

# Wentao Li, PhD

Assistant Professor

Department of Environmental Health Science

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## EDUCATION

- 2014**      **PhD, Biomedical and Veterinary Medical Sciences**, Louisiana State University, Baton Rouge, LA  
*Dissertation: Transcription coupled DNA repair in Saccharomyces cerevisiae: interplay of facilitators and repressors.*
- 2006**      **Master of Science, Clinical Veterinary Medicine**, Shanxi Agricultural University, Taigu, China  
*Thesis: Effect of industrial fluoride pollution on the expression of COL1A2 and COL2A1 genes in Inner Mongolia cashmere goats.*
- 2003**      **Bachelor of Science**, Veterinary Medicine, Shandong Agricultural University, Tai'an, China
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## POSITIONS

- 2020-present**    **Assistant Professor**, Department of Environmental Health Science  
University of Georgia College of Public Health, Athens, GA
- 2015-2020**    **Postdoctoral Research Associate**, Department of Biochemistry and Biophysics  
University of North Carolina at Chapel Hill, Chapel Hill, NC  
Advisor: Aziz Sanchar, M.D., Ph.D., 2015 Nobel Laureate in Chemistry
- 2009-2014**    **Graduate Research Assistant**, Department of Comparative Biomedical Sciences  
Louisiana State University School of Veterinary Medicine, Baton Rouge, LA  
Advisor: Shisheng Li, Ph.D., Professor
- 2006-2009**    **Instructor**, College of Applied Technology, Heilongjiang Bayi Agricultural University, Daqing, China
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## HONORS & AWARDS

- 2019**    NIH/NIEHS K99/R00 Pathway to Independence Award
- 2018**    UNC Postdoctoral Award for Research Excellence
- 2018**    EMGS New Investigator Travel Award
- 2014**    Phi Zeta Research Emphasis Day Award
- 2007**    Shanxi Province Outstanding Master's Thesis Award
- 2004**    Shanxi Province Outstanding Student Cadre
- 2004**    Outstanding Performance and Volunteer Award

- 2004** Outstanding Student Cadre of Shanxi Agricultural University
- 2004** Future Talent Fund Award of Shanxi Agricultural University
- 2004** Outstanding Research Article Award of Shanxi Agricultural University
- 2002** First Prize Scholarship of Shandong Agricultural University

## **RESEARCH GRANTS**

1. **R00ES030015** **Role: PI** **9/03/20 - 8/31/23**  
**National Institute of Environmental Health Sciences (NIEHS)**  
**Role of Aflatoxin-induced DNA Damage Formation and Repair in Hepatic Mutagenesis.**  
*The goal of this project is to investigate effects of histone modifications and three-dimensional (3D) genome organization on AFB1-induced DNA damage formation and repair, and to determine the correlations between AFB1-DNA adduct spectra or repair efficiencies and mutational spectra of AFB1 in human hepatocellular carcinoma.*
  
2. **2KR1091804** **Role: PI** **12/01/18 - 8/30/19**  
**North Carolina Translational and Clinical Sciences (NC TraCS) Institute**  
**Development of Targeted Damage-seq Method for Mapping of UV-induced DNA Damage Formation in Human Cells.**  
*The goal of this project is to develop a targeted damage-seq (tDamage-seq) method and identify the hotspots of UV-induced DNA damage formation in human cells.*

## **PUBLICATIONS**

(#Equal contribution and \*Corresponding author)

### **Peer-Reviewed Articles**

16. **Li, W.\***, Sancar, A.\* (2020) Methodologies for detecting environmentally induced DNA damage and repair. *Environ Mol Mutagen*, 61:664–679.
15. **Li, W.#**, Liu, W.#, Kakoki, A., Wang, R., Adebali, O., Jiang, Y. and Sancar, A. (2019) Nucleotide excision repair capacity increases during differentiation of human embryonic carcinoma cells into neurons and muscle cells. *J Biol Chem*, 294, 5914-5922.
14. Hu, J.#, **Li, W.#\***, Adebali, O., Yang, Y., Oztas, O., Selby, C.P. and Sancar, A.\* (2019) Genome-wide mapping of nucleotide excision repair with XR-seq. *Nature protocols*, 14, 248-282.
13. Yang, Y., Hu, J., Selby, C.P., **Li, W.**, Yimit, A., Jiang, Y. and Sancar, A.\* (2019) Single-nucleotide resolution analysis of nucleotide excision repair of ribosomal DNA in humans and mice. *J Biol Chem*, 294, 210-217.
12. **Li, W.**, Adebali, O., Yang, Y., Selby, C.P. and Sancar, A.\* (2018) Single-nucleotide resolution dynamic repair maps of UV damage in *Saccharomyces cerevisiae* genome. *Proc Natl Acad Sci U S A*, 115, E3408-E3415.
11. **Li, W.**, Hu, J., Adebali, O., Adar, S., Yang, Y., Chiou, Y.Y. and Sancar, A.\* (2017) Human genome-wide repair map of DNA damage caused by the cigarette smoke carcinogen benzo[a]pyrene. *Proc Natl Acad Sci U S A*, 114, 6752-6757.
10. **Li, W.**, and Li, S.\* (2017) Facilitators and Repressors of Transcription-coupled DNA Repair in *Saccharomyces cerevisiae*. *Photochem Photobiol*, 93, 259-267.

9. Canturk, F., Karaman, M., Selby, C.P., Kemp, M.G., Kulaksiz-Erkmen, G., Hu, J., **Li, W.**, Lindsey-Boltz, L.A. and Sancar, A.\* (2016) Nucleotide excision repair by dual incisions in plants. *Proc Natl Acad Sci U S A*, 113, 4706-4710.
8. **Li, W.**, Selvam, K., Rahman, S.A. and Li, S.\* (2016) Sen1, the yeast homolog of human senataxin, plays a more direct role than Rad26 in transcription coupled DNA repair. *Nucleic Acids Res*, 44, 6794-6802.
7. **Li, W.**, Selvam, K., Ko, T. and Li, S.\* (2014) Transcription bypass of DNA lesions enhances cell survival but attenuates transcription coupled DNA repair. *Nucleic Acids Res*, 42, 13242-13253.
6. **Li, W.**, Giles, C. and Li, S.\* (2014) Insights into how Spt5 functions in transcription elongation and repressing transcription coupled DNA repair. *Nucleic Acids Res*, 42, 7069-7083.
5. Tatum, D., **Li, W.**, Placer, M. and Li, S.\* (2011) Diverse roles of RNA polymerase II-associated factor 1 complex in different subpathways of nucleotide excision repair. *J Biol Chem*, 286, 30304-30313.
4. Yan, X., Feng, C., Chen, Q., **Li, W.**, Wang, H., Lv, L., Smith, G.W. and Wang, J.\* (2009) Effects of sodium fluoride treatment in vitro on cell proliferation, apoptosis and caspase-3 and caspase-9 mRNA expression by neonatal rat osteoblasts. *Arch Toxicol*, 83, 451-458.
3. Yan, X., **Li, W.**, Zhou, B., Wang, J. and Wang, J.\* (2007) Effect of supplemented protein and Ca nutrition on fluoride-induced disturbance of rib COL1A1 gene expression in rabbits. *Fluoride*, 40, 140-148.
2. **Li, W.**, Yang, L., Ren, Y., Yan, X. and Wang, J.\* (2007) Quantification of rib COL1A2 gene expression in healthy and fluorosed Inner Mongolia cashmere goats. *Fluoride*, 40, 13-18.
1. **Li, W.**, Yang, L., Zhou, B., Yan, X. and Wang, J.\* (2006) Effect of industrial fluoride pollution on COL2A1 gene expression in rib cartilage of Inner Mongolia cashmere goats. *Fluoride*, 39, 285-292.

#### Manuscripts Under Review or in Preparation

1. Jiang, Y., **Li, W.**, Lindsey-Boltz, LA, Yang, Y, Li, Y and Sancar, A.\* Nucleotide excision repair hotspots of UV-induced DNA damage in the human genome. (Under Review)
2. **Li, W.**, Sancar, A.\* Dynamic maps of aflatoxin-induced DNA damage formation and repair for the human genome. (In preparation)

#### Published Abstracts

1. **Li, W.** and Sancar, A.\* (2018) Genome-wide Repair Map of DNA Damage Caused by Aflatoxin in Humans. Environmental Mutagenesis and Genomics Society 49th Annual Meeting.
2. **Li, W.** and Sancar, A.\* (2019) High-resolution Genome-wide Maps of Benzo[a]pyrene-induced DNA Damage Formation and Repair in Humans. Environmental Mutagenesis and Genomics Society 50th Annual Meeting.

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#### TEACHING EXPERIENCE

**2006-2009** Independently taught six sections of *Veterinary Pathology* to undergraduate students  
College of Applied Technology, Heilongjiang Bayi Agricultural University, Daqing, China

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#### MENTORING EXPERIENCE

**2016-2017** Trainee: Ms. Ayano Kakoki (Undergraduate student, UNC-Chapel Hill)  
*Project: Measurement of nucleotide excision capacity by immunoslot blot assay.*

**2011-2012** Trainee: Ms. Cristina Giles (Undergraduate student, Louisiana State University)  
*Project: Identification of protein-protein interactions by using in vivo cross-linking.*

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## **PRESENTATIONS**

### Invited Talks and Seminars

- Sep 2020 Nucleotide excision repair hotspots and coldspots of UV damage in humans. EMGS Virtual Annual Meeting, Athens, GA.
- Feb 2020 Genome-Wide Mapping of Environmentally Induced DNA Damage and Repair at Single-Nucleotide Resolution in Humans. University of Georgia, Athens, GA.
- Jan 2020 Genome-Wide Mapping of Environmentally Induced DNA Damage and Repair at Single-Nucleotide Resolution in Humans. University of Texas at Dallas, Richardson, TX.
- Nov 2019 Mapping the Hotspots and Coldspots of Nucleotide Excision Repair and DNA Damage Formation. UNC BCBP Seminar Research in Progress, Chapel Hill, NC.
- Sept 2019 High-resolution Genome-wide Maps of Benzo[a]pyrene-induced DNA Damage Formation and Repair in Humans. 50<sup>th</sup> EMGS Annual Meeting, Washington, D.C.
- Nov 2018 Genome-wide Repair Map of DNA Damage Caused by Aflatoxin in Humans. UNC Genome Stability Meeting, Chapel Hill, NC.
- Nov 2018 Whole Genome Mapping of Environmental Carcinogen-induced DNA Damage and Repair. UNC Postdoc Awards for Research Excellence (PARE) Ceremony, Chapel Hill, NC.
- Sept 2018 Genome-wide Repair Map of DNA Damage Caused by Aflatoxin in Humans. 49<sup>th</sup> EMGS Annual Meeting, San Antonio, TX.
- Dec 2017 Genome-wide Analysis of Environmental Carcinogen-induced DNA Damage and Repair. Yangzhou University International Forum for Young Scholars, Yangzhou, China.

### Poster Presentations

- Aug 2019 Genome-wide Repair Map of DNA Damage Caused by Aflatoxin in Humans. 2019 BBSP Welcome and Poster Session, Chapel Hill, NC.
- Feb 2019 Genome-wide Repair Map of DNA Damage Caused by Aflatoxin in Humans. 2019 Gordon Research Conference on Mammalian DNA Repair, Ventura, CA.
- Oct 2018 Genome-wide Repair Map of DNA Damage Caused by Aflatoxin in Humans. 2018 Department of Biochemistry & Biophysics Research Retreat, Chapel Hill, NC.
- Oct 2017 General Method for Genome-wide Mapping of Nucleotide Excision Repair: Application to UV and Benzo[a]pyrene-induced DNA Damage. 42<sup>nd</sup> Annual UNC Lineberger Comprehensive Cancer Center Postdoc-Faculty Day, Chapel Hill, NC.

- May 2017 General Method for Genome-wide Mapping of Nucleotide Excision Repair: Application to UV and Benzo[a]pyrene-induced DNA Damage. 2017 Department of Biochemistry & Biophysics Research Retreat, Chapel Hill, NC.
- Nov 2016 Effect of Differentiation on Genome-wide DNA Damage and Repair in Stem Cells. NCI Symposium on Chromosome Biology: Nuclear Structure, Genome Integrity and Cancer, NIH, Bethesda, MD.
- Apr 2016 Nucleotide Excision Repair in Human Embryonic Carcinoma Cells and Differentiated Cells. 2016 Department of Biochemistry & Biophysics Research Retreat, Charlotte, NC.
- Oct 2014 Spt5-RNA polymerase II domain-specific interactions: promoting transcription elongation and repressing transcription coupled DNA repair. ASBMB Symposium, Transcriptional Regulation: Chromatin and RNA Polymerase II, Snowbird, UT.
- Sept 2014 Spt5-RNA polymerase II domain-specific interactions: promoting transcription elongation and repressing transcription coupled DNA repair. Louisiana State University Phi Zeta Research Emphasis Day, Baton Rouge, LA.
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### **AD HOC REVIEWER**

- *Environ Pollut*
  - *DNA Repair*
  - *Analytica Chimica Acta*
  - *Eur J Med Chem*
  - *Arch Toxicol*
  - *Front Mol Neurosci*
  - *Oncotarget*
  - *Plos One*
  - *Chemosphere*
  - *Neoplasma*
  - *Medicine*
  - *Mol Med Rep*
  - *Biol Trace Elem Res*
  - *J Biochem Mol Toxicol*
  - *Chem Biodivers*
  - *Cell Mol Biol*
  - *J Appl Poult Res*
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### **PROFESSIONAL MEMBERSHIPS**

- American Society for Biochemistry and Molecular Biology (ASBMB)

- American Association for the Advancement of Science (AAAS)
  - Environmental Mutagenesis and Genomics Society (EMGS)
  - UNC Postdoctoral Association (PDA)
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**PROFESSIONAL/VOLUNTEER SERVICE**

- 2019** Discussion Leader  
2019 Gordon Research Seminar on Mammalian DNA Repair, Ventura, CA.
- 2019** State Scientific Review Committee Member  
North Carolina State Science and Engineering Fair.
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**CERTIFICATIONS**

- 2015** How to learn to code, TIBBS Department, University of North Carolina at Chapel Hill
- 2015** Programming for Everybody (Python), University of Michigan School of Information
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