

Zhigao Wang, Ph.D.

Current address: Center for Regenerative Medicine, Heart Institute
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Education:

Date	Degree	University	Department
1998-2004	Ph.D.	UT Southwestern Medical Center	Molecular Biology
1990-1994	B.S.	Wuhan University, China	Biochemistry

Professional Experience:

2021-	Associate professor Center for Regenerative Medicine, Heart Institute Department of Internal Medicine University of South Florida
2012-2021	Assistant Professor Department of Molecular Biology, UT Southwestern Medical Center at Dallas
2004-2012	Postdoctoral Research Associate HHMI /UT Southwestern Medical Center at Dallas Supervisor: Xiaodong Wang, Ph.D.
1998-2004	Ph.D. student in the Genetics and Development Program UT Southwestern Medical Center at Dallas Supervisor: Eric N. Olson, Ph.D.

Honors and awards:

- 2012, CPRIT Scholar in Cancer Research, the Cancer Prevention & Research Institute of Texas.
- 2012, Virginia Murchison Linthicum Scholar in Medical Research, UT Southwestern Medical Center at Dallas, Texas.
- 2010, Grand prize, The 7th Annual Postdoctoral Research Symposium, UT Southwestern Medical Center at Dallas, Texas.
- 2008-2010, HHMI Postdoctoral Fellowship.
- 2003, Basic Science Research 1st Place, Molecular Cardiology Forum for Young Investigators, Pathway to Cardiac Development and Regeneration. UT Southwestern Medical Center at Dallas, Texas.

Bibliography:

1. Du J, **Wang Z.** (2024). Regulation of RIPK1 Phosphorylation: Implications for Inflammation, Cell Death, and Therapeutic Interventions. *Biomedicines* 2024, 12 (7), 1525, doi.org/10.3390/biomedicines12071525
2. Liu S, Perez P, Sun X, Chen K, Fatirkhorani R, Mammadova J, **Wang Z.** (2024). MLKL polymerization-induced lysosomal membrane permeabilization promotes necroptosis. *Cell Death Differ* 31 (1), 40-52
3. Du J, Xiang Y, Liu H, Liu S, Kumar A, Xing C, **Wang Z.** (2021). RIPK1 dephosphorylation and kinase activation by PPP1R3G/PP1 γ promote apoptosis and necroptosis. *Nat Commun* 12, 7067 DOI: 10.1038/s41467-021-27367-5.
4. Johnston AN, **Wang Z.** (2020). HSP70 promotes MLKL polymerization and necroptosis. *Molecular & Cellular Oncology*, DOI: [10.1080/23723556.2020.1791561](https://doi.org/10.1080/23723556.2020.1791561)
5. Yu B, Ma J, Li J, Wang DZ, **Wang Z,** Wang S. (2020). Mitochondrial phosphatase PGAM5 modulates cellular senescence by regulating mitochondrial dynamics. *Nat Commun* 11 (1), 2549

6. Johnston AN, Ma Y, Liu H, Liu S, Hanna-Addams S, Chen S, Chen C, **Wang Z.** (2020b). Necroptosis-blocking compound NBC1 targets heat shock protein 70 to inhibit MLKL polymerization and necroptosis. *Proc Natl Acad Sci U S A* 117 (12):6521-6530.
7. Hanna-Addams S, Liu S, Liu H, Chen S, **Wang Z.** (2020a). CK1 α , CK1 δ and CK1 ϵ are necrosome components which phosphorylate serine 227 of human RIPK3 to activate necroptosis. *Proc Natl Acad Sci U S A* 117 (4): 1962-1970
8. Li Y, Zhang Z, Chen J, Liu W, Liu B, Li X, Liu L, Xu S, Dong Q, **Wang Z,** Wang H, Gao S, Zhu B. (2018). Stella safeguards the oocyte methylome by preventing de novo methylation mediated by DNMT1. *Nature* 564, 136-140
9. Johnston AN, **Wang Z.** (2018). Necroptosis: MLKL polymerization. *J Nat Sci.* 4 (7), e513.
10. Hanna-Addams S, **Wang Z.** (2018). Use of two-dimensional semi-denaturing detergent agarose gel electrophoresis to confirm size heterogeneity of amyloid or amyloid-like fibers. *J Vis Exp* (134), e57498, doi:10.3791/57498.
11. Reynoso E, Liu H, Li L, Yuan A, Chen S, **Wang Z.** (2017). Thioredoxin 1 actively maintains the pseudokinase MLKL in a reduced state to suppress MLKL polymerization and necroptosis. *J Biol Chem* 292, 17514-17524
12. Liu S, Liu H, Johnston AN, Hanna-Addams S, Reynoso E, Xiang Y, **Wang Z.** (2017). MLKL forms disulfide bond-dependent amyloid-like polymers to induce necroptosis. *Proc Natl Acad Sci U S A* 114, E7450-7459.
13. Hanus J, Zhang H, **Wang Z,** Liu Q, Zhou Q, Wang, S. (2013). Induction of necrotic cell death by oxidative stress in retinal pigment epithelial cells. *Cell Death Dis* 4: e965.
14. Sun L, Wang H, **Wang Z,** He S, Chen S, Liao D, Wang L, Yan J, Liu W, Lei X Wang X. (2012). Mixed Lineage kinase domain-like protein mediates necrosis signaling downstream of receptor-interacting serine-threonine kinase 3. *Cell.* 148(1-2):213-27. (Commented in *Cell.* 148(1-2):17-8 and evaluated in Faculty of 1000. F1000.com/14267354)
15. **Wang Z,** Jiang H, Chen S, Du F, Wang X. (2012). The mitochondrial phosphatase PGAM5 functions at the convergent point of multiple necrotic death pathways. *Cell.* 148(1-2):228-43. (Commented in *Cell.* 148(1-2):17-8 and evaluated in Faculty of 1000. F1000.com/13861956)
16. Wang J, Li A, **Wang Z,** Feng X, Olson EN, Schwartz RJ. (2007). Myocardin sumoylation transactivates cardiogenic genes in pluripotent 10T1/2 fibroblasts. *Mol Cell Biol* 27, 622-632.
17. Xing W, Zhang TC, Cao D, **Wang Z,** Antos CL, Li S, Wang Y, Olson EN, Wang DZ. (2006). Myocardin induces cardiomyocyte hypertrophy. *Circ Res* 98, 1089-1097.
18. Liu ZP, **Wang Z,** Yanagisawa H, Olson EN. (2005). Phenotypic modulation of smooth muscle cells through interaction of Foxo4 and myocardin. *Dev Cell* 9, 261-270.
19. Cao D*, **Wang Z***, Zhang CL*, Oh J, Xing W, Li S, Richardson JA, Wang DZ, Olson EN. (2005). Modulation of smooth muscle gene expression by association of histone acetyltransferases and deacetylases with myocardin. *Mol Cell Biol* 25, 364-376. (* **equal contribution**).
20. Oh J*, **Wang Z***, Wang DZ*, Lien CL, Xing W, Olson EN. (2004). Target gene-specific modulation of myocardin activity by GATA transcription factors. *Mol Cell Biol* 24, 8519-8528. (* **equal contribution**).
21. **Wang Z,** Wang, DZ, Hockemeyer D, McAnally J, Nordheim A, Olson EN. (2004). Myocardin and ternary complex factors compete for SRF to control smooth muscle gene expression. *Nature* 428, 185-189.
22. Li S, Wang DZ, **Wang Z,** Richardson JA, Olson EN. (2003). The serum response factor coactivator myocardin is required for vascular smooth muscle development. *Proc Natl Acad Sci U S A* 100, 9366-9370.
23. **Wang Z,** Wang DZ, Pipes GC, Olson EN. (2003). Myocardin is a master regulator of smooth muscle gene expression. *Proc Natl Acad Sci U S A* 100, 7129-7134.
24. Wang DZ, Li S, Hockemeyer D, Sutherland L, **Wang Z,** Schrott G, Richardson JA, Nordheim A, Olson EN. (2002). Potentiation of serum response factor activity by a family of myocardin-related transcription factors. *Proc Natl Acad Sci U S A* 99, 14855-14860.
25. Wang DZ, Passier R, Liu ZP, Chin CH, **Wang Z,** Li S, Sutherland L, Small E, Kreig PA, Olson EN. (2002). Regulation of cardiac growth and development by SRF and its cofactors. *Cold Spring Harbor symposia on quantitative biology.* 2002; 67: 97-105

26. Wang DZ, Chang PS, **Wang Z**, Sutherland L, Richardson JA, Small E, Krieg PA, Olson EN. (2001). Activation of cardiac gene expression by myocardin, a transcriptional cofactor for serum response factor. *Cell* 105, 851-862.

Invited presentations:

- 2023, Cell Death and Disease Symposium, Suzhou, China
- 2022, Dept. of Chemistry, University of South Florida
- 2021, Dept. of Cell & Molecular Biology, Tulane University.
- 2020, Eppley Institute for Research in Cancer and Allied Diseases, University of Nebraska Medical Center.
- 2020, James Comprehensive Cancer Center, Ohio State University.
- 2020, Dept. of Physiology, University of Tennessee.
- 2020, School of Life Sciences, Tsinghua University, Beijing, China.
- 2019, Cold Spring Harbor Cell Death Meeting, short talk.
- 2018, Dept. of Biochemistry and Molecular Biology, University of Oklahoma Health Sciences Center.
- 2016, Chinese Biological Investigator Society 11th Biennial Conference. Chengdu, Sichuan, China.
- 2015, Molecular Biology Scientific Conference, Dallas, TX
- 2013, Dept. of Cell & Molecular Biology, Tulane University.
- 2012, Dept. of Neuro-Oncology, MD Anderson.
- 2012, Dept. of Physiology, University of California, San Francisco.
- 2012, Dept. of Pharmacology and Cancer Biology, Duke University.
- 2012, Dept. of Chemistry, University of Texas at Dallas.
- 2012, Dept. of Cancer Biology, University of Pennsylvania.

Grants:

Ongoing Research Support:

(1) R01GM147474 Wang (PI) 9/2022-8/2025(NCE)
NIH/NIGMS
Title: Regulation of Cell Death and Disease by a Novel Membrane Protein MADMAN

Pending:

(1) R01GM155585-01 Zhigao Wang, Jianfeng Cai and Da-Zhi Wang (co-PI) 7/2024-6/2029
NIH/NIGMS
Title: Novel Mechanisms Regulating Cell Death and Disease

(2) R01DK140274 Lei Wang and Zhigao Wang (co-PI) 12/2024-11/2029
NIH/NIDDK
Title: Role of PPP1R3G in the Regulation of Cellular Injury in AKI

(3) R35GM158455 Zhigao Wang (PI) 4/2025-3/2030
NIH/NIGMS
Title: Molecular and Chemical Regulation of Cell Death in Disease

Completed Research Support:

(1) R1222 Wang (PI) 9/2012-8/2017
Cancer Prevention & Research Institute of Texas
Recruitment of First-Time, Tenure-Track Faculty Members.

(2) Virginia Murchison Linthicum Scholar in Medical Research, Wang (PI), 9/2012-8/2021
UT Southwestern Medical Center at Dallas

(3) I-1827 Wang (PI) 6/2013-5/2016
The Welch Foundation
Title: Biochemical Identification of Proteases Involved in Necrotic Cell Death Execution.

(4) TL1TR001104, Hanna-Addams, S (training grant)/Wang (PI) 6/2015-5/2016
NIH/NCATS

(5) 2T32GM008203-26A1, Johnston, A (training grant)/Wang (PI) 6/2015-5/2017

NIH/NIGMS (6) 5F31GM111049-02 Reynoso (fellow)/Wang (PI)	1/2016-1/2019
NIH/NIGMS Title: Biochemical Dissection of the Execution Step of Mammalian Necrotic Cell Death. (7) I-1827 Wang (PI)	6/2016-5/2019
The Welch Foundation Title: Regulation of necroptosis by casein kinase 1. (8) R01GM120502A Wang (PI)	7/2017-6/2022
NIH/NIGMS Title: Molecular and Chemical Regulations of Necrotic Cell Death Pathways	

Trainees:**I. PhD students**

1. Eduardo Reynoso, 2012-2017. Current position: senior scientist, Leidos.
2. Andrea Johnston, 2013-2018. Current position: associate professor, School of Veterinary Medicine, Louisiana State University
3. Sarah Hanna-Addams, 2015-2020. Current position: Senior Program Manager, Curia Global.
4. Xue Sun, 2018-2020, visiting MD, PhD student from Soochow University, China. Current position, ICU chief physician, the First Affiliated Hospital of Soochow University.
5. Javier Areas, 2023-present, PhD student

II. Post-docs

1. Yougui Xiang, 2013-2018. Current position: Senior Bioinformatics Scientist, Caris Life Sciences
2. Hua Liu, PhD., 2013-2015. Current position: Professor, Jiangxi University of Traditional Chinese Medicine, China
3. Shuzhen Liu, PhD, 2013-2021. Current position: Assistant Professor, UT Southwestern Medical Center
4. Jingchun Du, PhD, 2018-2021. Current position: Associate Professor, Guangzhou Medical University, China
5. Xueling Ma, MD, PhD, 2022-present
6. Katia Maria Gomes Andrade, PhD, 2023-present

III. Other trainees

Oct 2012, rotation student Eduardo Reynoso
 Jan 2013, rotation student Seonghwan Hwahng
 Aug 2013, summer high school student Jiamin Zhou
 Feb 2014, rotation student Andrea Johnston
 Aug 2014, summer high school student Jiamin Zhou
 June 2015, summer high school student Yanjie Liu
 July 2015, summer college student Anthony Yuan
 July 2015, summer college student, Lily Chen.
 June 2016, SURF (Summer Undergraduate Research Fellowship) student, Thomas Wilkins.
 Feb 2022, medical student, Jamila Mammadova
 Feb 2022, undergraduate at USF, Hayley Manis
 Feb 2022, undergraduate at USF, Nicole Capparell
 Mar 2023, undergraduate at USF, Michael Youssef
 Dec 2024, high school student, Frank Xu

Teaching:

2012-present, journal club, “Advances in cell death regulation”.
 2012-2021, student ethics discussion groups.
 2015-2021, “Cell death in development and diseases” in graduate school course “Responses to stress”.
 2017-2021, student discussion groups, “Cell literature”.

Professional service:

2012-present: *ad-hoc* reviewer,

Science, Nature Chemical Biology, Nature Communications, ELife, PNAS, Journal of Biological Chemistry, Cell Death & Disease, Journal of Molecular Signaling, BMC Biology, Differentiation, Toxicological Sciences, Cells, Frontiers in Cell and Developmental Biology, BBA Molecular Cell Research, iScience, etc.

2015-present, Member, American Society for Biochemistry and Molecular Biology (ASBMB)

2021-present, Member, American Heart Association (AHA)

2022-present, Review Editor for the journal Frontier in Cell Death.

2023-present, Associate Editor for the journal Frontier in Cell Death-Inflammation and Cytotoxicity

2024 *ad-hoc* reviewer, Cell Signaling and Regulatory Systems (CSRS) study section, NIH

Faculty Committee service:

2021-present Faculty Search Committee, Center for Regenerative Medicine, USF

2022-present Appointment, Promotion, and Tenure Committee for the Dept. of Internal Medicine, USF.

Student Committee service:

2012-2021. UT Southwestern graduate student interviews.

2012-2021. UT Southwestern medical student interviews.

2012-2014. PhD dissertation committee of Chengzu Long.

2014, qualifying exam committee of Laura Yuan and Ebony Flowers.

2015, qualifying exam committee of Jin Suk Park and Bercin Cenic.

2016-2018, PhD dissertation committee of Xiang Gui.

2016, qualifying exam committee of Andres Ramirez-Martinez

2018, qualifying exam committee of Josiah Flaming,

2018, qualifying exam committee of Anne Cooley

2019, chair of the qualifying exam committee of Tyron Chang

2020, qualifying exam committee of Michael Trinh

2023-present, PhD dissertation committee of Minh Tran

2023-present, USF graduate student interviews