

CURRICULUM VITAE

Lan Zhu PhD

**Assistant Professor
Department of Pharmacology and Toxicology**

OFFICE ADDRESS:

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Milwaukee, WI 53226

EDUCATION:

09/2005 - 06/2009 BS, Zhejiang A&F University, Zhejiang, China
09/2010 - 11/2011 MSc, University of Sheffield, Sheffield, UK
05/2015 - 12/2019 PhD, Arizona State University, Tempe, AZ

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

12/30/2019 - 06/30/2022 Assistant Research Scientist, Biodesign Institute, Arizona State University, Tempe, AZ

FACULTY APPOINTMENTS:

12/2010 - 09/2011 Graduate Research Assistant, Department of Human Metabolism, University of Sheffield Medical School, UK
06/2012 - Present 06/ 2014 Research Assistant, Center for Structure and Function of Drug Targets, Shanghai Institute of Materia Medica, China
10/2013 - 11/2013 Visiting Scholar, The Scripps Research Institute, La Jolla, CA
06/2014 - 12/2014 Research Assistant, Department of Cell and Molecular Biology, The Scripps Research Institute, La Jolla, CA
01/2015 - 05/2015 Graduate Research Assistant, The Bridge Institute, Molecular and Computational Biology, University of Southern California, Los Angeles, CA
07/2022 - Present Assistant Professor, Department of Pharmacology and Toxicology, The Medical College of Wisconsin, Milwaukee, WI

OTHER EMPLOYMENT HISTORY:

AWARDS AND HONORS:

2007 - Present Advanced Individual scholarship for Scientific and Research Innovation, Zhejiang A&F University
2008 - Present Outstanding Student scholarship, Zhejiang A&F University
2011 - Present Diploma of Merit, University of Sheffield
2018 - Present BioXFEL Scholar
2019 - Present BioXFEL Scholar

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

07/2016 - Present American Association for the Advancement of Science (AAAS/Science)
07/2016 - Present American Chemical Society (ACS)

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorship
06/2022 - Present Frontiers in Genetics
Journal Review
06/2020 - Present Journal of Visualized Experiments

08/2020 - Present Molecules

10/2020 - Present Pharmaceuticals

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

National

Lan Zhu, Pink Beam Serial Crystallography at the Advanced Photon Source, Invited Poster, G-protein Signaling Workshop, Weill Cornell Medical College, New York, 06/14/2016 - Present

Lan Zhu, New Developments and Biological Discoveries of Membrane Proteins with SFX, Invited Poster, G-protein Signaling Workshop, Thomas Jefferson University, Philadelphia, PA, 06/18/2018 - Present

Lan Zhu, Time-Resolved Serial Femtosecond Crystallography, Invited Session Chair, 2019 6th Annual BioXFEL International Conference, San Diego, CA, 02/13/2019 - Present

Lan Zhu, Structure Determination from Lipidic Cubic Phase Embedded Microcrystals by MicroED, Invited seminar speaker at University of Southern California Bridge Institute, Los Angeles, CA, 09/15/2020 - Present

EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:

Undergraduate Students

Maya Erler, Arizona State University, 07/2015 - 07/2017 Research co-mentor

Steven Cosgrove, Arizona State University, 08/2015 - 06/2017 Research co-mentor

Jessica Fitzgerald, Arizona State University, 08/2015 - 09/2014 Research co-mentor

Kenvin Thoi, Arizona State University, 08/2015 - 01/2017 Research co-mentor

Alexis Nichols, Arizona State University, 05/2018 - 07/2020 Research co-mentor

Sara Saadati Bahrevar, Arizona State University, 07/2018 - 05/2019 Research co-mentor

PROGRAMMATIC DEVELOPMENTS:

Research Programs

05/2015 - Present Protein Crystallization and Cryo-EM workshop

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. L. Zhu, Q. Zhao, B. Wu. (2013) Structure-based studies of chemokine receptors. *Current Opinion Structure Biology*. 23:539-546.
2. K. Zhang, J. Zhang, Z. Gao, D. Zhang, L. Zhu, G. Han, S. Moss, S. Paoletta, E. Kiselev, W. Lu, G. Fenalti, W. Zhang, C.E. Muller, H. Yang, H. Jiang, V. Cherezov, V. Katritch, K.A. Jacobson, R.C. Stevens, B. Wu, Q. Zhao. (2014) Structure of the human P2Y₁₂ receptor in complex with an antithrombotic drug. *Nature*. 509:115-118.
3. J. Xiang, E. Chun, C. Liu, L. Jing, Z. Al-Sahouri, L. Zhu, and W. Liu#. (2016) Successful Strategies to Determine High-Resolution Structures of GPCRs. *Trends Pharmacol. Sci.* 2016 Dec;37(12):1055-1069.
4. J.M. Martin-Garcia, C.E. Conrad, G. Nelson, N. Stander, N.A. Zatspepin, J. Zook, L. Zhu, J. Geiger, E. Chun, D. Kissick, M.C. Hilgart, C. Ogata, A. Ishchenko, N. Nagaratnam, S. Roy-Chowdhury, J. Coe, G. Subramanian, A. Schaffer, D. James, G. Ketwala, N. Venugopalan, S. Xu, S. Corcoran, D. Ferguson, U. Weierstall, J.C. H. Spence, V. Cherezov, P. Fromme#, R.F. Fischetti# and W. Liu#. (2017) Serial millisecond crystallography of membrane and soluble protein microcrystals using synchrotron radiation. *IUCrJ*. 4:439-454.
5. D. Li*, S. Liu*, L. Zhu*, Y. Wang, Y. Chen, J. Liu, G. Hu, X. Yu, J. Li, Z. Wu, H. Lu, W. Liu#, and B. Liu#. (2017) FBXW8-dependent degradation of MRFAP1 in anaphase controls mitotic cell death. *Oncotarget*. 8:97178-97186. (*contributed equally)
6. T. Lan, J.L. Wierman, M.W. Tate, H.T. Philipp, J.M. Martin-Garcia, L. Zhu, D. Kissick, P. Fromme, R.F.

- Fischetti, W. Liu, V. Elser and S.M. Gruner. (2018) Solving protein structure from sparse serial microcrystal diffraction data at a storage-ring synchrotron source. *IUCrJ*. 5: 548-558.
7. L. Zhu, M.-Y. Lee, E. Chun, B. Liu, and W. Liu#. (2019) Overview of Biochemical Assays in Lipidic Cubic Phase. *Trends in Biochemical Sciences*. 44: 295-299.
 8. S. Du*, L. Zhu*, Y. Wang*, J. Liu, D. Zhang, Y. Chen, Q. Peng, W. Liu#, and B. Liu#. (2019) SENP1-mediated deSUMOylation of USP28 regulated HIF-1 α accumulation and activation during hypoxia response. *Cancer Cell Int*. 2019 Jan 3;19:4. doi: 10.1186/s12935-018-0722-9. (*contributed equally)
 9. J.M. Martin-Garcia*, L. Zhu*, D. Mendez, M.-Y. Lee, E. Chun, C. Li, H. Hu, G. Subramanian, D. Kissick, C. Ogata, R. Henning, A. Ishchenko, Z. Dobson, S. Shang, U. Weierstall, J.C.H. Spence, P. Fromme, N.A. Zatsepin, R.F. Fischetti, V. Cherezov#, and W. Liu#. (2019) High-viscosity injector-based pink-beam serial crystallography of microcrystals at a synchrotron radiation source. *IUCrJ*. 6: 412-425. (*contributed equally)
 - 10.
 11. L.C. Johansson, B. Stauch, J.D. McCorvy, G.W. Han, N. Patel, X-P Huang, A. Batyuk, C. Gati, S.T. Slocum, C. Li, J.M. Grandner, S. Hao, R.H.J. Olsen, A.R. Tribo, S. Zaare, L. Zhu, N.A. Zatsepin, U. Weierstall, S. Yous, R.C. Stevens, W. Liu, B.L. Roth, V. Katritch, V. Cherezov. (2019) XFEL structures of the human MT2 melatonin receptor reveal the basis of subtype selectivity. *Nature*. 569: 289-292.
 12. B. Stauch, L.C. Johansson, J.D. McCorvy, N. Patel, G.W. Han, X-P. Huang, C. Gati, A. Batyuk, S.T. Slocum, A. Ishchenko, W. Brehm, T.A. White, N. Michaelian, C. Madsen, L. Zhu, T.D. Grant, J.M. Grandner, A. Shiriaeva, R.H. J. Olsen, A.R. Tribo, S. Yous, R.C. Stevens, U. Weierstall, V. Katritch, B.L. Roth#, W. Liu#, V. Cherezov#. (2019) Structural basis of ligand recognition at the human MT1 melatonin receptor. *Nature*. 569, 284-288.
 13. L. Zhu, G. Bu, L. Jing, D. Shi, M.-Y. Lee, T. Gonen, W Liu* and B.L. Nannenga*. (2020) Structure Determination from Lipidic Cubic Phase Embedded Microcrystals by MicroED. *Structure*. 6;28(10):1149-1159.e4. (Cover paper)
 14. M. Su*, L. Zhu*, Y. Zhang, N. Paknejad, R. Dey, J. Huang, M.-Y. Lee, D. Williams, K.D. Jordan, E.T. Eng, O.P. Ernst, J.R. Meyerson, R.K. Hite, T. Walz, W Liu# and X-Y. Huang#. (2020) Structural Basis of the Activation of Heterotrimeric Gs-Protein by Isoproterenol-Bound β 1-Adrenergic Receptor. *Molecular Cell*. 1;80(1):59-71.e4. (*contributed equally)
 15. L. Zhu, X. Chen, E.E. Abola, L. Jing and W Liu*. (2020) Serial Crystallography for Structure-Based Drug Discovery. *Trends Pharmacol Sci*. 41(11):830-839.
 16. L. Jing, L. Zhu#, W. Liu#. (2021) Commentary on "Structural Basis of the Activation of Heterotrimeric Gs-Protein by Isoproterenol-Bound β 1-Adrenergic Receptor". *J Clin Cardiol*. 2(1):15-18.
 17. S. Liu, N. Paknejad, L. Zhu, Y. Kihara, M. Ray, J. Chun, W. Liu, R.K. Hite, X.Y. Huang. (2022) Differential activation mechanisms of lipid GPCRs by lysophosphatidic acid and sphingosine 1-phosphate. *Nature Commun*. 13:1-11.
 18. M. Su, N. Paknejad, L. Zhu, J. Wang, H.N. Do, Y. Miao, W. Liu, R.K. Hite, X.Y. Huang. (2022) Structures of β 1- adrenergic receptor in complex with Gs and ligands of different efficacies. *Nat Commun*. 13, 4095.

Books, Chapters, and Reviews

1. L. Zhu, U. Weierstall, V. Cherezov, and W. Liu#. (2016) Serial Femtosecond Crystallography of Membrane Proteins. Springer. *The Next Generation in Membrane Protein Structure Determination*, I. Moraes, eds. Springer, Springer International Publishing. Volume 922: Page 151-160.