; # 通信作者)

10. Rongxue Wan, Jenny Wu, Mingxing Ouyang, Lei Lei, Jiaming Wei, Qin Peng, Reed Harrison, Yiqian Wu, Binbin Cheng, Kaitao Li, Cheng Zhu, Liling Tang\*, Shaoying Lu\*, Yingxiao Wang\*(2019) Biophysical Basis underlying Dynamic Lck Activation Visualized by ZapLck

FRET Biosensor. *Science Advances*, 2019, 5(6): 0-eaau2001.

11. Qin, Qin; Laub, Shannon; Shi, Yiwen; Ouyang, Mingxing; Peng, Qin; Zhang, Jin; Wang, Yingxiao; Lu, Shaoying\* Fluocell for Ratiometric and High-Throughput Live-Cell Image Visualization and Quantitation *Frontiers in Physics*, 2019, 7: 0-154. SCIE.
12. Pengzhi Wang#, Jing Liang#, Linda Z. Shi, Yi Wang, Ping Zhang, Mingxing Ouyang, Daryl Preece, Qin Peng, Lunan Shao, Jason Fan, Jie Sun, Shawn S. Li, Michael W. Berns<sup>1</sup>, Huimin Zhao\* and Yingxiao Wang\* (2018) Visualizing spatiotemporal dynamics of intercellular mechanotransmission upon wounding. *ACS Photonics*, 5(9): 356576.
13. Jie Sun, Lei Lei, Chih-Ming Tsai, Yi Wang, Yiwen Shi, Mingxing Ouyang, Shaoying Lu, Jihye Seong, Tae-Jin Kim, Pengzhi Wang, Min Huang, Xiangdong Xu, Victor Nizet, Shu Chien & Yingxiao Wang (2017) Engineered proteins with sensing and activating modules for automated reprogramming of cellular functions. *Nature Communication* 2017 Sep 7;8(1):477. doi: 10.1038/s41467-017-00569-6.
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15. Chen Sun, Mingxing Ouyang, Zhenning Cao, Sai Ma, Hamzeh Alqublan, Nammalwar Sriranganathan, Yingxiao Wang and Chang Lu (2014) Electroporation-delivered fluorescent protein biosensors for probing molecular activities in cells without genetic encoding. *Chem. Commun.*, 2014, 50, 11536-11539 DOI: 10.1039/C4CC04730C.
16. Shaoying Lu, Jihye Seong, Yi Wang, Shiou-chi Chang, John Paul Eichorst, Mingxing Ouyang, Julie Y.-S. Li, Shu Chien & Yingxiao Wang (2014) Decipher the dynamic coordination between enzymatic activity and structural modulation at focal adhesions in living cells. *Scientific Report* 2014 Jul 24;4:5756. doi: 10.1038/srep05756.
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18. Chin-Lin Guo, Mingxing Ouyang, Jiun-Yann Yu (2013) Long-range mechanical force enables self-assembly of epithelial tubules. *Mechanics of Biological Systems and Materials*, Volume 5, Chapter 3:15-21.
19. Tyler D. Ross, Brian G. Coon, Sangeok Youn, Nicolas Baeyens, Keiichiro Tanaka, Mingxing Ouyang, Martin A. Schwartz. Integrins in Mechanotransduction. *Current Opinions in Cell Biology* 2013 Oct; 25(5):613-8. doi: 10.1016/j.ceb.2013.05.006.
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发明专利

31. Yingxiao Wang, Mingxing Ouyang. “Detection of Specific Binding Reactions using Magnetic Labels”, Patent No.: US 8,192,947 B2.
32. Yingxiao Wang, Shaoying Lu, Mingxing Ouyang. “FRET-Based Membrane Type 1 Matrix Metalloproteinase Biosensors and Methods for Using the Same”, Patent No.: US 2011/0171675 A1.