

# CURRICULUM VITAE

**Qunwei Zhang, MD, MPH, PhD**

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Position: Tenured Professor

## EDUCATION

1984-1989 MD Degree, Fujian Medical University, P.R. of China  
1989-1992 Master of Public Health, School of Public Health, Zhejiang University, P.R. of China  
1995-1996 Research Student, School of Medicine, University of Fukui, Japan  
1996-2000 PhD of Medical Science, Department of Environmental Health, School of Medicine, University of Fukui, Japan

## ACADEMIC APPOINTMENTS

1992-1995 Research Assistant Scientist, Institute of Occupational Health, Zhejiang Academy of Medical Science, P.R. of China  
1998-2000 Research Assistant, Department of Environmental Health, School of Medicine, University of Fukui, Japan  
2000-2002 Research Associate Scientist, Department of Environmental Medicine, NYU School of Medicine, New York, NY  
2003-2005 Research Associate, Institute for Environmental Medicine, School of Medicine, University of Pennsylvania, Philadelphia, PA  
2005-2011 Assistant Professor (tenure track), Department of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, University of Louisville, Louisville, KY  
2011-2016 Associate Professor (July 1, 2011) with tenure (July 1, 2012), Department of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, University of Louisville, Louisville, KY  
2016-2021 Tenured Professor, Department of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, University of Louisville, Louisville, KY  
2022-Present Tenured Professor, Department of Epidemiology & Population Health, School of Public Health and Information Sciences, University of Louisville, Louisville, KY  
2005-Present Associate Scientist, James Graham Brown Cancer Center, University of Louisville, Louisville, KY  
2006-Present Member, Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY  
2008-Present Member, Center for Environmental Genomics and Integrative Biology, UofL  
2009-Present Faculty Mentor, Environmental Health Sciences Training Grant (NIEHS T32-ES011564)  
2019-Present Member, Center for Integrated Environmental Health Sciences (CIEHS), UofL

## TEACHING APPOINTMENTS

- 1998-2000 Teaching Assistant, Dept. of Environmental Health, School of Medicine, University of Fukui, Japan
- 2007-2021 Dept. of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, University of Louisville, Louisville, KY
- Course director/instructor: PHEH 750, 752, 754 Seminars in Environmental Health
  - Instructor: PHEH 753 Independent Study in Environmental Health
  - Mentor: PHEH 679 MPH Practicum (EOHS)
- 2014-2016 Dept. of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, University of Louisville, Louisville, KY
- Instructor: PHEH-651 Advanced Topics in Environmental Health
- 2016-2017 Dept. of Toxicology and Pharmacology, School of Medicine, University of Louisville, Louisville, KY
- Mentor: PHTX 644

## SERVICE

- 2007-2009 Faculty Search Committee, Departments of Environmental and Occupational Health Sciences, Epidemiology, and Population Health and Behavioral Sciences
- 2007-2012 Internal Advisory Board, Center for Environmental Genomics and Integrative Biology, UofL
- 2009-2021 Chair, Research Collaboration and Strategic Plans, Department of Environmental and Occupational Health Sciences, UofL
- 2009-2010 External Assessor, Professor level promotion at Zhejiang University, P.R of China
- 2010-Present Editor board member, Journal of Chinese Clinical Medicine
- 2009-2012 Judge, Meyzeek Middle School Science Fair, Louisville, KY
- 2016-2019 Judge, Meyzeek Middle School Science Fair, Louisville, KY
- 2011-2012 Head Judge, Louisville Science Fair, Louisville, KY
- 2012-2015 Judge, duPont Manual High School Science Fair, Louisville, KY
- 2011-Present Editor Board member, ISRN Toxicology (until 2014), then the journal was renamed as International Scholarly Research Notices (Toxicology section)
- 2011-2013 Dissertation committee member for Ms. Sadiatu Musah, PhD candidate, Department of Environmental and Occupational Health Sciences, UofL
- 2012-2019 Faculty Forum, School of Public Health and Information Sciences, UofL
- 2019-2023 Faculty Council, School of Public Health and Information Sciences, UofL
- 2016-Present Promotion, Appointment & Tenure Committee, School of Public Health and Information Sciences, UofL
- 2016 External Referee, Tenure and Promotion, Saint Louis University's College for Public Health and Social Justice
- 2017 External Referee, Tenure and Promotion, College of Veterinary Medicine, Western University of Health Sciences
- 2012- Editor Board Member, World Journal of Pharmacology
- 2012- Editor Board Member, World Journal of Translational Medicine
- 2013- Editor Board Member, Science Postprint
- 2015- Editor Board Member, SM Journal of Gastroenterology & Hepatology
- 2017- Editor Board Member, Environmental Diseases
- 2016-2022 Dissertation committee member for Ms. Haiyan Lu, PhD candidate, Department of Pharmacology and Toxicology, School of Medicine, UofL
- 2016-2020 Dissertation committee member for Ms. Rachel Speer, PhD candidate, Department of Pharmacology and Toxicology, School of Medicine, UofL
- 2017-2020 Dissertation committee member for Ms. Yihong Li, PhD candidate, Department of Pharmacology and Toxicology, School of Medicine, UofL
- 2017-2021 Dissertation committee member for Ms. Katlyn E McGraw, PhD candidate, Department of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, UofL

Qunwei Zhang, MD, MPH, PhD

- 2020- Chair of Dissertation committee for Mr. Yuanbao Zhang, PhD candidate, Department of Environmental and Occupational Health Sciences, School of Public Health and Information Sciences, UofL
- 2017- Institutional Biosafety Committee, UofL

## STUDENT ADVISING & MENTORING

### Current

- 2014- Yiqun Mo, MD, PhD Research Scientist

### Prior

- 2018-2022 Yuanbao Zhang, MD, MS PhD student
- 2019-2022 Jiali Yuan, MD, PhD Post-Doctoral Fellow
- 2018-2019 Jie Ren, PhD Visiting Scholar
- 2018-2019 Jing Li, MD Visiting Student
- 2018-2018 Jin Liu, MD, PhD Post-Doctoral Fellow (Visiting Scholar)
- 2016-2017 Sivarchana Mareedu, BS Rotation PhD Student
- 2016-2017 Aihua Gu, MD, PhD Senior Visiting Scholar
- 2016-2016 Yue Ma, BS Visiting Student
- 2015-2015 Youqiong Xu, MD, PhD Visiting Scholar
- 2007-2012 Rong Wan, MD, PhD Research Associate Senior
- 2011-2012 Lingfang Feng, MD, MS Visiting Scholar
- 2005-2011 Yiqun Mo, MD, PhD Research Associate Senior, T32 post-doctoral trainee
- 2010-2010 Mizu Jiang, MD, PhD Senior Visiting Scholar
- 2009-2010 Lijin Zhu, MD, MS Visiting Scholar
- 2009-2009 Kevin Baldrige Summer Student
- 2008-2009 Min Yu, MD Visiting Scholar
- 2006-2007 Qing Yang, PhD Post-Doctoral Fellow
- 2006-2007 Weining Li, BS Research Technician

## Accomplishments of Post-Doctoral Fellows and Visiting Scientists Under Mentorship

### Awards

- 2022 Winner, Research Associate/Research Scientist, Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2022 First Place, Basic Research (Public Health), Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2021 First Place: Doctoral Student Award in Public Health, Research! Louisville (Awardee: Mr. Yuanbao Zhang)
- 2021 Winner, Post-Doctoral Scholars and Research Associates Award in Public Health Award, Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2019 Basic Research in Public Health Award, Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2018 Basic Research in Public Health Award, Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2017 First Place: Basic Research in Public Health, Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2015 First Place: Basic Research in Public Health, Research! Louisville (Awardee: Dr. Yiqun Mo)
- 2010 The Post-Doc fellow award, Nanotoxicology Specialty Section, 49<sup>th</sup> Annual Meeting of Society of Toxicology at Salt Lake City, UT, March 7-11, 2010 (Awardee: Dr. Rong Wan)
- 2010 NIH/NIEHS T32 UofL Environmental Health Sciences Training Program for post-doctoral fellowship, July 1, 2010 (Awardee: Dr. Yiqun Mo)
- 2009 NIH/NIEHS T32 UofL Environmental Health Sciences Training Program for post-doctoral fellowship, July 1, 2009 (Awardee: Dr. Yiqun Mo)
- 2009 Travel Grant Awards, Wound Biotechnology Foundation, 19<sup>th</sup> Annual Meeting of Wound Healing Society at Dallas, TX (Awardee: Dr. Yiqun Mo)
- 2009 Best Abstract by a Post-Doc, Inhalation and Respiratory Specialty Section, 48<sup>th</sup> Annual Meeting of Society of Toxicology at Baltimore, MD, March 15-19, 2009 (Awardee: Dr. Yiqun Mo)

## **Accomplishments of Middle School and High School Students Under Mentorship**

### **Awards**

- 2014 Fourth Place Award, Intel ISEF 2014 (Awardee: Yue Zhang)
- 2010 First Place, Meyzeek Middle School Science Fair, Cellular and Molecular Biology Division (Awardee: Yue Zhang)
- 2010 First Place, Ballard High School Science Fair, Team Section (Awardees: Yixin Li & Yihua Li)
- 2010 First Place, Louisville Regional Sciences Fair, Team Section (Awarded four-year full scholarship at UofL) (Awardees: Yixin Li & Yihua Li)
- 2010 In Vitro Science Certificate, Louisville Regional Science Fair (Awardees: Yixin Li & Yihua Li)
- 2010 First Place Award, Team Projects Intel ISEF 2010 (\$3,000 cash award) (Awardees: Yixin Li & Yihua Li)

### **AWARDS AND HONORS**

- 2008 Faculty Award, Scientific Importance, Research! Louisville
- 2007-2010 Walter A. Rosenblith New Investigator Award, Health Effects Institute
- 2006 First Place, Scientific Importance, Research! Louisville
- 2004-2006 Independent Investigator Award, National American Lung Association research grant award
- 2002 Travel Grant, Mechanism of Toxicity Gordon Research Conference, Lewiston, ME
- 2000-2002 Post-doc fellowship for foreign researcher (about \$100,000), Japan Society for the Promotion of Science - returned fellowship due to accepting the research associate scientist position in New York University, USA.
- 1998 Travel Grant, Third British Epidemiology and Public Health Course, Hiroshima, Japan
- 1997 Travel Grant, 9<sup>th</sup> International Conference on Occupational Respiratory Diseases, Kyoto, Japan
- 1995-2000 Scholarship, Japanese Ministry of Education, Sciences and Culture (Japanese Government Scholarship)
- 1995 Travel Grant, 25<sup>th</sup> International Congress on Occupation Health, Stockholm, Sweden
- 1994 Excellent Paper, Third Place, Zhejiang Association of Science and Technology. "Determination of the platelet activating factor in silicotic patients and its effects on the fibroblast cells".
- 1994 Outstanding Scientific Researcher, Zhejiang Academy of Medical Sciences, Zhejiang Province, P.R. of China.
- 1992 First Place, Second Education, Culture and Art Festival of Universities and Colleges, Zhejiang Province, P.R. of China. "The experimental studies on the therapeutic effects of bronchoalveolar lavage on silicotic rats".

### **MAJOR SCIENTIFIC INTERESTS**

- Nanotoxicology
- Pulmonary toxicology
- Metal toxicology, genotoxicology, and carcinogenesis
- Lung ischemia and ion channels
- Free radicals and pulmonary diseases
- Gene expression and function
- Ambient ultrafine particles and NADPH oxidase
- Signal transduction involved in tumor promotion, prevention, and cellular function

### **PROFESSIONAL SOCIETY MEMBERSHIPS**

- 1995-2000 Japanese Association of Occupational Health
- 1995-2000 Japanese Association of Hygiene

Qunwei Zhang, MD, MPH, PhD

2001-2004 American Association for the Advancement of Science  
2003-present Society of Toxicology  
2006-2016 American Thoracic Society  
2006-2011 Kentucky Public Health Association

#### **WORKING GROUP MEMBER FOE IARC, WHO**

2021-2022 **IARC** Monographs Volume 131: Cobalt metal (without tungsten carbide or other metal alloys) and cobalt (II) salts, trivalent and pentavalent antimony, and weapons-grade tungsten (with nickel and cobalt) alloy. Remote Meeting, March 2–18, 2022

#### **REVIEWER FOR JOURNALS**

2022 Ecotoxicology and Environmental Safety, Journal of Biomedical Materials Research: Part B - Applied Biomaterials, Aging and Disease, Nanoscale, Environmental Pollution  
2021 Environmental Pollution, Molecular Therapy - Nucleic Acids, Molecular Carcinogenesis, Environmental Science: Processes & Impacts, Nanoscale  
2020 Journal of Applied Toxicology, Environmental Pollution  
2019 Journal of Hazard Material, Environmental International, Environmental Pollution, Molecular Brian  
2017 Environmental Pollution, Proceeding of Royal Society's B  
2016 Toxicology Sciences, Toxicology, Oncotarget, Journal of Nanoscience and Nanotechnology, International Journal of Nanomedicine, Life Sciences  
2015 Toxicology Sciences; Toxicology, Journal of Nanoscience and Nanotechnology, International Journal of Nanomedicine, Life Sciences  
2014 ISRN Toxicology; Toxicology, Particle and Fibre Toxicology  
2013 Environmental Health Perspectives, Environmental Science & Technology  
Journal of Molecular Signaling, Particle and Fibre Toxicology, ISRN Toxicology  
2012 Materials, The Journal of Pediatric, Journal of Functional Foods in Health and Diseases, Toxicology Sciences, BBA - General Subjects, Current Nanoscience, ISRN Toxicology  
Journal of Biomedical Nanotechnology, Toxicology Letter, Toxicology, Chemical Research in Toxicology  
2011 Toxicology Research, Toxicology Letter, The Journal of Toxicological Sciences, Toxicology Sciences, Nutrition and Metabolism, Life Sciences, Toxicology, PLoS ONE, Molecules  
2010 Toxicology and Applied Pharmacology, Toxicology Letters, Chemical Engineer Journal, Nanotoxicology  
2009 Toxicology and Applied Pharmacology, Journal of Nanobiotechnology, Chemical Research in Toxicology, Nanotoxicology  
2006-2007 Environmental Health Perspectives  
2004 Antioxidant Redox Signal  
2003-2006 American Journal of Physiology, Lung Cellular and Molecular Physiology  
1999 Environmental Health Perspectives, Journal of National Institute of Environmental Health  
1998 Journal of Occupational Health

#### **REVIEWER FOR PROPOSAL REGARDING THE POTENTIAL FOR PUBLICATION**

2021 Elsevier, Inc, the potential publication of the first edition of *Hazardous Solid and Liquids: Risk Assessment on the Environment and Human Health Hazards*  
2021 Springer Nature, the peer review for a book proposal: *Neurotoxicity of Aluminum*  
2019 Elsevier, Inc, the potential publication of the 5<sup>th</sup> edition of *Handbook on the Toxicology of Metals*  
2012 EPA External Peer Review of EPA's "Toxicological Review of Vanadium Pentoxide"  
2011 Elsevier, Inc, the potential publication of the 4<sup>th</sup> edition of *Handbook on the Toxicology of*

Qunwei Zhang, MD, MPH, PhD

### *Metals*

#### **REVIEWER FOR ABSTRACT FOR CONFERENCE**

2010 Society for Biomaterial 2011 Annual Meeting, April 13-16, 2011 in Orland, FL

#### **REVIEWER FOR GRANTS AND STUDY SECTIONS**

2021 2021/10 ZES1 VSM-D (K9) 1 NIH Pathway to Independence Award (K99/R00)  
2021 NHLBI Special Emphasis Panel, 2021/10 ZHL1 CSR-G (O1) 1, Small Grant Program Grants for NHLBI K Recipients (R03)  
2021 CDMRP FY21 Peer Reviewed Medical Research Program (PRMRP) Pre-Application Peer Review –Metals Toxicology, DoD  
2020 2020 Peer Reviewed Medical Research Program (Metals Toxicology), Congressionally Directed Medical Research Programs, DoD  
2020 NHLBI Special Emphasis Panel, ZHL1 CSR-C (O1), Small Grant Program Grants for NHLBI K Recipients (R03)  
2019 Special Emphasis Panel on Tobacco Regulatory Science, NIH ZRG1 IFCN-L (56)  
2016 Members of the NIEHS P42 Superfund Research Program Review Committee  
2015- Beijing Natural Science Foundation  
2013 ad honor reviewer for NIH NANO study section  
2013-current KSTC/KSEF SBIR/STTR Phase Zero grant proposal  
2012 Special Emphasis Panel, NIH for Conference Grant Applications (R13), NIH  
2011-2016 Environmental Exposure & Toxicology Study Section, California Tobacco-Related Disease Research Program (TRDRP)  
2011-current Extramural Grant Review Panel, Medical Research Council (MRC), United Kingdom  
2009-current National Natural Science Foundation of China  
2008-current Medical Research Council (MRC), United Kingdom  
2006 Jeffress Memorial Trust  
2003 NIESH/NIH

#### **PUBLICATIONS**

##### **Book**

1. **Qunwei Zhang** (Editor). *Nanotoxicity: Methods and Protocols*. In the series: *Methods in Molecular Biology*, Springer Protocol. ([www.SpringerProtocols.com](http://www.SpringerProtocols.com)). Humana Press (2019).  
**DOI:** 10.1007/978-1-4939-8916-4; **Hardcover ISBN:** 978-1-4939-8915-7; **eBook ISBN:** 978-1-4939-8916-4. <https://www.springer.com/us/book/9781493989157>

##### **Book Chapters**

1. Mo Y, Zhang Y, **Zhang Q**. Evaluation of pulmonary toxicity of nanoparticles by bronchoalveolar lavage method. *Nanotoxicity: Methods and Protocols*. In the series: *Methods in Molecular Biology*. Editor: Qunwei Zhang. Springer Protocol. ([www.SpringerProtocols.com](http://www.SpringerProtocols.com)). Humana Press (2019). *Methods Mol Biol.* 2019; 1894: 313-322. doi: 10.1007/978-1-4939-8916-4\_18. **PMID:**30547469
2. Zhang Y, Wan R, **Zhang Q**, Mo Y. Application of gelatin zymography in nanotoxicity research. *Nanotoxicity: Methods and Protocols*. In the series: *Methods in Molecular Biology*. Editor: Qunwei Zhang. Springer Protocol. ([www.SpringerProtocols.com](http://www.SpringerProtocols.com)). Humana Press (2019). *Methods Mol Biol.* 2019; 1894: 133-143. doi: 10.1007/978-1-4939-8916-4\_8. **PMID:**30547459
3. Wan R, Mo Y, Tong R, Gao M, **Zhang Q**. Determination of phosphorylated histone H2AX in nanoparticle-induced genotoxic studies. *Nanotoxicity: Methods and Protocols*. In the series: *Methods in Molecular Biology*. Editor: Qunwei Zhang. Springer Protocol. ([www.SpringerProtocols.com](http://www.SpringerProtocols.com)). Humana Press (2019). *Methods Mol Biol.* 2019; 1894: 145-159. doi: 10.1007/978-1-4939-8916-4\_9. **PMID:**30547460

4. Long G, Mo Y, **Zhang Q**, Jiang M. Analysis of nanomaterial toxicity by Western blot. *Nanotoxicity: Methods and Protocols*. In the series: Methods in Molecular Biology. Editor: Qunwei Zhang. Springer Protocol. (www.SpringerProtocols.com). Humana Press (2019). Methods Mol Biol. 2019; 1894: 161-169. doi: 10.1007/978-1-4939-8916-4\_10. **PMID:**30547461
5. Mo Y, Gu A, Tollerud DJ, **Zhang Q**. Nanoparticle toxicity and environmental impact. *Oxidative stress and biomaterial*. Editors: Thomas Dziubla and D. Allan Butterfield. Elsevier Ltd. (2016). ISBN: 978-0-12-803269-5, page 117-143.
6. Mo Y, Wan R, Tollerud DJ, **Zhang Q**. Nanomaterials. *Cancer and Inflammation Mechanisms: Chemical, Biological, and Clinical Aspect*. Editors: Yusuke Hiraku, Shosuke Kawanishi, Hiroshi Ohshima. John Wiley & Sons, Inc. (2014). ISBN: 978-1-118-16030-5, page 235-249.
7. Mo Y, Wan R, **Zhang Q**. Application of reverse transcription-PCR and real-time PCR in nanotoxicity research. *Nanotoxicity: Method and Protocols*. In the series: Methods in Molecular Biology (Vol. 926). Editor: Reineke, Joshua. Springer Protocols (www.SpringerProtocols.com). Humana Press (2012) Methods Mol. Biol. 2012; 926: 99-112. **PMID: 22975959**
8. Fisher AB, **Zhang Q**. NADPH and NADPH oxidase. *Encyclopedia of Respiratory Medicine*. Editors: Geoffrey J. Laurent and Steven D. Shapiro. C2006 Elsevier Ltd, ISBN: 0-12 438360-2, 2006; Vol 3: 77-83.
9. **Zhang Q**, Kusaka Y, Sato K, Donaldson K. Differences in the inflammogenicity of standard and ultrafine metals: the role of nitric oxide. *Advances in the Prevention of Occupational Respiratory Diseases*. Editors: Chiyotani K, Hosoda Y, Aizawa Y. Elsevier Sciences B.V. 1998: 866-872.
10. Zhang Z, **Zhang Q**, Yang D, Ding X, Luo J, He L Zhong H, Chen F. Luo J, Hong C. The therapeutic effect of whole lung lavage with polyvinylpyridine-N-Oxide solution in pneumoconiosis patients. *Advances in the Prevention of Occupational Respiratory Diseases*. Editors: Chiyotani K, Hosoda Y, Aizawa Y. Elsevier Sciences B.V. 1998: 838-844.
11. Kusaka Y, **Zhang Q**, Sato K, Kyono H, Kohyama N. Which is more immunotoxic to the respiratory system, ionic or metallic cobalt? *Metal Ions in Biology Medicine*. Editors: Collery PH, Corbella J, Domingo JL, Etienne JC, Liobet JM. John Libbey Eurotext, Pairs, 1996, Vol 4: 661-613.
12. Sato K, Kusaka Y, **Zhang Q**, Okada K, Nakakuki K, Muraoka R. Effect of cadmium on citrate uptake by isolated rats renal brush border membrane vesicles. *Metal Ions in Biology Medicine*. Editors: Collery PH, Corbella J, Domingo JL, Etienne JC, Liobet JM. John Libbey Eurotext, Pairs, 1996, Vol 4: 238-240.

### Peer-Reviewed Journals

1. Zhang YB, Mo Y, Zhang Y, Yuan J, **Zhang Q**. MMP-3-mediated cleavage of OPN is involved in copper oxide nanoparticle-induced activation of fibroblasts. *Particle and Fibre Toxicology* 2023 May 22;20(1):22. doi: 10.1186/s12989-023-00532-y. **PMID: 37217992**
2. Yuan J, Mo Y, Zhang Y, Zhang YB, **Zhang Q**. Nickel nanoparticles induce autophagy and apoptosis via HIF-1 $\alpha$ /mTOR signaling in human bronchial epithelial cells. *Environmental Pollution* 2023 Jul 15;329:121670. doi: 10.1016/j.envpol.2023.121670. **PMID: 37080518**
3. Yuan J, Mo Y, Zhang YB, Zhang Y, **Zhang Q**. Nickel nanoparticles induce epithelial-mesenchymal transition in human bronchial epithelial cells via the HIF-1 $\alpha$ /HDAC3 pathway. *Nanotoxicology*. 2022; 16 (NOS. 6–8): 695–712. doi: 10.1080/17435390.2022.2142169. **PMID: 36345150**
4. Zhang Y, Du L, Yan J, Bai Q, Niu Q, Mo Y, **Zhang Q**, Nie J. Prenatal Benzo[a]pyrene exposure impairs hippocampal synaptic plasticity and cognitive function in SD rat offspring during adolescence and adulthood via HDAC2-mediated histone deacetylation. *Ecotoxicology and Environmental Safety*. 2022 Nov;246:114180. doi: 10.1016/j.ecoenv.2022.114180. **PMID: 36265406**
5. Feng S, Xu Z, Zhang Z, Mo Y, Deng Y, Li L, Fei S, Wu J, Wang K, **Zhang Q**, Song J, Zhou R. RNA-Seq approach to investigate the effects of melatonin on bone marrow-derived dendritic cells from dextran sodium sulfate-induced colitis mice. *Toxicology*, 2022 Nov;481:153354. doi: 10.1016/j.tox.2022.153354. **PMID: 36265525**
6. Yuan J, Mo L, Mo Y, Zhang YB, Zhang Y, **Zhang Q**. A protective role of autophagy in fine airborne particulate matter-induced apoptosis in LN-229 cells. *Toxicology*. 2022 Jul;477:153271. doi: 10.1016/j.tox.2022.153271. Epub 2022 Jul 22. **PMID: 35872226**

7. Huang R, **Zhang Q**, Zhou P. Editorial: Epigenetic and Related Signaling Pathways in Response to Ionizing Radiation and Nanoparticles. *Front Cell Dev Biol.* 2022 May 27;10:932757. doi: 10.3389/fcell.2022.932757. eCollection 2022. **PMID: 35712664**
8. Yuan J, Wang T, Wang L, Li P, Shen H, Mo Y, **Zhang Q**, Ni C. Transcriptome-wide association study identifies PSMB9 as a susceptibility gene for coal workers' pneumoconiosis. *Environmental Toxicology* 2022;37(8):2103-2114. **PMID: 35506645**
9. Karagas MR, Wang A, Dorman DC, Hall AL, Pi J, Sergi CM, Symanski E, Ward EM, Arrandale VH, Azuma K, Brambila E, Calaf GM, Fritz JM, Fukushima S, Gaitens JM, Grimsrud TK, Guo L, Lynge E, Marinho-Reis AP, McDiarmid MA, Middleton DRS, Ong TP, Polya DA, Quintanilla-Vega B, Roberts GK, Santonen T, Sauni R, Silva MJ, Wild P, Zhang CW, **Zhang Q**, Grosse Y, Benbrahim-Tallaa L, de Conti A, DeBono NL, El Ghissassi F, Madia F, Reisfeld B, Stayner LT, Suonio E, Viegas S, Wedekind R, Ahmadi S, Mattock H, Gwinn WM, Schubauer-Berigan MK. Carcinogenicity of cobalt, antimony compounds, and weapons-grade tungsten alloy. *Lancet Oncology.* 2022; 23 (5):577-578. Apr 7:S1470-2045(22)00219-4. [https://doi.org/10.1016/S1470-2045\(22\)00219-4](https://doi.org/10.1016/S1470-2045(22)00219-4). **PMID: 35397803**
10. Nie J, Zhang Y, Ning L, Yan Z, Duan L, Xi H, Niu Q, **Zhang Q**. Phosphorylation of p53 by Cdk5 contributes to benzo[a]pyrene-induced neuronal apoptosis. *Environmental Toxicology* 2022 Jan; 37(1): 17-27. doi: 10.1002/tox.23374. **PMID: 34529316**
11. Zhang Y, Mo Y, Yuan J, Zhang Y, Mo L, **Zhang Q**. MMP-3 activation is involved in copper oxide nanoparticle-induced epithelial-mesenchymal transition in human lung epithelial cells. *Nanotoxicology.* 2021; 15 (10): 1380-1402. <https://doi.org/10.1080/17435390.2022.2030822> **PMID: 35108494**
12. Mo Y, Zhang Y, Zhang YB, Yuan J, Mo L, **Zhang Q**. Nickel nanoparticle-induced cell transformation: involvement of DNA damage and DNA repair defect through HIF-1 $\alpha$ /miR-210/Rad52 pathway. *Journal of Nanobiotechnology* 2021 Nov 17; 19(1): 370. <https://doi.org/10.1186/s12951-021-01117-7>. **PMID: 34789290**
13. Yuan J, Li P, Pan H, Xu Q, Xu T, Li Y, Wei D, Mo Y, **Zhang Q**, Chen J, Ni C. miR-770-5p inhibits the activation of pulmonary fibroblasts and silica-induced pulmonary fibrosis through targeting TGFBR1. *Ecotoxicology and Environmental Safety* 2021; 20: 112375. <https://doi.org/10.1016/j.ecoenv.2021.112372>. **PMID: 34082245**
14. Sarojini H, Bajorek A, Wan R, Wang J, **Zhang Q**, Billeter AT, Chien S. Enhanced skin incisional wound healing with intracellular ATP delivery via macrophage proliferation and direct collagen production. *Frontiers in Pharmacology* 2021; 12: 594586. <https://doi.org/10.3389/fphar.2021.594586>. **PMID: 34220491**
15. Yuan J, Zhang Y, Zhang Y, Mo Y, **Zhang Q**. Effects of metal nanoparticles on tight junction-associated proteins via HIF-1 $\alpha$ /miR-29b/MMPs pathway in human epidermal keratinocytes. *Particle and Fibre Toxicology* 2021 Mar 19; 18(1): 13. <https://doi.org/10.1186/s12989-021-00405-2>. **PMID: 33740985**
16. Mo Y, Zhang Y, Wan R, Jiang M, Xu Y, **Zhang Q**. miR-21 mediates nickel nanoparticle-induced pulmonary injury and fibrosis. *Nanotoxicology* 2020; 14(9): 1175–1197. <https://doi.org/10.1080/17435390.2020.1808727>. **PMID: 32924694**
17. Mo Y, Zhang Y, Mo L, Wan R, Jiang M, **Zhang Q**. The role of miR-21 in nickel nanoparticle-induced MMP-2 and MMP-9 production in mouse primary monocytes: *in vitro* and *in vivo* studies. *Environmental Pollution* 2020 Dec; 267: 115597. <https://doi.org/10.1016/j.envpol.2020.115597>. **PMID: 33254626**
18. Zhang Feng S, Zhang Z, Mo Y, Tong R, Zhang Z, Chen Z. He D, Wan R, Gao M, Mo Y. **Zhang Q**, Huang Y. Activation of NLRP3 inflammasome in hepatocytes after exposure to cobalt nanoparticles: the role of oxidative stress. *Toxicology in Vitro* 2020; 69: 10496769. <https://doi.org/10.1016/j.tiv.2020.104967>. **PMID: 32805375**
19. Zhang X, He Y, Lin Q, Hung L, **Zhang Q**, Xu Y. Adverse effects of sub-chronic exposure to cooking oil fumes on the gonads and the GPR30-mediated signaling pathway in female rats. *Molecular and Cellular Toxicology* 2020; 16(1): 13-24.
20. Mo Y, Sarojini H, Wan R, **Zhang Q**, Wang J, Eichenberger SE, Kotwal G, Chien S. Intracellular ATP delivery causes rapid tissue regeneration via upregulation of cytokines, chemokines, and stem cells. *Frontiers in Pharmacology* 2020 Jan 16; 10: 1502. doi: 10.3389/fphar.2019.01502. eCollection 2019. **PMID: 32009945**
21. Huang Y, Zhu J, Li H, Wang W, Li Y, Yang X, Zheng N, Liu Q, **Zhang Q**, Zhang W, Liu J. Cadmium exposure during prenatal development causes testosterone disruption in multigeneration via SF-1 signaling in rats. *Food and Chemical Toxicology* 2020; 135:110897.



- <https://doi.org/10.1016/j.fct.2019.110897>. PMID: 31654709
22. Cai Z, Zheng F, Ding Y, Zhan Y, Gong R, Li J, Aschner M, **Zhang Q**, Wu S, Li H. Nrf2-regulated miR-380-3p blocks the translation of Sp3 protein and its mediation of paraquat-induced toxicity in mouse neuroblastoma N2a cells. *Toxicology Sciences* 2019; 171(2): 515–529. PMID: 31368498
  23. Zheng F, Luo Z, Zheng C, Li J, Zeng J, Yang H, Chen J, Jin Y, Aschnere M, Wu S, **Zhang Q**, Li H. Comparison of the neurotoxicity associated with cobalt nanoparticles and cobalt chloride in Wistar rats. *Toxicology and Applied Pharmacology* 2019; 369: 90-99. PMID: 30849457
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#### Presentations and Abstracts

1. Zhang Y, Mo Y, Yuan J, **Zhang Q**. MMP-3-mediated cleavage of osteopontin is involved in copper oxide nanoparticle-induced activation of fibroblasts. 62th Annual Meeting of the Society of Toxicology; March 19-23, 2023; Nashville, Tennessee.
2. Mo Y, Yuan J, Zhang Y, **Zhang Q**. Nickel nanoparticles induce epithelial-mesenchymal transition in human bronchial epithelial cells via the HIF-1 $\alpha$ /HDAC3 pathway. 2022 Research! Louisville; September 19-23, 2022; Louisville, KY.
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6. Yuan J, Mo Y, Zhang Y, **Zhang Q**. A protective role of autophagy in fine airborne particulate matter-induced apoptosis in LN-229 cells. 2021 Research! Louisville; Oct. 25-28, 2021; Louisville, KY.
7. Mo Y, Zhang Y, **Zhang Q**. DNA Damage Caused by Nickel Nanoparticle Exposure in Lung Epithelial Cells. 58<sup>th</sup> Annual Meeting of the Society of Toxicology; March 15-19, 2020; Anaheim, CA.
8. Mo Y, Zhang Y, **Zhang Q**. Comparative Mouse Lung Injury by Nickel Nanoparticles with Differential Surface Modification. 15<sup>th</sup> International Congress of Toxicology (ICTXV); July 15-19, 2019; Honolulu, HI.
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10. Mo Y, **Zhang Q**. Nickel nanoparticles-induced lung injury and fibrosis: the role of miR-21. 58<sup>th</sup> Annual Meeting of the Society of Toxicology; March 10-14, 2019; Baltimore, MD.
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13. **Zhang Q**, Mo Y, Wan R. Genotoxic effects of metal nanoparticles: in vitro and in vivo studies. 1<sup>st</sup> International Occupational Health Forum & 3<sup>rd</sup> China-US Occupational Health Symposium; August 22-23, 2017; Beijing, China.
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32. Mo Y, Wan R, Tollerud DJ, **Zhang Q**. The role of hypoxia-inducible factor in MMP-2 and MMP-9 production by human monocytes exposed to nickel nanoparticles. 49<sup>th</sup> Annual Meeting of the Society of Toxicology; March 7-11, 2010; Salt Lake City, UT.

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38. Mo Y, Wan R, Wang J, Chien S, **Zhang Q**. Intracellular ATP delivery accelerates skin wound healing through up-regulation cytokines and vascular endothelial growth factors expression. "*Young Investigator Awards*" presentation at 19<sup>th</sup> Annual Meeting of the Wound Healing Society with SAWC 2009; April 26-29, 2009; Dallas, TX.
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41. Mo Y, Wan R, Tollerud DJ, **Zhang Q**. Activation of endothelial cells after exposure to ambient ultrafine particles: the role of NADPH oxidase. *Platform presentation*, 48<sup>th</sup> Annual Meeting of the Society of Toxicology, March 15-19, 2009, Baltimore, MD.
42. Wan R, Mo Y, Tollerud DJ, **Zhang Q**. Matrix metalloproteinase-2 and- 9 are induced differently by metal nanoparticler in human monocytes: the role of oxidative stress and protein tyrosine kinase activation. *Oral Presentation*, Nanotechnology Symposium 2008, October 3-4, 2008, Sullivan University, Louisville, KY.
43. **Zhang Q**, Mo Y, Wan R, Tollerud DJ. Pulmonary and systemic effects of transition nanoparticles. *Oral Presentation*, Nanotechnology Symposium 2008, October 3-4, 2008, Sullivan University, Louisville, KY.
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45. **Zhang Q**, Wan R, Mo Y, Chien SF. Up-regulation of pro-and anti-inflammatory cytokines expression during intracellular energy delivery for wound care. *Wound Rep Reg* 2008; 16: A57; Wound Healing Society Annual Meeting, April 24-27, 2008, San Diego, CA.
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49. Mo Y, Wan R, Shah N, Tollerud DJ, **Zhang Q**. Activation of endothelial cells after exposure to ultrafine particles. University of Louisville Research!Louisville, Oct. 16-19, 2007, Louisville, KY.
50. Wan R, Mo Y, Wang J, Chien S, **Zhang Q**. Intracellular ATP delivery accelerates skin wound healing trough up-regulation of pro-and anti-inflammatory cytokine expressions. University of Louisville Research!Louisville, Oct. 16-19, 2007, Louisville, KY.
51. **Zhang Q**, Yang Q, Mo Y, Tollerud DJ. Metalloproteinase and inflammatory cytokines produced by macrophages in response to different type of metal nanoparticles. **Oral Presentation**, 2007 ATS International Conference, May 18-23, 2007, San Francisco, CA. *American Journal of Respiratory and Critical Care Medicine* 2007; 175: A246.

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53. **Zhang Q**, Zhu X, Dziubla T, Yu K, Tollerud DJ, Fisher AB. Oxidative-stress potency of ultrafine particles in mouse pulmonary microvascular endothelial cell. ATS International Conference, May 19-24, 2006, San Diego, CA.
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101. Sato K, Kusaka Y, **Zhang Q**, Okada K, Nakakuki K, Muraoka R. Effect of cadmium on citrate uptake by isolated rats renal brush border membrane vesicles. The 4<sup>th</sup> International Symposium on Metal Ions in Biology and Medicine, 1996, Spain.
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108. He L, Hong H, **Zhang Q**, Zhang Z, Lou J, Zhong H. The epidemiological study of occupational hazards of workers exposed to silk dust. 14<sup>th</sup> Asian Conference on Occupational Health, Oral Speaker, October 15-17, 1994, Beijing. *Book of Abstracts*.
109. He L, Zhang Z, Hong C, **Zhang Q**, Lou J, Zhong H. Experimental studies on toxicity and the effect on the rat lung by silk dust. The 14<sup>th</sup> Asian Conference on Occupational Health, Oral Speaker, October 15-17, 1994, Beijing. *Book of Abstracts*.

## INVITED TALKS/PRESENTATIONS

Grand Rounds, UofL Division of Pulmonary, Critical Care and Sleep Disorders Medicine. "Health Effects of Transition Metal Nanoparticles". June 20, 2008.

Center for Environmental Research and Technology, University of California Riverside. "Activation of endothelial cells after exposure to ambient ultrafine particles: the role of NADPH oxidase". April 1, 2008.

Qunwei Zhang, MD, MPH, PhD

Zhejiang Academy of Medical Sciences, P.R. of China. "Activation of endothelial cells after exposure to ambient ultrafine particles: the role of NADPH oxidase". April 20, 2009.

Zhejiang Academy of Medical Sciences, P.R. of China. "Differential genotoxic effects of transition metal nanoparticles: the role of oxidative stress". April 23, 2009.

Particles 2010 International conference, Regal Sun Resort, Lake Buena Vista (Orlando), FL. "The role of hypoxia inducible factor 1 $\alpha$  in MMP-2 and MMP-9 production by human monocytes exposed to nickel nanoparticles". May 22-25, 2010.

Zhejiang Academy of Medical Sciences, P.R. of China. "Genotoxic effects of metal nanoparticles: *in vivo* and *in vitro*". June 20, 2013.

Zhejiang Academy of Medical Sciences, P.R. of China. "Health effects of metal nanoparticles". July 30, 2014.

Beijing Key Laboratory of Occupational Safety and Health, Beijing Municipal Institute of Labor Protection. "Toxicity of metal nanoparticles". July 8, 2015.

Zhejiang Academy of Medical Science, P.R. of China. "The mechanisms involved in Nano-ZnO-induced hepatotoxicity". July 15, 2015.

Fujian Medical University School of Public Health, P.R. of China. "Effect of particulate matter (PM) with high glucose on macrophages/monocytes". July 26, 2015.

Beijing Key Laboratory of Occupational Safety and Health, Beijing Municipal Institute of Labor Protection. "PM, high glucose and monocytes". April 15, 2016.

Fujian Medical University School of Public Health, P.R. of China. "Genotoxic effects of metal nanoparticles". April 22, 2016.

Zhejiang Academy of Medical Sciences, P.R. of China. "Carbon Coating Alleviates Nickel Nanoparticle-Induced Lung Inflammation and Monocyte Activation in Mouse". June 19, 2017.

China Pediatric Sleep Medicine Forum, Wenzhou Medical University, P. R. of China. "Nanomaterials and Lung Injury". April 6-8, 2018.

Fujian Medical University School of Public Health, P.R. of China. "Comparative mouse lung injury by nickel nanoparticles with different surface modification". April 10, 2018.

Shanxi Medical University School of Public Health, P. R. of China. "Comparative mouse lung injury by nickel nanoparticles with differential surface modification". July 28, 2019.

Nanjing Medical University School of Public Health, P. R. of China. "Comparative mouse lung injury by nickel nanoparticles with differential surface modification". July 29, 2019.

Huazhong University of Science and Technology, Tongji Medical College, School of Public Health, P. R. of China. "Comparative mouse lung injury by nickel nanoparticles with differential surface modification". July 30, 2019.

Zhejiang Academy of Medical Sciences, P.R. of China. "Comparative mouse lung injury by nickel nanoparticles with differential surface modification". August 2, 2019.

## **RESEARCH GRANTS**

### **Current Grants**

1 R01 HL147856-01

NHLBI/NIH

Mechanisms underlying metal nanoparticle-induced lung injury and fibrosis.

Role: PI

Dr. Qunwei Zhang (PI)

\$1,561,979 Total cost 06/01/2019-05/31/2023

2 R25 CA134283-06A1

University of Louisville Cancer Education Program

Drs. David Hein (contact) and La Creis Kidd, Multi-PIs

Qunwei Zhang, MD, MPH, PhD

NIH/NCI \$1,620,000 Total cost 04/01/2017-03/31/2022  
The long-term object is to recruit, educate and motivate outstanding undergraduate and professional student to pursue further training and future careers in cancer research.  
Role: Faculty Participant and Mentor

T32- ES011564 Drs. David Hein and John Wise (PI)  
NIEHS/NIH \$2,575,255 Total cost 07/01/2021-06/30/2026  
UofL Environmental Health Sciences Training Program  
Role: Faculty Participant and Mentor

**Completed Grants**

NIEHS P30 Pilot Project Dr. Xiao-An Fu (PI)  
NIEHS/NIH \$50,000 Total cost 04/01/2021-09/30/2022  
Analysis of harmful compounds in aerosols of electronic cigarettes to evaluate toxicity.  
Role: Co-investigator

NIEHS P30 Pilot Project Dr. Qunwei Zhang (PI)  
NIEHS/NIH \$40,000 Total cost 09/01/2020-03/31/2022  
Mechanisms underlying the susceptibility of diabetics to air pollution.  
Role: PI

1 R21 ES028911-01 Dr. Qunwei Zhang (PI)  
NIEHS/NIH \$423,500 Total cost 12/15/2017-11/30/2019  
(No-cost extension until 11/30/2021)  
Mechanisms of carcinogenic effects of nickel nanoparticles.  
Role: PI

Kentucky Lung Cancer Research Program Dr. Qunwei Zhang (PI)  
\$150,000 Total cost 06/01/2017-05/31/2019  
(No-cost extension until 05/31/2020)  
Mechanisms underlying ambient particulate matter-induced lung cancer.

ES023693-01 Dr. Qunwei Zhang (PI)  
NIEHS/NIH \$450,000 Total cost 09/17/2014-08/31/2017  
(No-cost extension until 06/30/2019)  
The role of microRNA miR21 in nickel nanoparticles-induced MMPs production.  
Role: PI

81473009 Dr. Rong Wan (PI)  
National Natural Sciences Foundation of China ¥600,000 Total cost 01/01/2015-12/31/2018  
The role of SENP1, a SUMO-specific protease mediated Sp1-desumoylation in the Nano-Co-induced cell transformation.  
Role: Co-investigator

KSEF-148-502-16-381 Dr. Qunwei Zhang (PI)  
KSEF \$30,000 Total cost 07/01/2016-06/30/2017  
(No-cost extension until 06/30/2018)  
Mechanisms underlying ambient particulate matter-induced DNA damage and cell transformation.  
Role: PI

The EVPRI Internal Research Grant Dr. Qunwei Zhang (PI)  
50992 (UofL Internal Research Grant) \$3,000 Total cost 06/01/2016-05/31/2017  
Activation of inflammasome in monocytes/macrophages exposure to fine particulate matter with high glucose.  
Role: PI

Qunwei Zhang, MD, MPH, PhD

2014J01333 Dr. Rong Wan (PI)  
Natural Sciences Foundation of Fujian Province, China ¥60,000 Total cost 01/01/2014-12/31/2016  
Mechanisms underlying cobalt nanoparticles-induced genotoxic effect and cell malignant transformation in  
bronchial epithelial cells.  
Role: Co-investigator

NIH/NCI R25-CA134283 Dr. David Hein (PI)  
University of Louisville Cancer Education Program  
NIH/NCI \$1,543,610 Total cost 09/14/2011-08/31/2016  
The long-term object is to recruit, educate and motivate outstanding undergraduate and professional student to  
pursue further training and future careers in cancer research.  
Role: Faculty Participant and Mentor

T32- ES011564 Dr. David Hein (PI)  
NIH/NIEHS \$2,037,745 Total cost 07/01/2009-6/30/2014  
UofL Environmental Health Sciences Training Program  
Role: Faculty Participant and Mentor

T32- ES011564 Dr. David Hein (PI)  
NIEHS/NIH \$2,311,776 Total cost 04/01/2016–03/31/2021  
UofL Environmental Health Sciences Training Program  
Role: Faculty Participant and Mentor

P30-ES014443 Dr. Kenneth Ramos (PI)  
NIEHS/NIH \$4,440,000 Total cost 06/04/2007-03/31/2012  
Center for Environmental Genomics and Integrative Biology  
Role: Internal Advisory Board (IAB) and Center Investigator

UofL Intramural Research Incentive Grant Dr. Qunwei Zhang (PI)  
\$5,000 Direct cost 01/01/2012-12/31/2012  
Mechanisms underlying nickel nanoparticle-induced MMPs production.  
Role: PI

4751-RFA-05-2/06-12 Dr. Qunwei Zhang (PI)  
Health Effects Institute \$300,000 Total cost 03/01/2007–12/31/2011  
Walter A. Rosenblith New Investigator Award  
Activation of endothelial cells and gene expression in lungs following exposure to ultrafine particles.  
Role: PI

CTSP- Basic Dr. Qunwei Zhang (PI)  
University of Louisville \$49,979 Total cost 06/01/2010-05/31/2011  
Clinical & Translational Sciences Pilot Grant Program's Basic Award  
Develop and evaluate the degradable polymerpoly (troloxester) nanoparticles for medical application.  
Role: PI

KSEF-1686-RED-11 Dr. Qunwei Zhang (PI)  
Kentucky Sciences and Engineers Foundation \$100,000 Total cost 07/01/2008–6/30/2010  
(No-cost extension until 06/30/11)  
Oxidative stress and endothelial cell dysfunction in animal exposure to ultrafine particles and cigarette smoke.  
Role: PI

AHA-0865476D Dr. Qunwei Zhang (PI)  
American Heart Association \$121,000 Total cost 07/01/2008–06/30/2010  
Great Rivers Affiliate (No-cost extension until 06/30/11)  
Mechanism underlying the susceptibility of diabetics to ultrafine particles

Qunwei Zhang, MD, MPH, PhD

Role: PI

2R44AR052984-02 Dr. Sufan Chien (PI)  
NIH SBIR \$1,173,455 Total cost 09/01/2007–08/31/2010  
Matching Fund from Commonwealth of KY \$800,000 Total cost  
Partial thickness wound healing via topical ATP delivery  
Role: Co-Investigator

GB 061077P2 (1P30ES01443-01A1) Dr. Qunwei Zhang (PI)  
\$30,000 Direct cost 04/01/2008–03/31/2009  
UofL NIH/NIEHS Center for Environmental Genomics and Integrative Biology Pilot Project: Carcinogenesis  
of nickel nanoparticles.  
Role: PI

1P30ES01443-01A1 Dr. Qunwei Zhang (PI)  
Career Development Program Award \$20,000 Direct cost 06/04/2007–03/31/2008  
UofL NIH/NIESH Center for Environmental Genomics and Integrative Biology  
Role: PI

UofL Intramural Research Incentive Grant Dr. Qunwei Zhang (PI)  
\$5,000 Direct cost 06/01/2006–05/31/2007  
Genotoxic effects of transition metal nanoparticles.  
Role: PI

RG-872-N Dr. Qunwei Zhang (PI)  
National American Lung Association \$70,000 Direct cost 07/01/2004–12/30/2006  
Endothelial generation of reactive oxygen species in lung exposure to ultrafine particles.  
Role: PI

Japanese Ministry of Education, Sport, and Culture 4/1/98–03/31/00  
Study on the toxicity of ultrafine metals on the lungs and its mechanism.  
Role: Co-investigator

National “Eighty-Five” Key Plan 7/1/92–6/30/97  
Supported by China Committee of Science and Technology  
Evaluation of the therapeutic effects of whole lung lavage in coal worker’s pneumoconiosis.  
Role: Co-investigator

Japanese Ministry of Education, Sport, and Culture 4/1/96–3/31/97  
Study on the effects of heavy metals on renal brush border membrane.  
Role: Co-investigator

Japanese Ministry of Education, Sport, and Culture 4/1/95–3/31/97  
Study of immunotoxicity induced by nickel and cobalt.  
Role: Co-investigator

Department of Public Health, Zhejiang Province, P.R. of China 1/1/95–12/31/96  
Effects of some Chinese traditional anti-aging medicine on the SOD mRNA expression in the brain.  
Role: PI

Department of Public Health, Zhejiang Province, P.R. of China 1/1/94–12/30/95  
The study of Gynostemma Pentaphyllum Makino (Chinese tradition medicine) on silica-induced fibrosis.  
Role: PI

Department of Public Health, Zhejiang Province, P.R. of China 5/1/94–4/30/96  
The role of platelet activating factors in the pulmonary fibrosis induced by silica.  
Role: PI

Qunwei Zhang, MD, MPH, PhD

Department of Public Health, Zhejiang Province, P.R. of China  
Determination the histamine in silicosis patients and its clinic significance.  
Role: Co-investigator

8/1/92–7/31/94