

## CURRICULUM VITAE

Weizhou Zhang, Ph.D.

Dr. and Mrs. James Robert Spencer Professor of Pathology

Associate Professor with Tenure

Department of Pathology, Immunology and Laboratory Medicine

University of Florida/School of Medicine

08/13/2021

### I. EDUCATIONAL AND PROFESSIONAL HISTORY

#### A. Institutions Attended

1998	BS	Microbiology, Nankai University, Tianjin, China
2001	MS	Microbiology, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China
2007	PhD	Microbiology, Mount Sinai School of Medicine, New York University, New York

#### B. Professional and Academic Positions Held

1998-2001	Graduate Student, Institute of Microbiology, Chinese Academy of Sciences. Supervisor: Yanhe Ma
2001-2006	Graduate Student, Mount Sinai School of medicine, New York University. Supervisor: Lu-Hai Wang
2007	Postdoctoral Fellow, Mount Sinai School of Medicine, New York University. Supervisor: Lu-Hai Wang
2007-2012	Postdoctoral Fellow, Pharmacology, University of California, San Diego. Supervisor: Michael Karin
2012-2017	Tenured-track Assistant Professor, Department of Pathology, Carver College of Medicine, the University of Iowa
2014-Present	Secondary appointment, Department of Radiation Oncology, Carver College of Medicine, the University of Iowa
2017-2018	Associate Professor with Tenure, Department of Pathology, Carver College of Medicine, the University of Iowa
2018-Present	Associate Professor with Tenure, Department of Pathology, Immunology and Laboratory Medicine, College of Medicine, the University of Florida

#### C. Honors, Awards, Recognitions, Outstanding Achievements

1998	Outstanding Graduate from Nankai University
2001	Outstanding Graduate with Award of Top One Scholarship in the Institute of Microbiology, Chinese Academy of Sciences, China
2001	Liu Yong-Lin Scholarship for Excellence in Scientific Research, Chinese Academy of Sciences
2006	Travel award from the Mount Sinai School of Medicine

2006-2007	Postdoctoral fellowship sponsored by the Health Research Science Board of New York State Department of Health
2008-2011	Postdoctoral fellowship sponsored by the Susan Komen Breast Cancer Research Foundation
2011-2015	NIH pathway to independence award (K99/R00)
2014-2016	Holden Comprehensive Cancer Center Oberley Award
2014-2016	V Scholar Award from the V Foundation for Cancer Research
2017-2018	Holden Comprehensive Cancer Center Oberley Award
2019-present	Dr. and Mrs. James Robert Spencer Professor of Pathology, Department of Pathology, Immunology, and laboratory Medicine, University of Florida

## II. TEACHING

### A. Classroom Teaching Assignments

Year	Semester	Course #	Course Title	Responsibility in course
University of Iowa				
2013	Spring	69:270	<b>Pathogenesis of Major Human Diseases</b>	5 x 1hr facilitator sessions
2013	Fall	156:265	<b>Critical Thinking and Communication</b>	14 x 2 hr classes, Instructor
2013	Fall	069:260	<b>Translational Histopathology</b>	1 hr lecture, 1hr lab
2014	Spring	69:270	<b>Pathogenesis of Major Human Diseases</b>	5 x 1hr facilitator sessions
2014	Fall	156:265	<b>Critical Thinking and Communication</b>	9 x 2 hr classes, Instructor
2014	Fall	069:260	<b>Translational Histopathology</b>	1 x 1 hr lecture, 1hr lab
2015	Spring	077:288 069:288	<b>Molecular and Cellular Biology of Cancer</b>	2 x 1.5 hr lectures
2015	Fall	IMMU: 7221	<b>Advanced Topics Immunology</b>	10 x 1.5 hr sessions, Instructor
2015	Fall	069:260	<b>Translational Histopathology</b>	1 x 1 hr lecture
2016	Spring	IMMU: 6201:000 1	<b>Graduate Immunology</b>	3 x 1.5 hr sessions
2016	Spring	069:270	<b>Pathogenesis of Major Human Diseases</b>	5 x 1hr sessions 1 x 1hr Lecture
2016	Fall	069:260	<b>Translational Histopathology</b>	1 x 1 hr lecture
2017	Spring	IMMU: 6201:000 1	<b>Graduate Immunology</b>	3 x 1.5 hr sessions
2017	Fall	077:103	<b>Radiation Biology</b>	2 x 1 hr lecture
2017	Fall	077:288 069:288	<b>Molecular and Cellular Biology of Cancer</b>	1 x 1.5 hr lecture
2017	Fall	069:260	<b>Translational Histopathology</b>	1 x 1 hr lecture

2018	Spring	IMMU: 6201:000 1	<b>Graduate Immunology</b>	3 x 1.5 hr sessions
2018	Spring	069:270	<b>Pathogenesis of Major Human Diseases</b>	1 x 1hr Lecture
<b>University of Florida</b>				
2019	Fall	GMS6647	<b>Transcriptional and Translational Control of Cell Growth and Proliferation</b>	1x 1.5 hrs Lecture
2020	Spring	GMS6140	<b>Principles of Immunology</b>	2x 1.0 hr Lecture
2020	Fall	GMS6647	<b>Transcriptional and Translational Control of Cell Growth and Proliferation</b>	1x 1.5 hrs Lecture
2020	Spring	GMS6140	<b>Principles of Immunology</b>	3 x 1.0 hr Lecture 1 x 2.0 hr Discussion

## B. Trainees:

### Past Trainees:

#### **Students**

- 2012-2014      **Qing Xie**

Visiting Ph.D. student from Veterinary Medicine, Nanjing Agricultural University; 'CD177: a novel tumor suppressor in breast cancer tumorigenesis and metastasis.'

Current Status: Defended Thesis, Awarded Ph.D. Jan, 2015. Postdoctoral scholar, Chen laboratory, Pharmacology, University of Iowa. Jan, 2016. Associate professor, Basic medical college, Xinxiang Medical University, China
- 2013-2014      **Nicholas Borcharding**

M.S., Pathology; 'Noncanonical Wnt signaling in breast cancer initiation and progression.'

Recipient of L.B. Sims Outstanding Master's Thesis Award in the Biological Sciences, University of Iowa;

Recipient of Midwestern Association of Graduate Schools (MAGS) Distinguished Thesis Award for 2016.

Current Status: Defended Thesis, Awarded Msc, May, 2014. MSTP student, University of Iowa.
- 2014-2015      **David Kusner**

Interdisciplinary Graduate Program in Molecular and Cellular Biology

Current Status: Defended Thesis, Awarded Msc, Dec, 2015. Employed at the University of Iowa.

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|----|-----------------|----------------------------|--|
| 4. | 06/2016-06/2018 | <b>Sung Jo</b>             | M.S., Pathology Graduate Program; 'Targeting MSH2-MSH6 heterodimer in treating basal-like breast cancer.<br>Current Status: Defended Thesis, Awarded Msc June, 2018. Employed as Research Associate II, Department of Translational Sciences, Morphic Therapeutic, Boston. |
| 5. | 2015-2018       | <b>Paige Kluz</b>          | Interdisciplinary Graduate Program in Free Radical and Radiation Oncology. Defended Thesis, Awarded Ph.D., Dec, 2018.<br>Current Status: Senior Laboratory Development Specialist, R&D at HLA laboratory, the University of Wisconsin.                                     |
| 6. | 2016-2019       | <b>Nicholas Borchering</b> | Interdisciplinary Graduate Program in Molecular and Cellular Biology/MSTP (post comps); Awarded with NIH K30 training grant; Defended Thesis in Nov, 2018; Finished MSTP program in 2020.<br>Current Status: Fellow at Wash U, specialized in Pathology.                   |

**Visiting Scholar, residents and fellows:**

- |    |              |                             |  |
|----|--------------|-----------------------------|--|
| 1. | 2013-2014    | <b>Yinghong Liu, MD/PhD</b> | Associate Professor Department of Nephrology, the Second Xiangya Hospital, Central South University  |
| 2. | 2014-2015    | <b>Fang Yuan, MD/PhD</b>    | Associate Professor Department of Nephrology, the Second Xiangya Hospital, Central South University  |
| 3. | 2015-2016    | <b>Kimberly S. Cole</b>     | Pathology Fellow<br><b>Current Position:</b> Clinical Assistant Professor, Henry Ford Hospital, Department of Pathology and Laboratory Medicine, Detroit, MI 48202 |
| 4. | 2017-present | <b>Edward Cho</b>           | Mentor, Surgical Fellow, F32 training grant awardee  |

**Post-doctoral trainees:**

- |    |           |                  |  |
|----|-----------|------------------|--|
| 1. | 2012-2018 | <b>Ryan Kolb</b> | Postdoctoral fellow, Recipient of T32 training grant from the Immunology Program (PI: John Harty); Pay if category for postdoc fellowship from American Cancer Society<br>Current Position: Tenure Track Assistant Professor, Department of Pathology, Immunology, and Laboratory Medicine, University of Florida. Awardee of the NCI Transition Career Development Award (K22). |
|----|-----------|------------------|--|

2.	2016-2018	<b>Gaurav Pandey</b>	Postdoctoral fellow Current Position: Postdoctoral Fellow at the Washington University, St Louis
3.	2016-2018	<b>Kawther Ahmed</b>	Postdoctoral fellow Current Position: Assistant Professor, College of Pharmacy, University of Baghdad; Adjunct Assistant Professor, University of Iowa
4.	2019-2020	<b>Yuewan Luo</b>	Postdoctoral Fellow Current Position: Postdoc fellow, Dr. Jesper Andersen Laboratory, University of Copenhagen

#### **Residents and Fellows (mentoring Group)**

1.	2015-2017	<b>Vincent Wu</b>	Surgical Fellow, Mentoring Committee;
2.	2017-2018	<b>Boris Kiriazov</b>	Surgical Fellow, Mentoring Committee;
3.	2015-2017	<b>Allison W. Lorenzen</b>	Surgical Fellow, Mentoring Committee;

#### **Undergraduate students:**

1.	2015	<b>Seighe Edi</b>	Summer student from Lincoln University, Sophomore year.
2.	2016	<b>Louis Balczak</b>	Immunology Summer student from Coe College
3.	2015	<b>McKayla Seymour</b>	Undergraduate research assistant from University of Iowa, Sophomore year.
4.	2016-2017	<b>Zefan Qin</b>	Undergraduate research assistant from University of Iowa, Sophomore year.
5.	2017	<b>Yinan Zhang</b>	Undergraduate research assistant from Nankai University, Tianjin, China.
6.	2018	<b>Yiming Liu</b>	Undergraduate research assistant from University of Iowa, Sophomore year. Awarded ICRU Research Fellowship.
7.	2018	<b>Rainy Herakovich</b>	Immunology Summer Student from Purdue University

#### Current Trainees at University of Florida:

##### Postdoctoral Fellow

1.	2019-	<b>Myung-Chul Kim</b>	Postdoctoral Fellow
2.	2019-	<b>Jiao Mo</b>	Postdoctoral Fellow
3.	2019-	<b>Umasankar De</b>	Postdoctoral Fellow
4.	2021-	<b>Chandra Maharjan</b>	Postdoctoral Fellow

##### Visiting Scholar

1.	2019-2020	<b>Chaoyan Wu, MD</b>	Associate Professor
2.	2019-2020	<b>Haijun Yu, MD</b>	Associate Professor
3.	2021-	<b>Alaleh Anvar, DVM</b>	Volunteer

##### Graduate Students

1.	2019-	<b>Lei Wang</b>	Graduate Student, BMS-Immunology
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|----|-------|-------------------|------------------------------------|
| 2. | 2019- | <b>Zeng Jin</b>   | Graduate Student, BMS-Pharmacology |
| 3. | 2021- | <b>Blake Gill</b> | Graduate Student of Immunology     |

Undergraduate Students

- |    |       |                        |                       |
|----|-------|------------------------|-----------------------|
| 1. | 2020- | <b>Brandon Kim</b>     | Undergraduate Student |
| 2. | 2019  | <b>Daniel Koppel</b>   | Undergraduate Student |
| 3. | 2021- | <b>Rohan Master</b>    | Undergraduate Student |
| 4. | 2021- | <b>Katharine Jones</b> | Undergraduate Student |

**C. Other contributions to institutional programs**

Graduate Program Membership

- 2012-2018 **Member:** Interdisciplinary Graduate Program in Molecular and Cellular Biology, The University of Iowa
- 2012-2018 **Member:** Interdisciplinary Graduate Program in Immunology, The University of Iowa
- 2012-2018 **Member:** Medical Scientist Training Program (MSTP), The University of Iowa Carver College of Medicine
- 2013-2018 **Secondary appointment:** Free Radical and Radiation Biology Graduate Program, The University of Iowa Carver College of Medicine
- 2017-2018 **Member:** Interdisciplinary Graduate Program in Cancer Biology, The University of Iowa
- 2017-2018 **Co-Leader:** Breast Cancer Research Program, Holden Comprehensive Cancer Center, The University of Iowa
- 2017-2018 **Co-Leader:** The Cancer Genome and Pathway Program, Holden Comprehensive Cancer Center, The University of Iowa
- 2019- **Member:** Biomedical Sciences Graduate Program, Immunology and Cancer Biology Concentrations, The University of Florida Health Cancer Center.

Participation in Training Grants

- Immunology Post-doctoral Fellowship Training Grant
- Immunology Pre-doctoral Fellowship Training Grant
- Surgical Oncology Research Training Program
- Free Radical and Radiation Oncology Training Grant

Other teaching activities

**Graduate student research rotations:**

- |     |           |  |                             |
|-----|-----------|--|-----------------------------|
| 1.  | 2012      | <b>Nicholas Borcharding</b>  | M.S. Student, Pathology     |
| 2.  | 2012-2013 | <b>Adam Koch</b>   | M.S. Student, Pathology     |
| 3.  | 2013      | <b>Kaylia Duncan</b>   | Ph.D. Student, MCB Program  |
| 4.  | 2013      | <b>Magdalene Ameka</b>   | Ph.D. Student, MCB Program  |
| 5.  | 2013-2014 | <b>David Kusner</b>  | Ph.D. Student, MCB Program  |
| 6.  | 2015      | <b>Paige Kluz</b>  | Ph.D. Student, FRRB Program |
| 7.  | 2015      | <b>Adrienne Klinger</b>  | Ph.D. Student, FRRB Program |
| 8.  | 2015      | <b>Nicholas Borcharding</b>  | MSTP Student, MCB program   |
| 9.  | 2016      | <b>Sung Jo</b>   | M.S. Student, Pathology     |
| 10. | 2019      | <b>Claudia Mercado</b>   | Cancer Biology, BMS, UFL    |
|     |           | <b>Rodriguez</b>   |                             |
| 11. | 2021      | <b>Blake Gill; Chayil Lattimore; Ppeoluwa Iwaloye; Destiny Davis</b> | Immunology, BMS, UFL        |

#### Graduate student thesis committees at University of Iowa:

1.	2013-2014	<b>Nicholas Borcherding</b>	<b>PI: Zhang;</b> M.S. Student, Pathology
2.	2013-2014	<b>Adam Koch</b>	PI: Simon-Burnett; M.S. Student, Pathology
3.	2013-2017	<b>Maina Peterson</b>	PI: Hank Qi; Ph.D. Student, MCB Program
4.	2013-2015	<b>Jung-Min Park</b>	PI: Weigel; M.D./Ph.D. student, MSTP program
5.	2014-2016	<b>Jeanine Schibler</b>	PI: Goel; Ph.D. student, MCB program
6.	2014-2016	<b>Wadie Daniel</b> <b>Mahauad Fernandez</b>	PI: Okeoma; Ph.D. student, MCB program
7.	2014-2016	<b>Aditya Stanam</b>	PI: Simons-Burnett; Ph.D. student, Toxicology program
8.	2014-2015	<b>David Kusner</b>	<b>PI: Zhang.</b> MCB Graduate student
9.	2015-2017	<b>Sarah Hall</b>	PI: Munir Tanas. Pathology M.S. student
10.	2015-2016	<b>Alania Foxx</b>	PI: Simon-Burnett. Toxicology Graduate Program student
11.	2015-2018	<b>Paige Kluz</b>	<b>PI: Zhang. FRRB Graduate student</b>
12.	2016-2018	<b>Vivian W. Gu</b>	PI: Weigel. Physiology
13.	2016-2018	<b>Emma Hornick</b>	PI: Sutterwala. Immunology program
14.	2016-2018	<b>Tiffany Lim</b>	PI: Wilson. Immunology program
15.	2016-2018	<b>Madelyn M. Espinosa-Cotton</b>	PI: Simon-Burnett. FRRB program
16.	2016-2018	<b>Nicholas Borcherding</b>	<b>PI: Zhang.</b> Cancer Biology Program
17.	2016-2018	<b>Rachael Dahl</b>	PI: Simon-Burnett. Pathology M.S. student
18.	2016-2018	<b>Sung Jo</b>	<b>PI: Zhang.</b> Pathology M.S. student
19.	2017-2018	<b>Ajaykumar</b> <b>Vishwakarma</b>	<b>PI: Zhang.</b> Cancer Biology Program

#### Graduate student thesis committees at University of Florida:

20.	2019-	<b>Aaron Waddell</b>	<b>PI: Liao. BMS program Cancer centration</b>
21.	2019-	<b>Alex Kwiatkowski</b>	<b>PIs: Avram and Keselowsky</b>
22.	2019-	<b>Lei Wang</b>	<b>PI: Zhang</b>
22.	2019-	<b>Jing Pei</b>	<b>PI: Zhou</b>
23.	2019-	<b>Jin Zeng</b>	<b>PI: Zhang</b>
24.	2020-	<b>Kumar Saikat Poddar</b>	<b>PI: Zheng</b>
25.	2020-	<b>Nan Hua</b>	<b>PI: Zhou</b>

#### Mentoring Faculty Members:

Daniel Perry, Seung-Chul Choi

#### Graduate Comprehensive Exam Committees:

Maina Peterson, Jung-Min Park, Wadie Daniel Mahauad Fernandez, Aditya Stanam, Vivian W. Gu, Madelyn M. Espinosa-Cotton

#### Journal clubs:

Cancer Immunotherapy Journal Clubs, Faculty for this informal, interest-based journal clubs.

#### Graduate student recruitment and rotation talks:

2014, 2015, 2016, 2017 graduate student recruitment talks for MCB, FRRB, Immunology, and Cancer biology programs.

#### University of Iowa Educational Seminars:

1. **Weizhou Zhang.** Tumor-initiating cells, tumor initiation, and beyond. Department of Pharmacology, University of Iowa, 10/2012.
2. **Weizhou Zhang.** Tumor-initiating cells, tumor initiation, and beyond. Pathology Research day, University of Iowa, 11/2012.
3. **Weizhou Zhang.** Tumor-initiating cells in breast cancer. Breast Cancer Research Interest Group, University of Iowa, 11/2012.
4. **Weizhou Zhang.** Identification of signaling pathways bridging tumor-initiating cells and metastasis. MCB program, University of Iowa, 02/2013.
5. **Weizhou Zhang.** A NIK-IKK $\alpha$  module expands ErbB2-induced tumor-initiating cells. Holden Comprehensive Cancer Center Retreat. University of Iowa. 06/2013.
6. **Weizhou Zhang.** Myofibroblasts, T cells and malignant cells interplay in breast cancer metastasis. Prostate Cancer Research Group. Holden Comprehensive Cancer Center, University of Iowa. 06/2013.
7. **Weizhou Zhang.** CD177, a novel tumor- and metastasis-suppressor? The Free Radical and Radiation Oncology Biology program, University of Iowa. 09/2013.
8. **Weizhou Zhang.** Developing anti-ROR1 immunotoxin to treat basal breast cancer. CGCG Roundtable seminar series, Holden Cancer Center, The University of Iowa/Carver College of Medicine. 01/2014.
9. **Weizhou Zhang.** CD177 in neutrophils and Cancer. Immunology program seminar, 02/2014.
10. **Weizhou Zhang.** Tumor microenvironment in breast cancer. 11/14. Inflammation program seminars. University of Iowa. 11/2014.
11. **Weizhou Zhang.** Obesity-associated Nlr4 inflammasome promotes angiogenesis in breast cancer. Holden Comprehensive Cancer Center Grand Rounds, University of Iowa. 10/2015.
12. **Weizhou Zhang.** CD177 is a novel tumor suppressor in breast cancer. Prostate Cancer Research Program. University of Iowa. 01/2016.
13. **Weizhou Zhang.** Tumor microenvironment and breast cancer. Metastasis Research Group. University of Iowa. 03/2016.
14. **Weizhou Zhang.** Obesity, Inflammation and Angiogenesis. Metastasis Research Group. University of Iowa. 08/2016.
15. **Weizhou Zhang.** Tumor microenvironment and breast cancer. Pathology Grant Round. University of Iowa. 09/2016.
16. **Weizhou Zhang.** Age-associated CD177-mediated metabolic control of mammary stem cells, cancer progression and therapy response. Holden Comprehensive Cancer Center Ground Rounds. 11/2016.
17. **Weizhou Zhang.** Microenvironment and breast cancer. Pulmonary Conference Grant Round. University of Iowa. 12/2016.
18. **Weizhou Zhang.** Inflammation, anti-cancer immunity and cancer. Interview Weekend for Cancer Biology Graduate Students. 02/17.
19. **Weizhou Zhang.** CD177 in Breast Cancer-implications in immunotherapy. Translational Research Meeting, Sarcoma Research Group. 02/17.
20. **Weizhou Zhang.** **Tumor microenvironment and breast cancer. Metastasis Group Meeting. 03/18**
21. **Weizhou Zhang.** **Inflammation, anti-cancer immunity and cancer. Research seminar for Summer Students. 07/2017.**
22. **Weizhou Zhang.** Heterogeneity of cancer-associated regulatory T cells and implications in immunotherapy. Breast Cancer Research Group. 08/17.
23. **Weizhou Zhang.** The cell-type specific functions of CD177 in cancer and immunity. Toxicology/EHSRC Research Seminar. 09/17.



### University of Florida Educational Seminars:

1. Obesity-Related NLRC4 Inflammasome Activation and Angiogenesis in Breast Cancer, 01/2019, MOO program, UFHCC;
2. Lineage-specific functions of CD177 in the tumor microenvironment. 01/2019. UFHCC Topics in Cancer Seminar Series.
3. Modulating cancer genetics in cancer therapy and immunotherapy. 02/2019. Oncolimmunology Group, UFHCC.
4. CRISPR baby, what is next for gene editing? 03/2019. Pathology WiP Ethics.
5. Introduction of the Zhang laboratory. 05/2019. Pathology WIP Research Presentation.
6. Canonical and non-canonical Wnt signaling in breast cancer. Anatomy and Cellular Biology. Department seminar series. 08/27/2019.
7. Understanding human cancer Tregs and targeting Tregs for cancer immunotherapy. Oncolimmunology Group, UFHCC. 08/28/2019.
8. Understanding human cancer Tregs and targeting Tregs for cancer immunotherapy. UFHCC Cancer Center Grand Round series. 10/2/2019.
9. Targeting cancer regulatory T cells. Pathology Grand Rounds Series. UF COM 07/01/2020
10. Targeting cancer regulatory T cells. Target Therapeutics Research Group, UFHCC. 07/09/2020
11. Targeting different molecular targets for breast cancer therapy. Breast Cancer Retreat. UFHCC. 11/09/2020.
12. Proteolysis Targeting Chimera induced BCL-XL degradation in immune modulation and cancer therapy. Pathology Grand Rounds Series. UF COM 03/01/2021

### III. SCHOLARSHIP/PROFESSIONAL PRODUCTIVITY

#### A. Publications

#### **Peer-reviewed papers and reviews, listed 72 published papers/book chapters and 80 total:**

As of 04/09/2021, the published work has received:

6208 career citations/3369 since 2016

h - index = 37

i10-index = 53

#### Color Key:

- GREEN** Graduate Student  
Chinese Academy of Science (M.S.), and Mount Sinai School of Medicine (Ph.D.)
- RED** Postdoctoral fellow  
Department of Pharmacology,  
University of California, San Diego
- Purple** Assistant Professor  
Department of Pathology  
University of Iowa
- Brown** Associate Professor  
Department of Pathology  
University of Iowa/University of Florida

#### **Graduate Student (13)**

1. **Weizhou Zhang**, Wenyang Mao, Yanfen Xue, Yanhe Ma, Peijing Zhou. The diversity of alkaliphiles from hailaer soda lake, Inner Mongolia. *Biodiversity Sciences*, 2001, 9(1): 44-50.

2. **Weizhou Zhang**, Yanfen Xue, Yanhe Ma, Antonio Ventosa, William D. Grant, Peijing Zhou. *Marinospirillum alkaliphilum* sp. nov., a new alkaliphilic helical bacterium from Haoji soda lake in Inner Mongolia Autonomous Region of China. *Extremophiles*. 2002, Feb; 6(1): 33-7. Impact factor: 2.165. Cited times: 20.
3. **Weizhou Zhang**, Yanfen Xue, Yanhe Ma, Peijing Zhou, Antonio Ventosa, William D. Grant. *Salinicoccus alkaliphilus* sp. nov., a novel alkaliphile and moderate halophile from Baer Soda Lake in Inner Mongolia Autonomous Region, China. *International Journal of Systematic and Evolutionary Microbiology*. 2002, May; 52(Pt 3): 789-93. Impact factor: 2.873.
4. Yanhe Ma, **Weizhou Zhang**, Yanfen Xue, Peijing Zhou, Antonio Ventosa, William D. Grant. Bacterial diversity of the Inner Mongolian Baer Soda Lake as revealed by 16S rRNA gene sequence analyses. *Extremophiles*. 2004, Feb;8(1): 45-51. Impact factor: 2.165.
5. Dapeng Zhao, **Weizhou Zhang**, Yanfen Xue and Yanhe Ma. *Amphibacillus haojiensis* sp. nov.--A novel Alkaliphilic and Slight Halophilic Bacterium from Haoji Soda Lake in Inner Mongolia Autonomous Region, China. 2004, *ACTA MICROBIOLOGICA SINICA*. 44(6): 720-723.
6. Pablo López-Bergami, Hasem Habelhah, Anindita Bhoomik, **Weizhou Zhang**, Lu-Hai Wang, and Ze'ev Ronai. Receptor For Activated C Kinase 1 mediates activation of Jun N-terminal Kinase by Protein Kinase C. *Molecular Cell*. 2005, Aug 5;19(3):309-20. PMID: 16061178; PMCID: PMC2953422. Impact factor: 14.971.
7. **Weizhou Zhang**, Cong S. Zong, Ulrich Hermanto, Pablo Lopez-Bergami, Ze'ev Ronai and Lu-Hai Wang. RACK1 Recruits STAT3 Specifically to Insulin and IGF-1 Receptors for Activation, Which Is Important for Regulating Anoikis and Anchorage Independent Growth. *Molecular and Cellular Biology*. 2006, Jan; 26(2):413-24. PMID: 16382134; PMCID: PMC1346890. Impact factor: 6.773.
8. George Z. Cheng, Joseph Chan, Calvin D. Sun, Qi Wang, **Weizhou Zhang** and Lu-Hai Wang. Twist transcriptionally upregulates AKT2 in breast cancer cells leading to increased migration, invasion and resistance to paclitaxel. *Cancer Research*. 2007, Mar 1;67(5):1979-87. PMID: 17332325. Impact factor: 8.036.
9. Kathryn Masker, Alicia Golden, Christian J. Gaffney, Virginia Mazack, William F. Schwindinger, **Weizhou Zhang**, Lu-Hai Wang, David J. Carey, Marius Sudol. Transcriptional profile of Rous Sarcoma Virus transformed chicken embryo fibroblasts reveals new signaling targets of viral-src. *Virology*. 2007, 364(1): 10-20. PMID: 17448517; PMCID: PMC1974879. Impact factor: 3.357.
10. George Z. Cheng, Sungman Park, Shaokun Shu, Lili He, William Kong, **Weizhou Zhang**, Zengqiang Yuan, Lu-Hai Wang, Jin Q. Cheng. Advances of AKT pathway in human oncogenesis and as a target for anti-cancer drug discovery. *Current Cancer Drug Targets*, 2008, Feb;8(1):2-6. PMID: 18288938. Impact factor: 4.316.
11. George Cheng\*, **Weizhou Zhang**\*, Lu-Hai Wang. Regulation of cancer cell survival, migration and invasion by TWIST:AKT2 comes to interplay. *Cancer Research*. 2008, Feb 15; 68(4):957-60. (\* equal contribution). PMID: 18281467. Impact factor: 8.036.
12. George Z. Cheng\*, **Weizhou Zhang**\*, Sun M, Qi Wang, Coppola D, Costanzo C, Xu LM, Joseph Chan, Jinqun Cheng, Lu-Hai Wang. Twist is Transcriptionally Induced by Activation of STAT3 and Mediates STAT3 Oncogenic Function. *Journal of Biological Chemistry*. 2008, Mar. 283(21): 14665-14673 (\* equal contribution). PMID: 18353781; PMCID: PMC2386910. Impact factor: 5.575.
13. **Weizhou Zhang**\*, George Z. Cheng\*, Ulrick Hermanto, Cong S. Zong, Jin Q. Cheng and Lu-Hai Wang. RACK1 and CIS mediate the degradation of BimEL in cancer cells. *Journal of Biological Chemistry*. 2008, Apr; 283(4): 16416-16426. (\* equal contribution). PMID: 18420585; PMCID: PMC2423247. Impact factor: 5.575.

## **Postdoctoral Fellow (12)**

14. Atsushi Matsuzawa, Ping-Hui Tseng, Sivakumar Vallabhapurapu, Jun-Li Luo, **Weizhou Zhang**, Haopeng Wang, Dario A.A. Vignali, Ewen Gallagher, Michael Karin. Essential cytoplasmic translocation of a cytokine receptor-assembled signaling complex. *Science*, 2008, 321(5889):663-8. PMID: 18635759; PMCID: PMC2669719. Impact factor: 30.268.
15. Sivakumar Vallabhapurapu, Atsushi Matsuzawa, **Weizhou Zhang**, Ping-Hui Tseng, Jonathan J. Keats, P. Leif Bergsagel and Michael Karin. TRAF2 and TRAF3 carry out non-redundant and complementary functions to activate IKK-dependent alternative NF- $\kappa$ B signaling. *Nature Immunology*. 2008, 9(12):1364-70. PMID: 18997792; PMCID: PMC2671996. Impact factor: 26.247.
16. Thomas Enzler\*, Arnon P. Kater\*, **Weizhou Zhang\***, George F. Widhopf II, Han-Yu Chuang, Jason Lee, Esther Avery, Carlo M. Croce, Michael Karin, Thomas J. Kipps. Chronic B-Cell leukemia of E $\mu$ -*TCL1* transgenic mice undergoes rapid cell-turnover that can be offset by extrinsic CD257 to accelerate disease progression. *Blood*. 2009, 114(20):4469-76. PMID: 19755673. (\* equal contribution). Impact factor: 9.900.
17. Ping-Hui Tseng, Atsushi Matsuzawa, **Weizhou Zhang**, Takashi Mino, Dario A. Vignali, Michael Karin. Different modes of ubiquitination of the adaptor TRAF3 selectively activate the expression of type I interferons and proinflammatory cytokines. *Nature Immunology*. 2010, Jan;11(1):70-5. PMID: 19891473; PMCID: PMC2872790. Impact factor: 25.668.
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83. Myung-Chul Kim, Nicholas Borcharding, Kawther K Ahmed, Andrew P Voigt, Ajaykumar Vishwakarma, Ryan Kolb, Paige N Kluz, Gaurav Pandey, Umasankar De, Theodore Drashansky, Eric Y Helm, Xin Zhang, Katherine N Gibson-Corley, Julia Klesney-Tait, Yuwen Zhu, Jinglu Lu, Jinsong Lu, Xian Huang, Hongrui Xiang, Jinke Cheng, Dongyang Wang, Zheng Wang, Jian Tang, Jiajia Hu, Zhengting Wang, Hua Liu, Mingjia Li, Haoyang Zhuang, Dorina Avram, Daohong Zhou, Rhonda Bacher, Song Guo Zheng, Xuefeng Wu, Yousef Zakharia, Weizhou Zhang. CD177 modulates the function and homeostasis of tumor-infiltrating regulatory T cells. *Nature Communications.* 2021 Oct 1;12(1):5764. PMID: 34599187. PMCID: PMC8486774.

84. Dongwen Lv, Pratik Pal, Xingui Liu, Qi Zhang, Dinesh Thummuri, Peiyi Zhang, Wanyi Hu, Jing Pei, Yannan Jia, Shuo Zhou, Sajid Khan, Xuan Zhang, Wen Li, Nan Hua, Qingping Yang, Sebastian Arango, **Weizhou Zhang**, Digant Nayak, Shaun K. Olsen, Susan T. Weintraub, Robert Hromas, Marina Konopleva, Yaxia Yuan, Guangrong Zheng, and Daohong Zhou. Development of a BCL-xL and BCL-2 dual degrader with improved anti-leukemic activity. *Nature Communications.* 2021. In press.

85. Eric Y. Helm, Xianghong Chen, Beatrice Zitti, Timothy Holmes, Christine Tao, Alex Kwiatkowski, Theodore T. Drashansky, Joseph Dean, Benjamin G. Keselowsky, Weizhou Zhang, Zhiguang Huo, Inna Smalley, Keiran Smalley, Liang Zhou, Yenan T. Bryceson and Dorina Avram. The transcription factor Bcl11b restricts memory CD8+ T cell residency program and sustains tissue exit program in infection and cancer. *Science Immunology.* 2021. Submitted.

86. Myung-Chul Kim, Zeng Jin, Ryan Kolb, Nicholas Borcharding, Jonathan Alexander Chatzkel, Sara Moscovita Falzarano, and Weizhou Zhang. Immunotherapeutic updates and immune landscape shaped by single-cell RNA sequencing in clear cell renal cell carcinoma. *Cancers.* 2021. In revision.

87. Chandra K. Maharjan, Jiao Mo, Lei Wang, and Weizhou Zhang. Natural and Synthetic Estrogens in Chronic Inflammation and Breast Cancer. *Cancers.* 2021. Submitted.

#### **Book Chapters:**

88. **Weizhou Zhang**, Nicholas Borcharding, Ryan Kolb. Interleukin-1 signaling in tumor microenvironment. *Adv Exp Med Biol.* 2020; 1240:1-23. doi: 10.1007/978-3-030-38315-2\_1. PMID: 32060884.

89. Ryan Kolb, Nicholas Borcharding, **Weizhou Zhang**. Understanding and targeting human cancer regulatory T cells to improve cancer therapy. *T Regulatory Cells in Human Health and Diseases.* *Adv Exp Med Biol.* 2021;1278:229-256. PMID: 33523451.

#### **Patents:**

1. **Weizhou Zhang**, Ryan Kolb. Anti-angiopoietin-like 4 (Angptl4) antibodies and methods of use. 2019. Application Number: 62/927,289.

2. **Weizhou Zhang**, Guangrong Zheng, Daohong Zhou, Yufeng Xiao. Targeting nr4a1 using proteolysis targeting chimeras. 2020. Ref. No.: T18293US001.

**B. Abstracts/Meeting presentations:**

1. Weizhou Zhang and Lu-Hai Wang. Receptor for activated C kinase 1 (RACK1) plays an important role in insulin-receptor-mediated STAT3 activation. 20<sup>th</sup> Oncogene meeting, Frederick MD, 2004.
2. Weizhou Zhang and Lu-Hai Wang. RACK1 Recruits STAT3 Specifically to Insulin and IGF-1 Receptors for Activation, Which Is Important for Regulating Anoikis and Anchorage Independent Growth. Protein Phosphorylation and Cell Signaling meeting, Cold Spring Harbor Laboratories, 2005.
3. Weizhou Zhang, George Zhi Cheng, Jianli Gong, Jinquan Cheng and Lu-Hai Wang. RACK1 and CIS mediate the degradation of BimEL in cancer cells. Oral Presentation. The Health Research Science Board of New York State Department of Health, Albany, NY, 2007.
4. Thomas Enzler, George F. Widhopf, Jason Lee, Weizhou Zhang, Carlo M. Croce, Michael Karin, and Thomas J. Kipps. BAFF Accelerates Development of Chronic Lymphocytic Leukemia in TCL1 Transgenic Mice. Blood (ASH Annual Meeting Abstracts), Nov 2007; 110: 1117.
5. Thomas Enzler\*, Weizhou Zhang\*, Arnon P Kater, George F. Widhopf, Carlo M. Croce, Michael Karin, and Thomas J. Kipps. BAFF can promote leukemogenesis induced by other proto-oncogenes by enhancing neoplastic B cell survival. Oral presentation at 2008 ASH Annual Meeting. (\*equal contribution).
6. Weizhou Zhang\*, Arnon P. Kater\*, Han-Yu Chuang, Thomas Enzler, George F. Widhopf II, Danelle F. James, Ping-Hui Tseng, Harvey Herschman, Thomas J. Kipps, Michael Karin. c-Myc expression is regulated by BAFF and is involved in the progression of chronic lymphocytic leukemia (CLL). Oral presentation at International Workshop On Chronic Lymphocytic Leukemia 2009 (IWCLL). (\*equal contribution).
7. Weizhou Zhang\*, Arnon P. Kater\*, Han-Yu Chuang, Thomas Enzler, George F. Widhopf II, Danelle F. James, Ping-Hui Tseng, Harvey Herschman, Thomas J. Kipps, Michael Karin. c-Myc expression is regulated by BAFF and is involved in the progression of chronic lymphocytic leukemia (CLL). Oral presentation at International Workshop On 2009 ASH Annual Meeting. (\* equal contribution).
8. Borcharding N., Xie Q., Li W., Weizhou Zhang. (2012, November). Transcriptome Analysis of ErbB2 mouse tumors. Presented at the annual Department of Pathology Research Day at the University of Iowa Carver College of Iowa Carver College of Medicine.
9. Weizhou Zhang. A NIK-IKK $\alpha$  module expands ErbB2-induced tumor-initiating cells. Oral presentation and poster abstract. Holden Comprehensive Cancer Center Retreat. 06/2013.
10. Nick Borcharding, Qing Xie, Wei Li, Ryan Kolb, Weizhou Zhang. Transcriptome analysis of ErbB+ mammary tumors from basal and luminal tumor-initiating cell populations. Poster abstract. Won the travel award. Holden Comprehensive Cancer Center Retreat. 06/2013.
11. Borcharding N., Xie Q., Kolb R., Li W., Weizhou Zhang. (2013, June). Wnt5a, a basal-specific tumor suppressor in ErbB2+ Breast Cancer. Presented at the annual Holden Comprehensive Cancer Center Retreat at the University of Iowa Carver College of Medicine.
12. Borcharding N., Xie Q., Kolb R., Li W., Weizhou Zhang. (2013, July). Wnt5a, a basal-specific tumor suppressor in ErbB2+ Breast Cancer. Presented at the annual Holden Comprehensive Cancer Center Stewardship Event at the University of Iowa Carver College of Medicine.
13. Borcharding N., Xie Q., Kolb R., Li W., Weizhou Zhang. (2013, November). ROR1/WNT5a axis role in Breast Cancer initiation and progression. Presented at the annual Department of Pathology Research Day at the University of Iowa Carver College of Medicine.
14. Kolb, R., Liu, Y., Xie, Q., Borcharding, N., Li, W., Weizhou Zhang. (2013, November). A Potential Role for Obesity-Induced Inflammasome Activation in Breast Cancer Progression. Presented at the annual Department of Pathology Research Day at the University of Iowa Carver College of Medicine.

15. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2014, March). Wnt5a/ROR1 Axis in Triple Negative Breast Cancer Progression and Potential Therapy. Presented at the annual Jakobsen Conference at the University of Iowa Graduate College.
16. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2014, April). Wnt5a/ROR1 Axis in Triple Negative Breast Cancer Progression and Potential Therapy. Presented at the American Association for Cancer Research Annual Meeting in San Diego, CA.
17. Kolb, R., Liu, Y., Xie, Q., Borcharding, N., Li, W., Weizhou Zhang. (2014, April). Inflammasome activation in obesity-associated breast cancer progression. Presented at the American Association for Cancer Research Annual Meeting in San Diego, CA.
18. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2014, April). ROR1, Targeting Cancer Stem Cells in Basal-like Breast Cancer. Presented at the 2014 Health Sciences Research Week at the University of Iowa Carver College of Medicine.
19. Xie, Q., Borcharding, N., Kolb, R., Weizhou Zhang. (2014, April). CD177, A novel Metastasis Suppressor of Breast Cancer. Presented at the American Association for Cancer Research Annual Meeting in San Diego, CA.
20. Kolb, R., Liu, Y., Xie, Q., Borcharding, N., Knudson, M., Sutterwala, S., Weizhou Zhang. (2014, May). Metformin, inflammasome activation and the IL-1/IL1R1 axis in obesity associated breast cancer progression. Presented at the Midwest Postdoctoral Research Forum at the University of Iowa, Iowa City IA.
21. Kolb, R., Liu, Y., Xie, Q., Borcharding, N., Knudson, M., Sutterwala, S., Weizhou Zhang. (2014, June). Metformin, inflammasome activation and the IL-1/IL1R1 axis in obesity associated breast cancer progression. Presented at the annual Holden Comprehensive Cancer Center Retreat at the University of Iowa Carver College of Medicine.
22. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2014, June). ROR1, Targeting Cancer Stem Cells in Basal-like Breast Cancer. Presented at the annual Holden Comprehensive Cancer Center Retreat at the University of Iowa Carver College of Medicine.
23. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2014, September). Paracrine Wnt5a signaling inhibits the expansion of Basal tumor-initiating cells. Presented at the annual Medical Student Research Day at the University of Iowa Carver College of Medicine.
24. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2014, October). Paracrine Wnt5a signaling inhibits the expansion of tumor-initiating cells via Ryk/TGF $\beta$ R/Smad2. Presented at the annual Department of Pathology Research Day at the University of Iowa Carver College of Medicine.
25. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2015, April). Paracrine Wnt5a signaling inhibits the expansion of tumor initiating cells via Ryk/TGF $\beta$ R/Smad2. Presented at 2015 Health Sciences Research Week at the University of Iowa Carver College of Medicine.
26. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2015, April). Paracrine Wnt5a signaling inhibits the expansion of tumor initiating cells via Ryk/TGF $\beta$ R/Smad2. Presented at the ASCI/AAP/APSA Annual Joint Meeting in Chicago, IL.
27. Kolb, R., Borcharding, N., Liu, Y., Yuan, F., Xie, Q., Sutterwala, F., Weizhou Zhang. (2015, April). NLRC4 inflammasome promotes breast cancer progression in diet-induced obese mice. Presented at the American Association for Cancer Research Annual Meeting in Philadelphia, PA.
28. Borcharding, N., Kusner, D., Kolb, R., Xie, Q., Weizhou Zhang. (2015, June). Paracrine Wnt5a signaling inhibits the expansion of basal tumor initiating cells. Presented at the annual Holden Comprehensive Cancer Center Retreat at the University of Iowa Carver College of Medicine.
29. Borcharding, N., Bormann, N., Kusner, D., Kolb, R., Weizhou Zhang. (2015, September). ROR1, an oncogenic target for basal-like breast cancer. Presented at the annual Medical Student Research Day at the University of Iowa Carver College of Medicine.

30. Kolb, R., Phan, L., Borcharding, N., Liu, Y., Yuan, F., Janowski, A.M., Xie, Q., Markanm K., Li, W., Potthoff, M., Fuentes-Mattei, E., Ellies, L., Knudson, M., Lee, M., Yeung, S., Cassel, S., Sutterwala, F., & Zhang, W. (2016, January). Obesity-induced Nlr4 inflammasome promote angiogenesis in breast cancer. Presented at the AACR Special Conference: The Function of Tumor Microenvironment in Cancer in San Diego, CA.
31. Borcharding, N., Jo, S., Zhang, W. Targeting mismatch repair in immunotherapy for basal-like breast cancer (2017, January). Presented at the Holden Comprehensive Center Translational Conference at the University of Iowa.
32. Borcharding, N., Jo, S., Zhang, W. Targeting mismatch DNA repair in basal-like breast cancer (2017, June). Presented at the Holden Comprehensive Cancer Center retreat at the University of Iowa.
33. Borcharding, N., Jo, S., Zhang, W. Targeting mismatch DNA repair in basal-like breast cancer (2017, April). Presented at the Health Sciences Research Week conference at the University of Iowa.
34. Borcharding, N., Jo, S., Zhang, W. Targeting mismatch repair in aggressive basal-like breast cancer (2017, February). Presented at the Biomedical Program conference at the University of Iowa.
35. Borcharding, N., Jo, S., Zhang, W. Targeting mismatch repair in aggressive basal-like breast cancer (2017, February). Presented at the Medical Scientist Training Program annual I Heart Science conference at the University of Iowa.
36. Borcharding N., Cole, L., Kluz, P., Kolb, R., Belizzi, A., & Zhang, W. The Potential Dichotomous Functions of  $\beta$ -Catenin in Breast Cancer Molecular Subtypes (2016, November). Presented during the Pathology Department Research Day at University of Iowa.
37. Kolb, R., Kluz, P., Wei, T.Z., Bormann, N., Borcharding, N., Markan, K., Pothoff, B., Tan, N.S., Sutterwala, F., & Zhang W. (2017, February). IL-1 $\beta$  promotes obesity-driven breast cancer progression through the upregulation of Angptl4 in adipocytes. Presented at Inflammation-driven Cancer: Mechanisms to Therapy Keystone Symposia in Keystone, CO.

### C. Areas of Research of Interest and Current Projects:

Please complete information, please visit our lab website: <https://zhanglab.pathology.ufl.edu/>

The Zhang Laboratory has long-standing interest in breast cancer-related basic and translational research. The lab has been expanding on several new projects critically addressing current clinical complications in breast-cancer progression, prevention and therapy. The lab has been working on both cancer-cell intrinsic signaling pathways and tumor microenvironment (TME), with special focuses on:

1) How immune system controls or promotes breast cancer under comorbid conditions such as obesity and diabetes *etc.*;

The first project defined a unique interaction between obesity and breast-cancer progression by stimulating cancer-infiltrating macrophages, and the subsequent inflammasome/interleukin-1 $\beta$  activation (funded by a V Scholar Grant from V Foundation for Cancer Research and a R01 Grant from NIH). We continue to understand how inflammasome is activated under obesity and how IL-1 $\beta$  passes obesity-specific signals to neoangiogenesis in cancer.

2) How two layers of mammary epithelial cells interact during normal physiology and breast cancer; Our research in the 2nd project defines two different populations of cell-of-origins for HER2-induced breast cancer, from both luminal and basal mammary epithelial cells. We identified a novel tumor suppressor CD177 that is expressed on surface of both lineages and inhibits tumorigenesis and relapse (funded by a R01 Grant from NIH). We further found that these two layers of mammary epithelial cells regulate each other by initiating a paracrine none canonical Wnt5A signaling that provides inhibitory signal to basal cells under the context of tumor initiation. We have built strong expertise in the field of breast cancer, inflammation and cancer immunology.

3) How cancer genetics/epigenetics interact with immune system to modulate cancer pathogenesis and immunotherapy.

We have identified that mismatch repair pathway is critical for basal-like breast cancer pathogenesis and progression. Most importantly, we found that genetic inhibition of this DNA repair pathway leads to altered immune cell composition in breast cancer, which could be potentially sensitizing basal like breast cancer to immunotherapy (recently funded by CDMRP, breast cancer breakthrough grant level 1 with Maria Spies with partnering PI).

4) The role of TREM-1 in immune regulation and breast cancer metastasis. Dr. Klesney-Tait and our laboratory have been collaborating on this project for several years and yielded outstanding preliminary data to support the current proposal. The two laboratories have distinct yet overlapping interests and expertise that are essential to move this project forward as a team. We will explore the mechanism how TREM-1 contributes to metastasis from innate immune cells to modulate the activity of adaptive immune cells.

In addition, the lab has several novel projects that are under development in renal cancer:

5) Determining the heterogeneity of cancer-infiltrating regulatory T cells using single cell RNA sequencing;

We have identified CD177 to be expressed by human cancer-infiltrating regulatory T cells. Here we plan to study the genetics of heterogeneous Tregs in human cancer, the role of Tregs in cancer pathogenesis, as well as in immunotherapy.

We are also developing other ways to inhibit cancer Tregs including targeting BCLXL and NR4A1 using Proteolysis-targeting chimera (PROTAC)-based therapeutics

6) Using bioinformatics to define heterogeneity of cancer-infiltrating immune cells from single cells RNA sequencing datasets.

#### **D. Published reviews of scholarship**

N/A

#### **E. Grants received**

##### **Current Research Support**

**1. R01 CA200673 (PI: ZHANG, Weizhou, 20% effort and support) \$1,143,750.00 12/01/2015-11/30/2021, NCE**

NIH/National Cancer Institute

Title: Obesity, inflammation and breast cancer

Goal: To study the mechanism how obesity promotes breast cancer progression via inflammation and angiogenesis.

**2. R01 CA203834 (PI: ZHANG, Weizhou, 20% effort and support) \$1,143,750.00 07/01/2016-06/30/2021**

NIH/National Cancer Institute

Title: CD177 suppresses breast-cancer development by inhibiting beta-catenin

Goal: To study the mechanism how CD177 suppresses breast cancer via a protein complex involving adherens junctions and other protein complex.

**3. Breast Cancer Research Program, Breakthrough Level 1. (PD/PI: Weizhou Zhang; Maria Spies). \$600,000.00. Awarded. 04/01/2019-03/31/2022**

CDMRP/DOD

Title: Modulating cancer genetics for immune regulation and breast cancer therapy.

Goal: To study the role of MSH2/6 heterodimer in immune regulation during breast cancer pathogenesis and therapy.

**4. Sjögren's Foundation High Impact Research Grant (co-PIs: Seunghee Cha, Weizhou Zhang and Akaluck Thatayatikom).**

75,000\$ 09/01/2020-08/31/2021

Sjogren's Foundation

Title: Integrated transcriptomic profiling of recurrent parotitis in pediatric Sjögren's syndrome for assessment of mitochondrial RNA regulators

Goal: To study the transcriptomic profiling of recurrent parotitis in pediatric Sjögren's syndrome

**5. R01 CA248371 (PI: Ting-Yuan Cheng; Co-I: Weizhou Zhang, 5% effort) 04/01/2021-03/30/208**

NIH/National Cancer Institute

Title: Energy Balance, mTOR pathway signaling, and breast cancer prognosis

Goal: To study the molecular epidemiology between energy balance, mTOR pathway, and breast cancer prognosis.

**6. Breast Cancer Research Program, Breakthrough Level 1. (PD/PIs: Weizhou Zhang; Guangrong Zheng). Total direct: 750,000.00\$; 11/1/2020-10/31/2023**

CDMRP/DOD

Title: Developing a novel PROTAC-based NR4A1 degrader for breast-cancer therapy.

Goal: To develop a novel PROTAC-based NR4A1 degrader for breast cancer targeted immunotherapy with a major focus on basal breast cancer.

**7. Sanofi-iAward (PI: Zhang, Weizhou, 5% effort). 11/01/2020-10/30/2021.**

Title: Validation NR4A1 as a viable target for PROTAC-mediated degradation in cancer therapy

**8. R01 CA260239 (PI: ZHANG, Weizhou with 20% effort, co-PIs: Daohong Zhou; Guangrong Zheng; co-I: Sayour Elias) \$1,716,004.00 04/01/2021-03/30/2026**

NIH/National Cancer Institute

Title: Proteolysis-targeting chimera against BCL-XL inhibits breast cancer metastasis

Goal: To study the mechanism how BCL-XL is involved in breast cancer metastasis and how to use a newly develop PROTAC to treat metastatic breast cancer.

**9. Dr. and Mrs. James Robert Spencer Family Endowment. (PD/PI: Weizhou Zhang) 2019-**

Goal: To support research activity in the Zhang laboratory.

**Past Research Support**

**1. C021334 (PI: ZHANG, Weizhou & WANG, Lu-Hai 100% effort) 10/2006-6/2007**

Postdoc fellowship from NYS Department of Health, Wadsworth Center, Extramural Programs  
\$120,000/2 years

Title: Apoptosis of breast cancer cells: roles of RACK1/CIS and STAT2/TWIST/AKT2

Goal: Study the function of different signaling pathways in apoptosis of breast cancer cells

**2. KG080649 (PI: ZHANG, Weizhou & KARIN, Michael, 100% effort) 8/2008-07/2011**

Postdoc fellowship from Susan G. Komen for the Cure

\$180,000/3 years

Title: Role of IKK/NF-kappaB/Bmi-1 in mammary carcinogenesis and metastasis

Goal: Explore the role of IKK complex in breast cancer stem cells and progression.

**3. Seed grant from the Department of Pathology (PI: ZHANG, Weizhou, 5% effort no salary support) \$30,000 01/01/2014-12/31/2014**

University of Iowa/Carver College of Medicine

Title: Identification of CD177 as a novel metastasis suppressor gene in breast cancer

Goal: To explore new directions of our current research and gather enough data for extramural funding.

- 4. American Cancer Society Institutional Research Grant (PI: ZHANG, Weizhou, 5% effort no salary support) \$30,000 05/01/2014-04/30/2015**  
 University of Iowa/Carver College of Medicine  
 Title: Metformin and interleukin-1 signaling in obesity-associated cancer progression  
 Goal: To explore new directions of our current research and gather enough data for extramural funding.
- 5. K99/R00 CA158055 (PI: ZHANG, Weizhou, 70% effort) \$480,000 08/01/2011-07/31/2015**  
 National Cancer Institute  
 Title: Myofibroblasts, T cells and malignant cells interplay in breast cancer metastasis  
 Goal: Explore the interactions between tumor microenvironment and breast cancer progression
- 6. HCCC Oberley Research Award. (PIs: Zhang, Weizhou; Klesney-Tait, Julia, 5% effort no salary support) \$50,000 10/01/2014-09/30/2016**  
 University of Iowa/Holden Comprehensive Cancer Center  
 Title: TREM-1 facilitates pulmonary metastasis of breast cancer  
 Goal: to study the role of myeloid TREM-1 expression in breast cancer metastasis
- 7. Breast Cancer Research Award, HCCC. (PI: Weizhou Zhang, 5% effort and no salary support) \$50,000 10/01/2014-09/30/2016**  
 University of Iowa/Holden Comprehensive Cancer Center  
 Title: Paracrine non-canonical Wnt Signaling in breast cancer  
 Goal: to study the role of paracrine Wnt5A signaling in breast cancer initiation
- 8. Pathology House Pilot Grant, Pathology. (PI: Weizhou Zhang, 1% effort no support) \$2,555 01/01/2016-12/30/2016**  
 University of Iowa/Department of Pathology  
 Title: Identification of a novel protein complex in regulating WNT/ $\beta$ -Catenin activation in breast cancer.  
 Goal: using immunohistochemistry to determine a protein complex involving CD177, E-Cadherin, STXBP2 and STX4 in breast cancer progression by controlling WNT/ $\beta$ -Catenin
- 9. The V Scholar Award. (PI: Weizhou Zhang, 10% effort and support) \$200,000 11/01/2014-10/31/2017**  
 The V Foundation for Cancer Research  
 Title: NLRC4 inflammasome at the crossroads of obesity, inflammation and Cancer.  
 Goal: to study the role of NLRC4 inflammasome and IL-1 $\beta$  signaling in cancer microenvironment under obese condition.
- 10. Cancer and Aging Pilot Award. (PI: Zhang, Weizhou, 5% effort and no salary support). 50,000.00\$. 11/1/2016-10/31/2017.**  
 Holden Comprehensive Cancer Center and the Center on Aging, University of Iowa.  
 Title: CD177 and aging-associated metabolic reprogramming in mammary stem cells and cancer  
 Goal: to study how CD177 alters metabolism of normal stem cells and cancer.
- 11. Institute for Clinical and Translational Science. Pilot Grant. Univ. of Iowa (PIs: Klesney-Tait/Zhang/Harty/Tivanski/Meyerholz). 75,000\$. 11/1/2016-10/31/2017**  
 Title: The role of TREM-1 in lung metastasis.  
 Goal: to understand the mechanism how TREM-1 facilitates lung metastasis of cancer cells.
- 12. Kimberly A. Stack Basler Breast Cancer Research Fund (PI: ZHANG, Weizhou, 5% effort and no salary support). 50,000.00\$. 07/01/2016-06/30/2021.**  
 Holden Comprehensive Cancer Center, University of Iowa.  
 Goal: to study the role of non-canonical WNT signaling in basal-like breast cancer and to develop targeted therapy.
- 13. CGP and ET Oberley Award. (PI: Zhang, Weizhou. No salary support). 20,000.00\$. 04/01/2017-03/31/2018.**  
 Holden Comprehensive Cancer Center.

Title: Targeting Mismatch Repair pathway in basal like breast cancer.

Goal: to screen inhibitors for blocking mismatch repair complex MSH2/MSH6 (MutS $\alpha$ ).

**14. Joan Rasmussen Breast Cancer Research Fund (PI: ZHANG, Weizhou, 2% effort and no salary support). 6,500.00\$. 2018-2019.**

Holden Comprehensive Cancer Center, University of Iowa.

Goal: to study the role of non-canonical WNT signaling in basal-like breast cancer and to develop targeted therapy.

#### **F. Invited lectures:**

1. Identification of signaling pathways bridging tumor-initiating cells and metastasis. Molecular Target and Tumor Immunity. Guangzhou, China. 11/2013.
2. CD177, a novel tumor- and metastasis-suppressor? The Institute of Biophysics, Chinese Academy of Sciences. 12/2013.
3. NLRC4 inflammasome activation at the crossroads of obesity, inflammation and cancer. 09/2014. University of Nebraska.
4. NLRC4 knockout ameliorates the development of diabetic nephropathy in mice. Annual Meeting of American Association of Nephrology. 11/08/2015.
5. Obesity-related NLRC4 inflammasome activation and angiogenesis in breast cancer. Keystone Meeting: Cell Plasticity within Tumor Microenvironment. 01/2017
6. Inflammation and immunity in breast cancer. University of Maryland School of Medicine. 04/2018.
7. The lineage specific function of CD177 in cancer and immunity. 2018 Midwest Tumor Microenvironment Annual Meeting. 05/2018.
8. The lineage specific function of CD177 in cancer and immunity. Fox Chase Cancer Center. 05/2018.
9. Inflammation and immunity in breast cancer pathogenesis and therapy. Institute of Molecular Medicine, College of Medicine, National Cheng Kung University. Taiwan. 07/2018.
10. Purdue University. 02/2019 (Cancelled)
11. South Dakota University. 03/20 (Cancelled due to COVID-19).
12. Lineage-specific functions of neutrophil antigen CD177 in the tumor microenvironment International Society of Blood Transfusion Working Party Meeting, Zoom meeting. 12/11/2020
13. TBD, Mayo Clinic's Immunology Grand Rounds Departmental Seminar Series. 05/07/2021
14. TBD, Cancer Institute of the University of Arkansas, 09/2021
15. TBD, Pathology of the University of California, San Diego, 10/2021

#### **IV. SERVICE**

##### **A. Memberships in Professional Organizations**

2008-2009 American Association for Cancer Research  
2009-2010 American Society of Hematology  
2012-present American Association for Cancer Research

##### **B. Institutional committees and Leadership:**

2014-2016 Organizing Committee for Holden Comprehensive Cancer Center Scientific Retreat  
2013-2018 Search Committee for physician scientist faculty in Pathology  
2015-2018 Pathology Graduate Program Oversight Committee  
2016-2018 BMER Utilization Committee, Holden Comprehensive Cancer Center  
2017-2018 Admission Committee for Molecular Medicine Graduate Program  
2017-2018 Co-Leader, Breast Cancer Research Program, Holden Comprehensive Cancer Center, University of Iowa



- 2017-2018 Co-Leader, Cancer Genome and Pathways program, Holden Comprehensive Cancer Center, University of Iowa  
 2017-2018 Search Committee for Cancer Endowed Chair, Pathology, University of Iowa

**C. Ad Hoc reviewers:**

BMC cancer, International Journal of Molecular Sciences, Scientific Reports, Cell communication and Signaling, Translational Research, Oncotarget, Dove Medical Press, Journal of Leukocyte Biology, AIMS Medical Sciences, Oncogene, Clinical Cancer Research, Blood, AJP\_Endocrinology and Metabolism, Journal of Cellular and Molecular Medicine, Journal of Hematology Oncology, International Journal of Oncology, Communications Biology, Nature Communications, International Journal of Cancer, NpG Precision Oncology, Theranostics, Cancer Research, Elife

**D. Editorial board or Meeting Chairs**

- 2013-2019 AIMS Medical Sciences, Oncology Section Editor  
 01/2017 Keystone meeting: Cell plasticity within tumor microenvironment. Chair for Workshop 2.  
 2017-2018 2018 Midwest Tumor Microenvironment Meeting, Meeting Organizer.

**E. Review Panels:**

**Institutional:**

- 2014-2018: Scientific Reviewer, Pilot grant for Carver Medical Research Initiatives, Carver College of Medicine, University of Iowa  
 2014-2018: Scientific Reviewer, Pilot grant for Environmental Health Sciences Research Center (EHSRC), University of Iowa  
 2015-2018: Scientific Reviewer, Research Grant for the Breast Cancer Research Group, Holden Comprehensive Cancer Center, University of Iowa  
 2017-2018: Standing Member and Scientific Reviewer, American Cancer Society IRG, Holden Comprehensive Cancer Center, University of Iowa  
 2017-2018: Scientific Reviewer, Benz Seed Grant, Holden Comprehensive Cancer Center, University of Iowa  
 2019- Scientific Reviewer, UF Health Cancer Center Seed Grant, UF Health Cancer Center, University of Florida

**National:**

- 02/2015 CDMRP, Breast Cancer Research Program-Panel scientific reviewer  
 02/2016 CDMRP, Breast Cancer Research Program-Panel scientific reviewer  
 11/2016 NIH/NCI, Research Answers to NCI's Provocative Questions (Teleconference). Special Emphasis Panel/Scientific Review Group 2017/01 ZCA1 SRB-J (J4) S.  
 04/2017 NIH/NCI, Research Answers to NCI's Provocative Questions (Teleconference). Special Emphasis Panel/Scientific Review Group 2017/05 ZCA1 SRB-2 (M2) R.  
 06/2017 NIH/NCI, Tumor Microenvironment (TME) study section, San Francisco. Ad Hoc. 06/2018.  
 06/2019 NIH/NCI, 201908 ZCA1 SRB-C (A1) Immuno-Oncology Translation Network, Ad Hoc. 06/2019  
 10/2019 NIH/NCI, Tumor Microenvironment (TME) study section, DC. Ad Hoc. 10/2019.  
 06/2020 NIH/NCI, Tumor Microenvironment (TME) study section, DC. Ad Hoc. 06/2020  
 09/2020 NIH/NCI P01 review panel, 09/24-25/2020  
 12/2020 CDMRP, Breast Cancer Research Program-Panel scientific reviewer  
 02/2021 NIH/NCI, Tumor Microenvironment (TME) study section, DC. Ad Hoc. 02/24-25/2021  
 06/2021 NIH/NCI P01 review panel, 06/2021  
 10/2021-

09/2025 NIH/NCI, Tumor Microenvironment (TME) study section, formal member.

**International:**

02/2018 Canada Research Chair Program, McGill University. 02/2018

03/2018 Individual Research Program, Israel Research Foundation. 03/2018

10/2018 External Expert Review of Research Programs, Institute of Biophysics, Chinese Academy of Sciences, 10/2018