Yuting Wu, Ph.D.

Research Associate | Early Career Fellow
University of Texas at Austin
Austin, TX, 78712

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ORCID: 0000-0003-3196-5916

PROFESSIONAL PROFILE

Chemistry–neuroscience researcher innovating nucleic acid platforms to uncover how molecular imbalances drive brain vulnerability in neurodegenerative disease.

EDUCATION

Ph.D., Cell Biology, Peking University 2017
Dissertation: Establishing a new model for mechanosensory hair cell damage and regeneration
Advisors: Prof. Zuoyan Zhu and Dr. Dong Liu

B.S., Biology, Sichuan University 2011
Honors Thesis: Characterizing factors involved in zebrafish sex determination
Advisors: Dr. Dong Liu and Dr. Yajun Wang

ACADEMIC APPOINTMENTS

Research Associate | Research Fellow, The University of Texas at Austin 2021-present
Department of Chemistry | Advisor: Dr. Yi Lu

Postdoctoral Researcher, University of Illinois at Urbana-Champaign 2018-2021
Department of Chemistry | Advisor: Dr. Yi Lu

Research Assistant, Peking University 2011-2017
School of Life Sciences | Advisor: Prof. Zuoyan Zhu and Dr. Dong Liu

Teaching Assistant, Peking University 2012
Applied Bioinformatics Course | Advisor: Prof. Jingchu Luo

Class Teacher, Peking University 2012-2016
Class of 2012, School of Life Sciences

SELECTED FELLOWSHIPS, HONORS, AND AWARDS

Early Career Scholars Fellowship, The University of Texas at Austin 2024-2025
(~4% postdoctoral researchers awarded campus-wide)

Provost's Early Career Fellow, The University of Texas at Austin 2023
(~4% postdoctoral researchers awarded campus-wide)

Graduation Award for Leadership in Service, Peking University 2016
(Top 0.1% campus-wide)

Travel Award, Peking University 2015
(For presenting at the Association for Research in Otolaryngology 38th Annual MidWinter Meeting in Baltimore, MD, USA)

Teaching Excellence Award, Peking University 2014, 2016
(Awarded twice)

Academic Excellence Award, Peking University 2014, 2015
(Awarded twice, top 3% of students)

Graduate Student Special Merit Scholarship (Category I, ¥8,000), Peking University 2014-2016
(Awarded three times)

Oral Presentation Award, State Key Laboratory 2014

Suzhou Industrial Park Scholarship (¥5,000), Peking University 2013

Peking University Scholarship (¥51,000/year) 2011-2017

Comprehensive Capability Award for College Students, Sichuan Province 2011
(Top 0.1% of students for academic and extracurricular excellence)

Outstanding Undergraduate Thesis, Sichuan University 2011

Outstanding Undergraduate Award, Sichuan University 2011
(Top 3% of graduating seniors)

Top 100 Students, Sichuan University 2010
(Top 100 out of 40,000 students for academics, research, service, and leadership)

Sichuan University Scholarship (¥1000) 2008-2010
(Awarded three times)

RESEARCH EXPERIENCE

The University of Texas at Austin | Research Associate & Research Fellow (2021-present)
Advisor: Dr. Yi Lu

- Developed the *first DNAzyme-based fluorescent sensors* distinguishing Fe^{2+}/Fe^{3+} in live tissues, revealing redox imbalance near amyloid plaques in AD models and enabling their adoption in studies of cognition, glial regulation, and neuroinflammation.
- Pioneered DNAzyme-seq, a method *linking intracellular metal ion states with single-cell transcriptomes*, enabling discovery of ion-regulated gene networks that shape neuronal stress responses and vulnerability in brain disease.
- Advanced DNA-based sensing platforms for ion and metabolite detection (Zn^{2+}, Mg^{2+}, Cu^{2+}/Cu^{+}, Li^{+}, K^{+}), including a light-up aptamer system for live-cell metabolite imaging and ATP detection across the blood–brain barrier, providing new tools to investigate brain energy metabolism and metal ion dysregulation in neurological disease.

These works resulted in 5 first-author papers in *Science Advances*, *JACS*, *Angew. Chem. Int. Ed.*, 13 co-author publications, and 5 filed US/international patent applications. Initiated 15+ collaborations applying these technologies to models of cognitive aging, neurodegeneration, cancer, and psychiatric disease, contributing to $5.5M in external funding.

University of Illinois at Urbana-Champaign | Postdoctoral Researcher (2018-2021)
Advisor: Dr. Yi Lu

- Developed computational pipelines to identify DNAzymes and aptamers from next-generation sequencing datasets.
- Discovered selective DNA aptamers through SELEX for detecting metabolites and biomolecules relevant to health and disease.

These works resulted in co-authored papers in *Science Advances* and *JACS*.

Peking University | Graduate Research Assistant (2011-2017)
Advisors: Dr. Dong Liu and Prof. Zuoyan Zhu

- Discovered a new regeneration pathway in zebrafish sensory hair cells: direct transdifferentiation regulated by Notch–Wnt crosstalk, previously unreported in this model.
- Identified a transcription factor required for Wnt activation after injury and showed that different types of cell damage induce distinct regenerative responses.

These works contributed to co-author papers in *J. Neurosci.* and *Ann Anat*.

RESEARCH FUNDING

Alzheimer's Association Research Fellowship for All (AARFA) — *Delineating Iron Redox Balance in Neuronal Vulnerability and Memory Decline*. **Submitted (September 2025), under review.**

Sichuan University — Designated Funding for Undergraduate Research (¥1500)
Investigate ABA Sensitivity and Drought Tolerance in Arabidopsis (2009–2010)

- Awarded to a team of five undergraduates; served as team leader, coordinating project design, experiments, and reporting, with faculty mentorship.

Contributed to successful NIH, NSF, CPRIT, and Alzheimer's Association proposals (> $5.5M) by drafting sections of proposals, initiating collaborations, leading scientific discussions, mentoring students for data generation, and preparing progress reports.

Federal Grants

- **NIH | MIRA** (PI: Yi Lu, $2.68M, 2021-2026). *Design and Selection of Novel Metalloenzymes for Biocatalysis, Bioimaging, and Genetic Engineering*
  My Role: Designed experiments, drafted research plans, and prepared supporting materials.
- **NSF | RAPID** (PI: Yi Lu, $154k, 2020-2022). *Developing a Novel Biosensor for Rapid, Direct, and Selective Detection of COVID-19 Using DNA Aptamer-Nanopore*
  My Role: Supported proposal drafting.
- **NIH | NCI Supplement** (PI: Boyi *Gan* and Yi Lu, $177k, 2024). *Investigating the role of iron redox dynamics in radiation resistance in esophageal cancer*
  My Role: Proposed iron redox sensing experiments and provided technical support.
- **NSF | DREAM Sentinels** (PI: Hsin-Chih Yeh and Yi Lu, $249k, 2022-2024). *Selection of Aptamers that Target Viral Variants with High Specificity*
  My Role: Proposed experiments, technical support.
- **National Natural Science Foundation of China | Regular Grant** (PI: Dong Liu, 2018-2021). *Establishing a New Model of Mechanosensory Hair Cell Damage/Regeneration*
  My Role: Contributed to conceptualization and proposal drafting.

State Grant

- **Cancer Prevention and Research Institute of Texas** (PI: Yi Lu, $1.05M, 2024-2027). *Deciphering Iron Redox Cycles in Ferroptosis-based Cancer Therapy*
  My Role: Took primary responsibility for leading collaborations, mentoring students, drafting proposal sections and progress reports, and establishing scientific direction for the project.

Private Foundation Grants

- **Allen Distinguished Investigators Award** (PI: Yi Lu: $1.25M, 2022-2025). *Spatial Nutrientomics Based on DNAzyme and DNA Aptamer Sensors*
  My Role: Led conceptualization, writing, submission, and annual reports.
- **The Alzheimer's Association** (PI: Yi Lu: $120K, 2022-2023). *DNAzyme Sensors for Simultaneous Monitoring Redox-Active Metal Ions in Alzheimer's Diseases*
  My Role: Conceptualized research, contributed key ideas, drafted proposal.

Industry-related Non-profit Organization Grant

- **Swine Health Information Center** (PI: Yi Lu, $100K, 2022-2023). Development *of DNA Aptamer-Nanopore Sensors for Direct Detection of Infectious Swine Viruses*
  My Role: Advised junior students on grant writing and refined the proposal.

Seed Grant

- **UT-Austin/UT-MDACC Collaborative Pilot Project Grant** (PI: Yi Lu, 2023). *Deciphering Iron Redox during Ferroptosis in Cancer Biology*
  My Role: Assisted with proposal drafting.

PATENTS

5. Lu, Y.; **Wu, Y.**; *Farrell, A.*; Yang Z.; Ryan Lake. Discovering Native Functional Aptamers and DNAzymes in the Biological System. US Patent Application No. 63/789,205, filed April 15, 2025.
4. Lu, Y.; Yang Z.; *Farrell, A.*; *Pradhan, S.*; **Wu, Y.** "DNAzymes for On-Site Portable Detection of Lithium and Other Metal Ions," US Patent Application No. 63/689,122, filed on August 30, 2024, and International Bureau of WIPO No. PCT/US2025/044204 filed on August 29, 2025.
3. Lu, Y.; Yang Z.; *Shao X.*; **Wu, Y.** "Potassium-specific DNAzymes," US Patent Application No. 63/683,384, filed on August 15, 2024, and International Bureau of WIPO No. PCT/US2025/042206 filed on August 15, 2025.
2. Lu, Y.; **Wu, Y.**; *Van Stappen, J.*; *Kong, L.* "Genetically Encoded DNA Light-Up Sensors," US Patent Application No. 63/667,359, filed on July 3, 2024.
1. Lu, Y.; **Wu, Y.**; Yang Z.; *Lewis W.*; *Van Stappen, J.*; *Shao X.* "DNAzymes for Sensing and Imaging Target Molecules," US patent application No. 63/575,447, filed on April 5, 2024.

PUBLICATIONS

26 papers in total, 6 of which are first or co-first authored, Citations > 649, h-index 13

First-Author Publications

* Denotes co-first authors; *Trainees are underlined and italicized*

5. **Wu, Y.**; Kong, W.; *Van Stappen, J.*; *Kong, L.*; *Huang, Z.*; Yang, Z.; *Kuo, Y.-A.*; Chen, Y.-I.; *He, Y.*, Yeh, H.-C.; Lu, T.; Lu, Y. Genetically Encoded Fluorogenic DNA Aptamers for Imaging Metabolite in Living Cells. ***J. Am. Chem. Soc.*** 2025, 147, 2, 1529–1541 [doi]
   Featured in X-MOL
4. **Wu Y**, Torabi SF, Lake R, Yang Z, Hong S, Yu Z, Mirica LM, Fonken L, Lu Y. Deciphering Iron Redox Changes in Alzheimer's Disease using DNAzyme Sensors that can Simultaneously Monitor Fe^{2+} and Fe^{3+}. ***Alzheimers Dement.*** 2025 Jan 3;20(Suppl 1):e088440. [doi]
3. **Wu, Y.***; *Lewis, W.**; *Wai, J.L.**; Xiong, M.; Zheng, J.; Yang, Z.; Gordon, C.; Lu, Y.; New, S.Y.; Zhang, X.B.; Lu, Y. Ratiometric Detection of Zn^{2+} Using DNAzyme-Based Bioluminescence Resonance Energy Transfer Sensors. ***Chem.*** 2023, 5(3), 1745-1759. [doi] (**Feature Paper**)
2. Xiong, M.*; **Wu, Y.***; Kong, G.; *Lewis, W.*; Yang, Z.; Zhang, H.; Xu, L.; Liu, Y.; Liu, Q.; Zhao, X.; Zhang, X.B.; Lu Y. A Semisynthetic Bioluminescence Sensor for Ratiometric Imaging of Metal Ions In Vivo Using DNAzymes Conjugated to An Engineered Nano-Luciferase. ***Angew. Chem., Int. Ed.*** 2023, e202308086. [doi]
1. **Wu, Y.***; Torabi, S.-F.*; Lake, R. J.*; Hong, S.; Yu, Z.; Wu, P.; Yang, Z.; Nelson, K.; *Guo, W.*; Pawel, G. T.; *Van Stappen, J.*; *Shao, X.*; Mirica, L. M.; Lu, Y. Simultaneous Fe^{2+}/Fe^{3+} Imaging Shows Fe^{3+} over Fe^{2+} Enrichment in Alzheimer's Disease Mouse Brain. ***Sci. Adv.*** 2023, 9 (16), eade7622. [doi]

Featured in 19 news stories in 18 outlets: Neuroscience News, Bionity, News, Redox Medicine, UIUC, Science Daily, Eurekalert, Infobae, SciTechDaily, Alzforum, NewsBeezer, Medical Xpress, Mirage News, The Medical News, Knowledia, Infobae.com, Nouvelles du monde, Bioengineer, Khabar

Co-Author publications

17. Remesal, L.; Sucharov-Costa, J.; **Wu, Y.**; Pratt, K. J.B.; Bieri, G.; Philp, A.; Phan, M.; Aghayev, T.; White, C. W.; Wheatley, E. G.; Zou, B.; Desousa, B. R.; Couthouis, J.; Jian, I. H.; Xie, X. S.; Lu, Y.; Maynard, J. C.; Burlingame, A. L.; Villeda, S. A. Targeting Iron-Associated Protein FTL1 in the Brain of Old Mice Improves Age-Related Cognitive Impairment. ***Nat. Aging***. 2025, [doi].
    Featured in 74 tweeters and 50 news outlets: Science Daily, Medical News, UCSF News, Fight Aging, Citeab, Psypost, Lifespan Research Institute, R Discovery, Mirage News, Health Medici Net, etc.

16. *Guo, W.*; Huang, S.; *Shao, X.*, **Wu, Y.**; Ma, Y.; Lu, S.; Ren, H.; Zhou, X.; Yang, Z.; *Lyu, M*; and Liu, Y. Tandem ssDNA in neutrophil extracellular traps binds thrombin and regulates immunothrombosis. ***PNAS.*** 2025, 122, e2418191122. [doi]

15. Yang, Z.; *Shao, X.*; **Wu, Y.**; *Roy, A.*; *Garcia, E.*; *Farrell, A.*; *Pradhan, S.*; *Guo, W.*; *Gan, H.*; Korkmaz, Z.; Adams, E; and Lu, Y. Decoding Potassium Homeostasis in Cancer Metastasis and Drug Resistance: Insights from a Highly Selective DNAzyme-Based Intracellular K+ Sensor. ***JACS.*** 2025, 147, 18074-18087. [doi]

14. *Zhou, Z.-R.*; Wu, M.-S.; Yang, Z.; **Wu, Y.**; *Guo, W.*; Li, D. -W.; Qian, R. -C.; Lu, Yi. Synthetic transmembrane DNA receptors enable engineered sensing and actuation. ***Nat. Commun.*** 2025, 16, 1464. [doi]

13. Yang, Z.; *Farrell, A.*; *Pradhan, S.*; Zhang, K.H.; *Guo, W.*; **Wu, Y.**; *Shao, X.*; *Roy, A.*; *Garcia, E.*; Lu, Y., On-site Portable Lithium Detection in Mining and Recycling Industries based on a DNAzyme Fluorescent Sensor. ***Angew. Chem. Int. Ed.*** 2024, e202413118. [doi]

12. *Kuo, Y. -A.*; Chen, Y. -I.; Wang, Y.; Korkmaz, Z.; Yonas, S.; *He, Y.*; Nguyen, T. D.; Hong, S.; Nguyen, A. T.; Kim, S.; Seifi, S.; Fan, P. -H.; **Wu, Y.**; Yang, Z.; Liu, H. -W.; Lu, Y.; Ren, P.; Yeh, H.-C. Fluorogenic Aptamer Optimizations on a Massively Parallel Sequencing Platform. ***bioRxiv.*** 2024, Jul 10:2024-07. [doi]

11. *Banik, M.*; Ledray, A.P.; **Wu, Y.**; Lu, Y. Delivering DNA Aptamers Across the Blood–Brain Barrier Reveals Heterogeneous Decreased ATP in Different Brain Regions of Alzheimer's Disease Mouse Models. ***ACS Cent. Sci.*** 2024. [doi]
    Featured in 17 news stories from 15 outlets: Genetic Engineering & Biotechnology News, Science Daily, AZO Sensors, Alzforum, and Noticiasdelaciencia.

10. Qian, R. -C.; Wu, M. -S.; Yang, Z.; **Wu, Y.**; Guo, W.; *Zhou, Z. -R.*; Wang, X.; Li, D. -W.; Lu, Y. Rectifying artificial nanochannels with multiple interconvertible permeability states. ***Nat Commun.*** 2024, 15 (1), 2051. [doi]

9. Qian, R.-C.; *Zhou, Z.-R.*; **Wu, Y.**; Yang, Z.; *Guo, W.*; Li, D.-W.; Lu, Y. Combination Cancer Treatment: Using Engineered DNAzyme Molecular Machines for Dynamic Inter- and Intracellular Regulation. ***Angew. Chem. Int. Ed.*** 2022, *61* (49), e202210935 [doi]
    Featured in Pharma's Almanac

8. Pawel, G. T.; Ma, Y.; **Wu, Y.**; Lu, Y.; Peinetti, A. S. Binding Affinity Measurements Between DNA Aptamers and Their Virus Targets Using ELONA and MST. ***Bio-Protoc.*** 2022, *12* (21), e4548. [doi]

7. McGhee, C. E.*; Yang, Z.*; *Guo, W.**; **Wu, Y.**; *Lyu, M.*; DeLong, C. J.; Hong, S.; Ma, Y.; McInnis, M. G.; O'Shea, K. S.; Lu, Y. DNAzyme-Based Lithium-Selective Imaging Reveals Higher Lithium Accumulation in Bipolar Disorder Patient-Derived Neurons. ***ACS Cent. Sci.*** 2021, 7 (11), 1809–1820. [doi]

Featured in ***ACS Central Science***
Featured in 7 news stories from 7 outlets: Science Daily, Medical Xpress, Mirage News, Laboratory Equipment, Eurekalert, CN-Healthcare, Chemical & Engineering News,

6. Peinetti, A. S.; Lake, R. J.; Cong, W.; Cooper, L.; **Wu, Y.**; Ma, Y.; Pawel, G. T.; Toimil-Molares, M. E.; Trautmann, C.; Rong, L.; Mariñas, B.; Azzaroni, O.; Lu, Y. Direct Detection of Human Adenovirus or SARS-CoV-2 with Ability to Inform Infectivity Using DNA Aptamer-Nanopore Sensors. ***Sci. Adv.*** 2021, *7* (39), eabh2848. [doi]
   Featured in 31 news stories from 29 outlets: ChemistryViews, Bionity.com, VBIO, Innovations Report, Informationsdienst Wissenschaft, Nanowerk, Frankfurter Allgemeine, Infobae, Scitech Daily, Hola Doctor, MedicineNet, Newsmax.com, Drugs.com, Health Day, News Break, USNews.com, WebMD News, Dailyhunt, International Business Times India, MSN, AZO life sciences, AZOSensors, The Medical News, Technology Networks, Bionewscentral, MedicalXpress Chemical and Engineering News, ScienMag, Mirage News.

5. *Lyu, M.*; *Kong, L.*; Yang, Z.; **Wu, Y.**; McGhee, C. E.; Lu, Y. PNA-Assisted DNAzymes to Cleave Double-Stranded DNA for Genetic Engineering with High Sequence Fidelity. ***J. Am. Chem. Soc.*** 2021, *143* (26), 9724–9728. [doi]
   Featured in 2 news stories from 2 outlets: Chemical & Engineering News, Phys.org

4. Qian, R.-C.; *Zhou, Z.-R.*; *Guo, W.*; **Wu, Y.**; Yang, Z.; Lu, Y. Cell Surface Engineering Using DNAzymes: Metal Ion Mediated Control of Cell-Cell Interactions. ***J. Am. Chem. Soc.*** 2021, *143* (15), 5737–5744. [doi]

3. Mi, X.; **Wu, Y.**; Yan, J.; Li, Y.; Shi, J.; Liu, D. Wnt/β-catenin signaling was activated in supporting cells during exposure of the zebrafish lateral line to cisplatin. ***Ann Anat.*** 2019, 226, 48-56. [doi]

2. Wang, J.*; Wu, Y.*; Zhao, F.*; **Wu, Y.**; Dong, W.; Zhao, J.; Zhu, Z.; Liu, D. Fgf-Signaling-Dependent Sox9a and Atoh1a Regulate Otic Neural Development in Zebrafish. ***J. Neurosci.*** 2015, 35 (1), 234–244. [doi] (**Featured Article**)

1. Wang, Y.; Wang, C. Y.; **Wu, Y.**; Huang, G.; Li, J.; Leung, F. C. Identification of the Receptors for Prolactin-Releasing Peptide (PrRP) and Carassius RFamide Peptide (C-RFa) in Chickens. ***Endocrinology*** 2012, *153* (4), 1861–1874. [doi]

Reviews, Book Chapters, and Preprints

4. **Wu, Y**.; Yang, Z.; Lu, Y. Photocaged Functional Nucleic Acids for Spatiotemporal Imaging in Biology. ***Curr. Opin. Chem. Biol.*** 2020, 57, 95–104. [doi]

3. Qian, R.C.; **Wu, Y.**; Yang, Z.; *Guo, W.*; *Zhou, Z.-R.*; Lu, Yi. “Metal-Dependent DNAzymes for Cell Surface Engineering and Intracellular Bioimaging,” In “DNA Nanotechnology for Cell Research: From Bioanalysis to Biomedicine” Zhou Nie ed. Wiley. 2024, 143-161. ISBN: 978-3-527-35173-2. [doi] (**book chapter**)

2. Milward, A. E.; Hood, R. J.; Lin, C. A.; Bettencourt, C.; Acquah, E.; Brooks, J.; Collingwood, J.; Kagawa, Y.; Richardson, S.; **Wu, Y.**; Lu, Y.; Dottori, M.; and Johnstone, D. M. Paradoxes in the Ontological Classification of Glia- Evidence for an Important New Class of Brain Cells with Primary Functions in Iron Regulation. 2025. ***Preprints.*** [doi]

1. Zhang, S.; Li, S.; Yan, R.; *Zhou, Z.-R.*; **Wu, Y.**; Lu, Y. Recent Advances of Using Personal Glucose Meter as a Biosensor Readout for Non-Glucose Targets. ***Curr. Anal. Chem.*** 2022, *18* (6), 705–722. [doi]

TEACHING EXPERIENCE

Guest Lectures, The University of Texas at Austin

- **BME363 Bioelectronics and Biointerfaces** (10/2023): "DNA-based Sensors and Their Applications in Point-of-Care Diagnostics and Imaging of Metal Ions in Human Disease."
- **CH390L Proposal Prep: Chem PhD Qual** (Fall 2023): "Crafting an Engaging Introduction to Your Qual Exam Report." Assisted in preparing lecture materials, assignments, rubrics, and exams, mentored and graded students.

Teaching Associate

- **CH391 Advanced Chemistry Biology, The University of Texas at Austin** (Spring 2024): Designed slides and questions for "Chemical Biology of Metals" with real-life examples.
- **CH366D Bioinorganic Chemistry, The University of Texas at Austin** (Fall 2022): Created slides and exams for "Metal in Medicine," enhancing clarity and comprehension.

Teaching Assistant

- **Applied Bioinformatics Course, Peking University** (Spring 2012): Taught BLAST and Linux, provided feedback, and guided students in bioinformatics tools.

PROFESSIONAL TRAINING AND DEVELOPMENT

Semester-Length Courses and Certifications

Pedagogical Preparation in Teaching and Mentoring

- Advanced Teaching Preparation Certificate, The University of Texas at Austin 2023–2024
- Concentration in Teaching and Mentoring 2024
- NSC 088L: Introduction to Evidence-Based Teaching Fall 2024
- NSC 088M: Mentoring Undergraduate Researchers, Spring 2024

Training in Leadership and Project Management

- STEM Project Management Training (SPMT) Fall 2025
- Concentration in Leadership and Project Management 2024
- NSC 088S: Strategic Management Fall 2024
- NSC 088P: Leading People and Organizations Spring 2024

Preparation in Science Communication and Academic Writing

- NSC 088V: Scientists as writers Fall 2025
- Concentration in Communicating Science 2025
- NSC 088D: Science Communication Seminar Spring 2025
- Grant Writing Workshops and Seminars Spring 2024
- OVPR's Investigator Skill-Building workshops 2024-2025
- NSC 088C: Science Communication Seminar Spring 2023
- ESL 593: Academic Presentation Skills Spring 2021
- ESL 592: Advanced Academic Writing Spring 2021
- ESL 510: English Pronunciation and Oral Fluency for Academic Purposes Spring 2021

Certification in Research Ethics and Integrity

- Responsible Conduct of Research Certification 2023

MENTORING EXPERIENCE

Mentor, STEM Muse Mentorship Program, The University of Texas at Austin 2024-2025
Mentored underrepresented women in STEM to support diversity and inclusion

Class Advisor for Undergraduate Students, Peking University (Class of 2012) 2012-2016
Excellent Class Award, Beijing Municipality, 2013

Research Mentorship
*Indicates underrepresented minority or first-generation students.

- **Postdoctoral Researchers**

Zerui Zhou, Department of Chemistry, UT Austin 2024-Present
Current: Assistant Professor, Anhui Normal University, China

Xiangli Shao, Department of Chemistry, UT Austin 2022-2025
Current: Postdoctoral Fellow, Rice University

- **Graduate Students**

Meng Chen, Department of Molecular Biosciences, UT Austin 2025-Present

*Valeria Garcia, Department of Molecular Biosciences, UT Austin 2023-Present
NSF Graduate Research Fellowship

Yujie He, Department of Biomedical Engineering, UT Austin 2023-Present

*Shreestika Pradhan, Department of Chemistry, UT Austin 2023-Present

*Elijah Garcia, Department of Chemical Engineering, UT Austin 2023-Present
NSF Graduate Research honorable mention

*Ishika Rashed, Department of Chemistry, UT Austin 2023-Present
NSF Graduate Research honorable mention

Aritra Roy, Department of Chemistry, UT Austin 2022-Present

Mandira Banik, Department of Chemistry, UT Austin 2022-Present
NSF Graduate Research Fellowship
NIH Chemistry-Biology Interface (CBI) Training Program fellowship
Glenn E. and Barbara R. Ullyot Fellowship

Lisa Phan, Department of Chemistry, UT Austin 2022-Present

Anne Farrell, Department of Chemistry, UT Austin 2021-Present

Linggen Kong, Department of Molecular Biosciences, UT Austin 2021-Present

Whitney Lewis, Department of Chemistry, UIUC and UT Austin 2019-Present
P.E.O. Scholar Award
NSF Graduate Research honorable mention
Summer 2022 Chemistry Department Research Fellowship

Yu-An Kuo, Department of Biomedical Engineering, UT Austin 2022-2024
Current: Postdoctoral Fellow, MD Anderson Cancer Center

Weijie Guo, Department of Molecular Biosciences, UIUC and UT Austin 2018-2024
Current: Postdoc, Max Planck Institute, Germany

Mingkuan Lyu, Department of Chemistry, UIUC 2018-2023
Drickamer Research Fellowship
Current: Postdoc, UT Austin

Yuxin Wang, School of Life Sciences, Peking University 2016
Current: Postdoc, Peking University

Yanfei Wang, Capital Medical University, Peking University 2015-2017
Current: Attending Physician, Beijing Chaoyang Hospital

Qing Lu, Peking University Sixth Hospital, Peking University 2015-2016
Current: Attending Physician, Wuhan Children's Hospital

*Meiling Zhang, School of Life Sciences, Peking University 2015-2016
Current: Junior Principal Investigator, China Agricultural University

Yi Wang, Peking University Sixth Hospital, Peking University 2014-2015
Current: Attending Physician, Shanghai Children's Hospital

- **Visiting Scholars**

Ying Lu, Department of Chemistry, UT Austin 2022-2023
Current: Faculty, Anhui Agricultural University

Zhimei Huang, Department of Chemistry, UIUC 2019-2020
Current: Faculty, Hunan University

Jing-Luen Wai, Department of Chemistry, UIUC 2018-2019
Current: Fleet Management, SPX Express

- **Technicians**

Jacqueline Van Stappen, Department of Chemistry, UT Austin 2021-2024
Current: Research Staff, University of Indiana at Bloomington
Xinyi Huang, School of Life Sciences, Peking University 2014
Shuang Zhou, School of Life Sciences, Peking University 2013

- **Undergraduate Students**

Heather Gan, Department of Molecular Biosciences, UT Austin 2024-Present
*Siva Epuri, Public Health, UT Austin 2024-2025
Sophie Stokes, Department of Molecular Biosciences, UT Austin 2023
Current: Pre-Medical Student, UT Austin
Pengshuang Shi, School of Life Sciences, Peking University 2014-2017
Current: Medical Student, Shanghai Jiao Tong University
*Guozhu Tang, Undergraduate, School of Lifesciences, Peking University 2013-2016
Received the President's Fund for undergraduate research
Yuanhe Zhang, Undergraduate, School of Lifesciences, Peking University 2013-2016
Received the President's Fund for undergraduate research
Current: Graduate Student, Peking University
Rongfeng Niu, Undergraduate, School of Life Sciences, Peking University 2012

- **High School Students**

Yufei Cui, High School Affiliated to Renmin University of China, Elite Program 2015
Projects honored at the Elite Program Conference
Current: Graduate Student, MIT
Jiahe Wang, Beijing No. Four High School, Elite Program 2015
Yuan Shen, Beijing No. Four High School, Elite Program 2016
Projects honored at the Elite Program Conference
Current: Software Engineer, Google
Xinyu Yu, Beijing 101 Middle School, Elite Program 2016
Current: Undergraduate Student, Zhongshan University

INVITED SEMINARS AND CONFERENCE PRESENTATIONS

Oral Presentations:

Trainees are underlined and italicized.

6. **Wu, Y.**; Gomez, L.; Villeda, S.; Fonken, L.; Milward, A.; Lu, Y. Deciphering iron redox states in neurodegenerative diseases by developing DNAzyme-based fluorescent sensors for simultaneous monitoring of Fe^{2+} and Fe^{3+}. 10th Congress of the BioIron Society. Montreal, Canada. May 25-29, 2025.
5. Milward, A.; Johnstone, D.; Aryal, R.; Acquah, E.; Lin, C.-A.; Horn, R.; **Wu, Y.**; Lu Y. Paradoxical cellular iron insufficiency – a potential cause of fatigue, delirium, and other downsides of hemochromatosis-related mutations. 10th Congress of the BioIron Society. Montreal, Canada. May 25-29, 2025.
4. **Wu, Y.**; Yang, Z.; and Lu, Y. Illuminating neuronal diseases with DNAzyme-based fluorescence sensors. INS bootcamp research talks, The University of Texas at Austin. August 14, 2024.
3. **Wu, Y.** Elucidating iron redox cycles in ferroptosis involved in neurodegenerative diseases. INS Dialogues, The University of Texas at Austin. November 10, 2023.
2. **Wu, Y.**; Torabi, S.-F.; Lake, R.J.; Hong, S.; Yi, Lu. Deciphering iron redox during ferroptosis in cancers using DNAzyme sensors that simultaneously monitor Fe^{2+} and Fe^{3+} in vivo.

Livestrong Cancer Institute's 2022 Basic and Translational Research Retreat. November 14, 2022.

1. **Wu, Y.***; *Zhang, Y.*; *Tang, G.*; Mi, X., Guo, H., Liu, D. Distinct ways of sensory hair cell regeneration in the zebrafish lateral line. The 38th Annual Association for Research in Otolaryngology (ARP) Midwinter Meeting. Baltimore, MD. February 21-25, 2015 ***Peking University travel award winner**

Poster Presentations:

12. Yang, Z.; *Shao, X.*; **Wu, Y.**; Lu, Y. (**2025**, September 17) Salts and Survival: How Tumors Build a Potassium-Rich Neighborhood to Rewire Drug Response. [Poster presentation] National Postdoc Appreciation Week Research Symposium, Austin, TX, United States.
11. Lu, Y.; **Wu, Y.**; Yang, Z.; *Shao, X.*; Mou, Q. (**2025**, January 19-24) Advancing spatial metallomics by in vitro selection of metal-specific DNAzymes and super-resolution imaging methods with spatiotemporal controls and subcellular localization [Conference poster presentation], Metal in Biology Gordon Research Conference, Ventura, CA, United States.
10. Le, K.; *He, Y.*; Yang, Z.; *Kuo, Y.-A.*; **Wu, Y.**; Lu, Y.; Yeh, H.-C. (**2024**, November 17-21) Rapid Screening of New DNA Fluorogenic Aptamers With the SELEX-NGS Platform [mentored student poster], ASME 2024 International Mechanical Engineering Congress and Exposition, Portland, OR, United States. (IMECE2024-149735)
9. **Wu, Y.**; Torabi, S.-F.; Lake, R.; Yang, Z.; Hong, S.; Yu, Z.; Mirica, L.; Fonken, L.; Lu, Y. (**2024**, September 18) Deciphering Iron Redox Changes in Ferroptosis using DNAzyme Sensors that can Simultaneously Monitor Fe^{2+} and Fe^{3+}. [Poster presentation] National Postdoc Appreciation Week Research Symposium, Austin, TX, United States.
8. **Wu, Y.**; Torabi, S.-F.; Lake, R.; Yang, Z.; Hong, S.; Yu, Z.; Mirica, L.; Fonken, L.; Lu, Y. (**2024**, July 28-August 1) [Conference poster presentation], Alzheimer's Association International Conference® 2024, Philadelphia, PA, United States. (Wednesday-235) [Conference paper]
7. Lu, Y.; **Wu, Y.**; Yang, Z.; *Shao, X.*; Mou, Q. (**2024**, January 21-26) Developing super-high-resolution imaging methods to understand roles of metal ions in bipolar disorder, Alzheimer's, cancer, and other diseases [Conference poster presentation], Metal in Biology Gordon Research Conference, Ventura, CA, United States.
6. Liu, D.; **Wu, Y.**; Mi, X.; Guo, H. (**2017**, February 11-15) Break-down of hair cell regeneration process in zebrafish neuromasts [Conference poster presentation], Association for Research in Otolaryngology 40th Annual MidWinter Meeting, Baltimore, MD, United States. [abstract book PS 220]
5. Liu, D.; **Wu, Y.**; Mi, X.; Guo, H.; Zhu, Z.; Raible, D. (**2016**, July 13-17) Manipulating hair cell regeneration in zebrafish lateral line neuromasts [Conference poster presentation], The Allied Genetics Conference, Orlando, FL, United States. [abstract book Z6262A]
4. Liu, D.; **Wu, Y.**; Mi, X.; Guo, H.; *Tang, G.*; *Zhang Y.* (**2016**, February 20-24) Complex Interplay of Notch, Wnt/β-catenin and Fgf Signaling During Zebrafish Lateral Line Hair Cell Regeneration [Conference poster presentation], Association for Research in Otolaryngology 39th Annual MidWinter Meeting, San Diego, CA, United States. [abstract book PD-85]
3. Liu, D.; **Wu, Y.***; *Zhang, Y.*; *Tang, G.*; Mi, X.; *Guo, H.* (**2015**, February 21-25). Distinct Ways of Sensory Hair Cell Regeneration in Zebrafish Lateral Line [Conference poster presentation]. Association for Research in Otolaryngology 38th Annual MidWinter Meeting, Baltimore, MD, United States. [abstract book PS-6] ***Selected for an oral presentation, Presenter**
2. **Wu, Y.*;** *Zhang, Y.*; *Tang, G.*; Liu, D. (**2014**) Deciphering the Mechanisms of Hair Cell Regeneration in Zebrafish. Annual symposium of State Key Laboratory, Beijing, China. ***Oral presentation award.**
1. Mi, X.; Liu, H.; **Wu, Y.**; Guo, H.; Li, Y.; Liu, D. (**2013**, February 16-20). Deciphering the Strategy of Hair Cell Regeneration in Zebrafish Lateral Lines [Conference poster presentation].

Association for Research in Otolaryngology 36th Annual MidWinter Meeting, Baltimore, MD, United States. [abstract book 788]

LEADERSHIP, SERVICES, AND OUTREACH ACTIVITIES

Primary Reviewer

Nature Chemistry, Molecular Basis of Disease Journal, Computational Intelligence and Neuroscience, Brain Sciences, International Journal of Molecular Sciences, Biosensors, Genes, BioTech, Technologies, European Journal of Medical Research, Cells, Neurology International

Co-Reviewer (under the supervision of Dr. Yi Lu and Dr. Dong Liu)

Proceedings of the National Academy of Sciences, CCS Chemistry, Biosensors and Bioelectronics, Journal of the American Chemical Society, Science Advances, SCIENCE CHINA Chemistry, Chemical Science, ACS Catalysis, Angewandte Chemie, Sensors & Actuators: B. Chemical, Analytical Chemistry, Nature Materials, Journal of Genetics and Genomics, PLOS ONE

Service

- Mentor, STEM Muse Program – promoting women's success in STEM fields 2024-2025
- Planning Committee Member, Postdoctoral Appreciation Week Symposium 2024
- Member, Laboratory Student Recruiting Committee 2021-Present
- Student Volunteer, RECOMB Conference, Beijing, China 2013

Outreach Activities

- Poster Judge, Greater Austin Regional Science and Engineering Fair 2024
- Poster Judge and Laboratory Tour Guide 2023
  Gateway to Graduate Studies in Science Symposium, The University of Texas at Austin
- Volunteer, Chengdu Research Base of Giant Panda Breeding 2009

Leadership and Other Activities

- Chair, Poster Session Committee, Postdoctoral Appreciation Week Symposium 2025
- Coordinator and Facilitator, Weekly Writing Groups 2023-present
  Early Career Fellow Program, The University of Texas at Austin
- Discussion Leader, Neuroimmune Journal Club 2024
- Participant, SCU–MIT Summer School 2010
- Director of Etiquette Department, Student Union 2008-2010
  School of Life Sciences, Sichuan University
- Deputy Director of Advertising Department, Sichuan University Student Union 2009-2010
- Executive Deputy Director, Student Union, Sichuan University Jiang'an Campus 2008-2009
- Student Union Executive, Sichuan University Jiang'an Campus 2007-2008

Professional Membership

Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment 2024
American Chemical Society member 2025-2026