

CURRICULUM VITAE

Name Ke Jian “Jim” Liu, Ph.D.

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1 University of New Mexico,
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Education

1982 B.Sc., Chemistry
Peking University, Beijing, China.

1988 Ph.D., Radiation Biochemistry,
The University of Leeds, Leeds, England.

Postdoctoral Training

1988-89 Biophysical Chemistry
Radiation Laboratory, University of Notre Dame, Indiana.

1990-93 Biophysics/Physiology
Department of Biophysics & Physiology,
University of Illinois at Urbana-Champaign, Illinois.

Academic Appointments

1993-1999 Research Assistant Professor
Department of Radiology, Dartmouth College, Hanover, New Hampshire.

1999-2005 Adjunct Assistant Professor
Department of Radiology, Dartmouth College, Hanover, New Hampshire.

1999-2002 Assistant Professor
College of Pharmacy, University of New Mexico, Albuquerque, NM.

2002-2006 Associate Professor
College of Pharmacy, University of New Mexico, Albuquerque, NM.

2000-2019 Director
EPR core facility of University of New Mexico Health Science Center.

2003-2008 Research Core Leader,

New Mexico Center for Environmental Health Sciences,
University of New Mexico, Albuquerque, NM.

- 2004-2009 Associate Director
Brain Imaging Center, University of New Mexico, Albuquerque, NM.
- 2008-2013 Assistant Dean for Research
College of Pharmacy, University of New Mexico, Albuquerque, NM.
- 2009-2019 Director
Brain Imaging Center, University of New Mexico, Albuquerque, NM.
- 2003-present Adjunct Professor of Neurology
School of Medicine, University of New Mexico, Albuquerque, NM.
- 2006-present Professor
College of Pharmacy, University of New Mexico, Albuquerque, NM.
- 2013-present Associate Dean for Research
College of Pharmacy, University of New Mexico, Albuquerque, NM.
- 2017-present University Distinguished Professor
University of New Mexico, Albuquerque, NM.

Honors And Awards

- 1981 Outstanding Student Award, Peking University, China.
- 1984 National Scholarship for Study in the U.K., Chinese Ministry of Education.
- 1987 Overseas Research Student Award, British Council.
- 1987 Young Investigator Award, 8th International Congress of Radiation Research, U.K.
- 1997 Young Scientist Award, 2nd International Conference on Bioradicals and 5th International Workshop on ESR Imaging and in vivo ESR Spectroscopy, Japan.
- 2000 Established Investigator Award, American Heart Association.
- 2002 Outstanding Oversea Scientist Award, Chinese National Science Foundation.
- 2006-present Honorary Professor, School of Chinese Medicine, University of Hong Kong.
- 2008 5th Annual Creative Award, University of New Mexico.

- 2008 Dean William M. Hadley College of Pharmacy Distinguished Faculty Scholar Award, University of New Mexico.
- 2009-2014 Visiting Professor, Fourth Military Medical University, XiAn, China.
- 2009-2012 Guang-Hua Visiting Professor, XiAn Jiao Tong University, XiAn, China.
- 2013 A. Earl Walker Award for Outstanding Achievement in Neuroscience Research, University of New Mexico.
- 2016 Excellence in Research Award (Basic Science), Health Sciences Center, University of New Mexico

Leadership and Management Training

American Association of College of Pharmacy Academic Research Fellows Program, September 2013 – July 2014.

NIH/National Grant Review Committees

- 2003 US Civilian Research and Development Foundation, ad hoc reviewer.
- 2003 Philip Morris External Research Program, ad hoc reviewer.
- 2004 Philip Morris External Research Program, ad hoc reviewer.
- 2005 (Feb) Cancer Etiology Study Section, NIH, ad hoc reviewer.
- 2005 (Jun) Cancer Etiology Study Section, NIH, ad hoc reviewer.
- 2005 (Jun) Special Emphasis Panel, ZRG1 MOSS-D (12), NIH.
- 2005 (Aug) Special Emphasis Panel, ZES1 JAB-C (JB) (P) (Superfund Basic Research and Training Program), NIH.
- 2005 Philip Morris External Research Program, ad hoc reviewer.
- 2005 (Oct) Special Emphasis Panel, ZHL1-SRC-99 (P01 review), NIH.
- 2005-2007 Brain 1 Study Section, American Heart Association, Member.
- 2006 Israel Science Foundation, ad hoc reviewer.
- 2006 (May) Special Emphasis Panel, ZRG1 DIG-C 50 R, NIH.
- 2006 Natural Science Foundation of China, ad hoc reviewer.
- 2006 (Jun) Cancer Etiology Study Section, NIH, ad hoc reviewer.

2006 Research Grant Council, Hong Kong, ad hoc reviewer.

2007 (Feb) Cancer Etiology Study Section, NIH, ad hoc reviewer.

2007 Natural Science Foundation of China, ad hoc reviewer.

2007 Research Grant Council, Hong Kong, ad hoc reviewer.

2007 Brain 3 Study Section, American Heart Association, Member.

2007 Cancer Etiology Study Section, NIH, Member.

2008 Research Grant Council, Hong Kong, ad hoc reviewer.

2008 (Nov) NIH/NIBIB Special Emphasis Panel, ZEB1 OSR-D J1 S, member.

2008 Natural Science Foundation of China, ad hoc reviewer.

2008 Brain 3 Study Section, American Heart Association, Member.

2008 Cancer Etiology Study Section, NIH, Member.

2009 Research Grant Council, Hong Kong, ad hoc reviewer.

2009 Cancer Etiology Study Section, NIH, Member.

2009 NIH NCI Discovery and Development P01 SEP Panel, Member.

2009 NIH Challenge Grant Panel, ZRG1 BDCN-T (58) R, Reviewer.

2009 NIH Carcinogenesis ARRA CR Panel (ZRG1 OBT-Z 95 S), Member.

2010 Cancer Etiology Study Section, NIH, Member.

2010 NIH NCI Discovery and Development P01 SEP Panel, Member.

2010 NIH Special Emphasis Panel, ZRG1 OBT-Z (02), Member.

2010 NIH/NIBIB Special Emphasis Panel, ZEB1 OSR-D (J1) S, member.

2011 Cancer Etiology Study Section, NIH, Member.

2011 NIH Special Emphasis Panel, ZRG1 CE-1 (02) S, Member.

2011 Natural Science Foundation of China, ad hoc reviewer.

- 2012 (Feb) Xenobiotic and Nutrient Disposition & Action Study Section, NIH, ad hoc member.
- 2012 Natural Science Foundation of China, ad hoc reviewer.
- 2012 (Oct) Xenobiotic and Nutrient Disposition & Action Study Section, NIH, ad hoc member.
- 2013 NIH Special Emphasis Panel, ZRG1 OBT-Z (02) M, Member.
- 2013 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2014 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2015 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2016 NIH Special Emphasis Panel, ZRG1 DKUS P-82, Member.
- 2016 Department of Defense Congressionally Directed Medical Research Programs (CDMRP), Metals Toxicology review panel, member.
- 2016 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2017 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2017 Special Emphasis Panel, ZES1 LWJ K R (R35 Revolutionizing Innovative, Visionary Environmental Health Research), NIH, Member.
- 2017 Special Emphasis Panel, ZES1 LWJ-D (P2) 1 (P30 Core Center Review Committee), NIH, member.
- 2018 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2018 NIH Special Emphasis Panel, ZES1 JAB-D (K9) 1, Member.
- 2019 Xenobiotic and Nutrient Disposition & Action Study Section, NIH, member.
- 2019 NIH Special Emphasis Panel, ZES1 JAB-D 1, Member.
- 2019 NIH Special Emphasis Panel, ZES1 JAB-D (SF) 1, Member.
- 2021 NIH Special Emphasis Panel, ZCA1 SRB-X (M1) S, Member.

Editorial

Associate Editor: Toxicology and Applied Pharmacology (2014-present)

Section Editor: Medical Gas Research (2013-present)

Guest Editor: Special Issue on “Recent advances in metal toxicity and carcinogenesis research”, Toxicology and Applied Pharmacology, Volume 331, September, 2017.

Guest Editor: Special Issue on “Metal toxicity and carcinogenesis”, Toxicology and Applied Pharmacology, to be published in September, 2019.

Editorial Board:

Perspectives in Medicinal Chemistry (2009- 2012)
Neurological Research (2008-present)
Acta Biophysica Sinica (2011-present)
CNS Neuroscience & Therapeutics (2011-present)
Biophysics Reports (2016-present)

Ad Hoc Journal Peer Review

Biological Psychiatry
Cancer Research
Carcinogenesis
Cell Reports
Chemical Research in Toxicology
Environmental Health Perspective
Free Radical Biology & Medicine
Glia
Journal of American Chemical Society
Journal of Biological Chemistry
Journal of Cellular Physiology
Journal of Cerebral Blood Flow and Metabolism
Journal of Molecular Cell Biology
Journal of National Cancer Institute
Journal of Neurochemistry
Nature Protocol
PNAS
Stroke
and others...

Major Research Interests

- Molecular mechanism of arsenic and chromium-induced toxicology and carcinogenesis
- Molecular mechanism of brain injury and neuroprotection in stroke
- In vivo imaging of oxidative stress and tissue oxygenation.
- Roles of free radicals and oxidative stress in cancer development.

Research Funding

Current Grant Support:

08/2014 – 07/2020 R01CA182969, NIH/NCI
 mPI: L.G. Hudson and K.J. Liu
 “Zinc Chemoprevention of Arsenic Co-Carcinogenesis”
 Total cost: \$1,891,250

9/2018-9/2023 R01ES016893, NIH/NIEHS
 PI: J. Wise; K.J. Liu, sub-contract PI
 “Particulate Cr(VI) toxicology in human lung epithelial cells and fibroblasts”
 Total cost: \$1,618,550

7/2017-6/30/2022 1P42ES025589, NIH/NIEHS
 PI: J. Lewis; K.J. Liu, co-PI, BioProject 2
 “UNM Metal Exposure Toxicity Assessment on Tribal Lands in the Southwest (METALS) Superfund Research Program”
 Total cost: \$6,486,890

9/2017- 8//2022 1P20GM121176-01, NIH/NIGMS
 PI: V. Derectic; K.J.Liu, Mentor, Scholarly Activities Director
 “Autophagy, Inflammation and Metabolism (Aim) In Disease Center”
 Total cost: \$12,285,555

4//2018 – 3/2023 1R01ES029369-01, NIH/NIEHS
PI: K.J. Liu
 “Arsenic, GATA-1, and Hematotoxicity”
 Total cost: \$1,704,375

4//2018 – 3/2023 1R01ES029369-03S1, NIH/NIEHS
PI: K.J. Liu
 “The Role of Biotransformation in Arsenic-Induced Hematotoxicity”
 Total cost: \$346,391

7/2020 – 7/2021 R13ES032293, NIH/NIEHS
PI: K.J. Liu
 “The 11th Conference on Metal Toxicity and Carcinogenesis”
 Total cost: \$8,000

4/2020 – 4/2025 R01ES030993, NIH/NIEHS
mPI: K.J. Liu and L.G. Hudson
 “Mutational Signatures of a Combined Environmental Exposure: Arsenic and Ultraviolet Radiation”
 Total cost: \$3,000,686

7/2020- 5/2025 P20GM130422, NIH/NIGMS
 PI: M.J. Campen; K.J.Liu, Deputy Director
 “University of New Mexico Center for Metals in Biology and Medicine”
 Total cost: \$11,547,504

Completed Grant Support:

(As Principal Investigator)

- 6/1990 – 5/1992 American Heart Association of Metropolitan Chicago Fellowship
PI: K.J. Liu
Total cost: \$40,000
- 07/1995 - 06/1996 American Cancer Society
PI: K.J. Liu
“In vivo investigation on the biochemical mechanism of Cr(VI) induced carcinogenicity”
Total cost: \$15,000
- 1997 Charles River Laboratories
PI: K.J. Liu
“Cr(V)-mediated free radical formation in vivo”
Total cost: \$15,000
- 1997 National Institute for Occupational Safety and Health
PI: K.J. Liu
“Measurement of one-electron-reduction of Cr(VI) by low frequency EPR”
Total cost: \$10,000
- 9/1997-9/1999 R21 HL60326, NIH/NHLBI
PI: K.J. Liu
“Development of in vivo EPR spin trapping”
Total cost: \$242,000.
- 1998 Charles River Laboratories
PI: K.J. Liu
“Cr(V)-mediated free radical formation in vivo”
Total cost: \$15,000
- 1998 National Institute for Occupational Safety and Health
PI: K.J. Liu
“Measurement of one-electron-reduction of Cr(VI) by low frequency EPR”
Total cost: \$40,000
- 1998 Oxis International Inc.,
PI: K.J. Liu
“Evaluation of 5-diethoxyphosphoryl-5-methyl-1-pyrroline-n-oxide (DEPMPO) as a spin trapping agent”
Total cost: \$2,500
- 1999 National Institute for Occupational Safety and Health
PI: K.J. Liu
“Measurement of one-electron-reduction of Cr(VI) by low frequency EPR”

Total cost: \$11,000

1999 Charles River Laboratories
PI: K.J. Liu
 “Cr(V)-mediated free radical formation in vivo”
 Total cost: \$3,000

1/2000-12/2004 0040041N, American Heart Association
PI: K.J. Liu
 “pO₂ and neuroprotection in reversible focal ischemia”
 Total cost: \$300,000

2000 SynZyme Technologies Inc.
PI: K.J. Liu
 “Investigation of polynitroxyl albumin as neuroprotective agent during cerebral ischemia”
 Total cost: \$22,000

2000 New Mexico NIEHS Developmental Center Pilot Project
PI: K.J. Liu
 “Role of free radical and reactive intermediates in Cr(VI)-induced toxicity”
 Total cost: \$13,500

2/2001 – 1/2006 P20 RR015636, NIH/NCRR
PI: K.J. Liu
 “Free radical in reperfusion injury to the brain”
 Total cost: \$1,809,397. (PI of project 1 for NIH COBRE Center Grant)

2001 SynZyme Technologies Inc.
PI: K.J. Liu
 “Investigation of polynitroxyl albumin as neuroprotective agent during cerebral ischemia”
 Total cost: \$25,000

1/2002 – 12/2004 30128003, Chinese National Science Foundation
PI: K.J. Liu
 “Antioxidants and oxidative injury in cerebral ischemia and reperfusion”
 Total cost: \$60,000

2002 UNM Health Sciences Center
PI: K.J. Liu
 “Upgrade to ESA electrochemical detection HPLC system”
 Total cost: \$25,810

2/2006 – 1/2007 R01NS044818-S1, NIH/NINDS
PI: K.J. Liu

“Administrative supplement for development of stroke preclinical trials consortia”
 Total cost: \$50,000 (subcontract from PI: Fernando Boada, of U. of Pittsburgh)

4/2004 – 3/2008 R01 ES012938, NIH/NIEHS
PI: K.J. Liu
 “Oxidative mechanisms of arsenic-induced carcinogenesis”
 Total cost: \$1,039,674

7/2005 – 6/2009 0555669Z, American Heart Association
PI: K.J. Liu
 “Effect of tissue pO₂ on cerebral damage in ischemic stroke”
 Total cost: \$198,000

9/1/07 – 8/31/09 UNM Clinical And Translational Science Center
PI: K.J. Liu
 “Translating the neuroprotective hyperoxia treatment from animal model to stroke patients”
 Total cost: \$50,000

2/2006 – 1/2011 P20 RR15636, NIH/NCRR
PI/Director: K.J. Liu
 “Integrative Program in CNS Pathophysiology Research”
 Total cost: \$10,968,678

9/2007 – 8/2010 R21 DA023473, NIH/NIDA
Subcontract PI: K.J. Liu (from G.M. Rosen at U. of Maryland)
 “EPR Imaging of Brain O₂ in Drug Abuse”
 Total cost: \$142,886 (UNM part)

1/2009 – 12/2009 Pilot project, Signature Program in Environmental Health Sciences, UNM
 PIs: K.J. Liu and Laurie Hudson
 “Mechanism of PARP-1 inhibition by arsenite”
 Total cost: \$10,000

9/2009 – 9/2011 P20 RR015636-09S1, NIH/NCRR
PI: K.J. Liu
 “Integrative Program in CNS Pathophysiology Research”
 Total cost: \$916,671

10/2011 – 9/2012 UNM CTSC Pilot Project
 PI: G.A. Rosenberg; K.J. Liu, co-PI
 “Hypoxic injury in white matter assessed with EPR oximetry and MRI in a novel rat model of vascular cognitive impairment”
 Total cost: \$23,057

7/2007 – 6/2012 R01 AG031725, NIH/NIA

PI: K.J. Liu
 “Effect of tissue pO₂ on free-radical damage in stroke”
 Total cost: \$1,537,500

4/2007 – 3/2012 R01 ES015826, NIH/NIEHS
PI: K.J. Liu and L.G. Hudson
 “Arsenic-enhanced skin carcinogenesis by UV radiation”
 Total cost: \$1,781,250

9/2009 – 9/2011 3R01ES015826-03S1, NIH/NIEHS
PI: K.J. Liu and L.G. Hudson
 “Arsenic-enhanced skin carcinogenesis by UV radiation”
 Total cost: \$629,143

9/2012 – 09/2013 R13 ES022127, NIH/NIEHS
PI: K.J. Liu
 “The 7th Conference on Metal Toxicity and Carcinogenesis”
 Total cost: \$4,000

12/2012 – 11/2013 UNM CTSC Innovation Award
PI: K.J. Liu
 “A Blood Biomarker For Early Blood Brain Barrier Damage In Ischemic Stroke”
 Total cost: \$21,000

10/2011 – 9/2013 Murdock Charitable Trust Exceptional Opportunity Concept
PIs: K.J. Liu, L.G. Hudson, C. Marcus, J. Beckman
 “Emerging Role of Zinc-Containing Proteins in Human Diseases”
 Total cost: \$50,000

07/2014 – 06/2015 R13ES024646, NIH/NIEHS
PI: K.J. Liu
 “The 8th Conference on Metal Toxicity and Carcinogenesis”
 Total cost: \$5,000

08/2016 – 07/2017 R13ES027336, NIH/NIEHS
mPI: X. Shi and K.J. Liu
 “The 9th Conference on Metal Toxicity and Carcinogenesis”
 Total cost: \$2,000

03/2011 – 02/2018 P30GM103400, NIH/NIGMS
PI: K.J. Liu
 “Integrative Program in CNS Pathophysiology Research”
 Total cost: \$5,550,430

03/2016 – 02/2018 P30GM103400-05S1, NIH/NIGMS
PI: K.J. Liu
 “Integrative Program in CNS Pathophysiology Research”

Total cost: \$425,724

- 04/2014 - 03/2017 R21DA036721, NIH/NIDA
PI: K.J. Liu
“Methamphetamine-induced alterations in brain tissue oxygenation”
Total cost: \$431,469
- 04/2012-03/2018 R01ES019968, NIH/NIEHS
PI: S. Burchiel; K.J. Liu, co-investigator
“Synergistic Immunosuppression by PAHs and Arsenite”
Total cost: \$1,684,980
- 09/2012 – 05/2018 R01ES021100, NIH/NIEHS
mPI: K.J. Liu and L.G. Hudson
“Arsenic co-carcinogenesis with UVR: nitrosation and oxidation of target proteins”
Total cost: \$1,698,750
- 06/2015 – 05/2018 R01ES021100-04S1, NIH/NIEHS
mPI: K.J. Liu and L.G. Hudson
“Arsenic co-carcinogenesis with UVR: nitrosation and oxidation of target proteins”
Total cost: \$759,960
- 7/2008-12/2018 R01ES016893, NIH/NIEHS
PI: J. Wise; K.J. Liu, sub-contract PI
“Particulate Cr(VI) toxicology in human lung epithelial cells and fibroblasts”
Total cost: \$1,618,550
- 7/2018 – 6/2019 R13ES029807, NIEHS
PI: K.J. Liu
“The 10th Conference on Metal Toxicity and Carcinogenesis”
Total cost: \$8,000

(As Co-Investigator)

- 07/1993 - 06/1995 BE-186, American Cancer Society
“Intratumor tumor oxygenation measured by EPR in experimental tumor treatment”
PI: J.A. O'Hara; K.J. Liu, co-investigator
Total cost: \$225,000.
- 04/1995 - 03/1998 P01GM 34250, NIH/GM
“Pathogenesis and sparing of radiation myelopathy”
PI: P. Jack Hoopes; K.J. Liu, co-investigator
Total cost: \$544,375 (project 4).

06//1997 - 05/2002 R01CA067431, NIH/NCI
 “Metabolism and pO₂ in ischemic and hypoxic brain”
 PI: Jeff Dunn; K.J. Liu, co-investigator
 Total cost: \$821,000.

10/1996 - 09/2001 P41RR011602, NIH/NCRR
 “EPR Center for the Study of Viable Systems”
 PI: Harold M. Swartz; K.J. Liu, Spectroscopist/Lab Manager
 Total cost: \$4,349,000.

10/1999-09/2004 R01CA078734, NIH/NCI
 “Oxygen dosimetry in photodynamic therapy”
 PI: Brian Pogue; K.J. Liu, co-investigator
 Total cost: \$643,385.

10/2001-09/2005 R01ES007259, NIH/NIEHS
 “Mammary signaling by environmental agents”
 PI: Scott Burchiel; K.J. Liu, co-investigator
 Total cost: \$1,470,000.

4/2003-3/2007 P30ES012072, NIH/NIEHS
 “New Mexico Center for Environmental Health”
 PI: Scott Burchiel; K.J. Liu, Research Core Leader
 Total cost: \$2,500,000.

3/2006 – 2/2008 R21 CA113687, NIH/NCI
 PI: G.S. Timmins; K.J. Liu, co-investigator
 “Molecular Imaging of Melanoma by EPR”
 Total cost: \$285,000

10/2011 – 9/2012 UNM CTSC Pilot Project
 PI: W. Liu; K.J. Liu, co-investigator
 “Developing biomarker for early blood brain barrier damage in stroke”
 Total cost: \$25,000

10/2011 – 9/2012 UNM CTSC Pilot Project
 PI: L.G. Hudson; K.J. Liu, co-investigator
 “Pilot Studies on zinc intervention for uranium and arsenic exposures in the Navajo Nation”
 Total cost: \$10,567

4/2008 – 3/2013 R01 NS058807, NIH/NINDS
 PI: H. Shi; K.J. Liu, co-investigator
 “Redox Regulation of Hypoxia Inducible Factor-1 in Cerebra Ischemia”
 Total cost: \$1,987,728

- 07/2010 – 03/2015 UL1TR000041, NIH/NCATS
 PI: R. Larson; K.J. Liu, animal imaging core facility director
 “University of New Mexico Clinical and Translational Science Center”
 Total cost: \$21,386,420
- 02/2014 - 12/2017 R01GM088801, NIH/NIGMS
 PI: Z. Xie; K.J. Liu, sub-contract PI
 “General anesthesia and Alzheimer’s disease neuropathogenesis”
 Total cost: \$1,291,052
- 09/13 - 08/2018 R01NS045847, NIH/NINDS
 PI: G. Rosenberg; K.J. Liu, co-investigator
 “White matter hypoxia in a novel model of MMP-mediated inflammation in SHR/SP rats”
 Total cost: \$1,870,315
- 08/2015 – 03/2020 UL1TR000041, NIH/NCATS
 PI: R. Larson; K.J. Liu, animal imaging core facility director
 “University of New Mexico Clinical and Translational Science Center”
 Total cost: \$18,344,250

Professional Services

Graduate Research

- Supervisor to Ph.D. student Wei Ding, 2002-2007.
- Supervisor to Ph.D. student Jill Hendren, 2006-2010.
- Supervisor to Ph.D. student Chen Chen, 2009-2012.
- Supervisor to Ph.D. student Yong Gu, 2010-2013.
- Supervisor to Ph.D. student Taka Furuichi, 2003-2006.
- Supervisor to Ph.D. student Juliana Hestis, 2014-2020.
- Supervisor to Ph.D. student Hansen Chen, 2014-2015.
- Research committee for graduate student Drew Burdick
 (Supervisor, Scott Burchiel), 2001-2004.
- Research committee for graduate student Virginia Chang in Chemistry Department
 (Supervisor, Patrick Mariano), 2000-2003.
- Research committee for graduate student Antonia Williams in Chemistry Department
 (Supervisor, Marty Kirk), 2001.
- Research committee for graduate student Rebecca L. McNaughton in Chemistry
 Department (Supervisor, Marty Kirk), 2002.
- Research committee for graduate student Zhiming Zhao in Chemistry Department
 (Supervisor, Patrick Mariano), 2003-2006.
- Research committee for graduate student Karen Cooper
 (Supervisor, Laurie Hudson), 2003-2007.
- Research committee for graduate student Jun Gao
 (Supervisor, Scott Burchiel), 2004-2007.
- Research committee for graduate student Isela Martinez
 (Supervisor, Mary Walker), 2006-2007.

Research committee for graduate student Leslie Lund,
(Supervisor, Graham Timmins), 2006-2007.
Research committee for graduate student Ricky VanNess,
(Supervisor, Craig Marcus), 2007-2008.
Research committee for graduate student Brenee King,
(Supervisor, Laurie Hudson), 2009-2012.
Research committee for graduate student Qian Li,
(Supervisor, Scott Burchiel), 2009-2011.
Research committee for graduate student Jennifer Buntz,
(Supervisor, Matthew Campen), 2010-present.
Research committee for graduate student Peace Ezeh
(Supervisor, Scott Burchiel), 20013-present.
Research committee for graduate student Huan Xu
(Supervisor, Scott Burchiel), 20014-present.

UNM College of Pharmacy

PharmD Research Committee, 2000 – 2003.
Faculty Support Committee, 2001 – 2003.
Toxicology Graduate Committee, 2001 - present
Assistant Coordinator, Toxicology Graduate Program, 2002-2003.
Co-Director, Toxicology Graduate Program, 2004-2005.
Curriculum Committee, 2003-2007.
COP PharmD Competencies Task Force, 2003.
Research Committee, 2004-2005.
Co-Chair, Research Objective Group, Strategic Plan Committee, 2003-2004.
Chair, Graduate Education and Research Committee, 2004-2005.
Research Strategic Planning Committee, 2005-2007 (Chair in 2007).
Organizational Planning & Evaluation Committee, 2007-2009.
Tenure and Promotion Committee, 2004-present.
Dean's Executive Leadership Committee, 2008-present.
Research and Scholarship Committee, 2009-present (Chair since 2011)

Medicinal Chemistry Faculty Search Committee, 2000.
Pharmacology Faculty Search Committee, 2000.
Medicinal Chemistry Faculty Search Committee, 2001.
Search Committee for Interim Associate Dean, 2002.
Pharmacogenomics Faculty Search Committee, 2004.
Pharmaceutics and Pharmacokinetics Faculty Search Committee, 2004.
Chair, Medicinal Chemistry Faculty Search Committee, 2004-2005.
Senior Medicinal Chemistry Faculty Search Committee, 2006.
Senior Medicinal Chemistry Faculty Search Committee, 2007.
Pharmaceutics Faculty Search Committee, 2008.
Pharmaceutical Science Faculty Search Committee, 20016.
Budget and Planning Committee, 2016-present

UNM/Health Sciences Center

Biomedical Sciences Graduate Program ad hoc member, 2000, 2001.

Steering Committee, Biomedical Sciences Graduate Program, 2002 - 2005
 Search Committee for UNMHSC MRI Core Facility Director, 2002.
 Organizer, Brain Imaging Center Seminar Series, 2003-2010.
 Internal Advisory Committee, NM NIEHS Center, 2003-2008.
 Director, UNMHSC EPR Core Facility, 2001-present.
 Mentor, Center of Biomedical Research Excellence, UNM, 2005-2011.
 Associate Director, Brain Imaging Center, UNM Health Sciences Center, 2004-2009.
 Research Core Leader, New Mexico Center for Environmental Health Sciences, UNM Health Sciences Center, 2004-2008.
 CTSC Research Core Working Group, 2007.
 HSC Research Strategic Planning Committee, 2005-present.
 Chair, HSC Research Allocation Committee, 2008-2011.
 Internal Advisory Committee, MIND Research Network COBRE on multimodal neuroimaging in schizophrenia, 2008-present.
 HSC Master Planning Committee, 2009-2012.
 HSC Top Slice Committee, 2009-2014
 Internal Advisory Committee, Center for Evolutionary & Theoretical Immunology (CETI), 2009-present
 Director, Brain Imaging Center, UNM Health Sciences Center, 2009-2018.
 Director, CTSC Small Animal Imaging Core Facility, 2011-2016.
 Internal Advisory Committee, UNM Center for Brain Recovery & Repair, 2016-present
 Co-chair, HSC Equipment Fund Committee, 2016-present
 UNM Main Campus-Health Sciences Center Collaboration Working Group, 2016-present.
 UNM Distinguished Professor Selection Committee, 2018-present.

National/International

Session Chair, the 2nd Asia-Pacific EPR Symposium, Hangzhou, China, 1999.
 Session Chair, EPR Viable System 9th International Conference, Hanover, New Hampshire, 2001.
 Member, Committee on the Framework for Evaluating the Safety of Dietary Supplements, Institute of Medicine, National Academy of Sciences (USA), 2002-2003.
 Session Chair, 3rd Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV, 2005.
 Session Chair, International Workshop on In Vivo EPR, Dartmouth College, Hanover, NH, 2004.
 Member, American Heart Association Brain Study Section, 2005-2010.
 Member, Cancer Etiology Study Section, NIH, 2007-2011.
 Organizer, "Workshop on Grantsmanship", Hong Kong University Faculty of Medicine, Hong Kong, July, 2006.
 Organizer, "Imaging in Biological Sciences" Workshop at the Western IDeA States' Symposium on Evolutionary Medicine, Albuquerque, New Mexico, 2007.
 Organizer, "Workshop on Grantsmanship", Hong Kong University Faculty of Medicine, Hong Kong, July, 2007.
 Visiting Professor, Institute of Chemistry, Chinese Academy of Sciences, 2001-present.
 National Advisory Committee, EPR07 Conference, Chicago, 2007.

External Advisor for RGC Grant application, Hong Kong University Faculty of Medicine, Hong Kong, 2006-2012.
 Visiting Professor, Forth Military Medical University, XiAn, China, 2010-present.
 Visiting Professor, Capital Medical University, Beijing, China, 2010-present.
 Mountain West Research Consortium Steering Committee, 2010-2012
 Co-organizer, “1st Symposium on Chinese Medicine in Neurological Diseases”, Beijing, China, Oct 28-30, 2011.
 Vice chair, organizing committee, “1st International Chinese Symposium on Free Radical Research”, Lanzhou, China, August 8, 2012.
 Organizer, “7th Conference on Metal Toxicity and Carcinogenesis”, Albuquerque, New Mexico, Oct 21-24, 2012.
 External Assessor, University of Hong Kong, September, 2012.
 Treasurer, Society for Translational Neuroscience, 2012-present
 Organizer, “8th Conference on Metal Toxicity and Carcinogenesis”, Albuquerque, New Mexico, Oct 26-29, 2014.
 Co-organizer, “9th Conference on Metal Toxicity and Carcinogenesis”, Lexington, Kentucky, Oct 16-19, 2016.
 Secretary-general, U.S. organizing committee, 12th Sino-American Technology and Engineering Conference, Beijing, China, May, 2018.
 Organizer, “10th Conference on Metal Toxicity and Carcinogenesis”, Albuquerque, New Mexico, Oct 28-31, 2018.
 Co-organizer, “11th Conference on Metal Toxicity and Carcinogenesis”, Montreal, Canada, Oct 18-21, 2020.
 Vice President, Metal Specialty Section, Society of Toxicology, 2019-present

Albuquerque Community

Science Fair judge at Hubert Humphrey elementary school, Albuquerque, NM, 2001.
 Soccer Coach, Premier Soccer Academy, Albuquerque, NM, 2002, 2003.
 Soccer Coach, AYSO, Albuquerque, NM, 2004-2005.

Trainees

At Dartmouth College

<u>Name</u>	<u>Position</u>	<u>Present</u>
Minoru Miyake	Postdoc Fellow	Associate Professor, Kagawa University, Japan.
Marin Marinov	Postdoc Fellow	Professor, University of Sofia, Bulgaria.
Jeu Ming Yuan	Graduate student	Taiwan.
Margaret Lee	Undergraduate student	

At University of New Mexico

<u>Name</u>	<u>Position</u>	<u>Present</u>
Wei Ding	Graduate student	Research Scientist/PI, U.S. FDA.
Minoru Miyake	Visiting Scholar	Professor and Chair, Kagawa University, Japan.
Taka Furuichi	Graduate student	Practicing physician, Japan
Steve Shen	Research Ass. Prof.	Professor and Associate Dean, Univ of Hong Kong.

Miao Liu	Postdoc Fellow	Professor, Jilin University, China.
Zhongrui Yuan	Postdoc Fellow	Professor, Shandong Univ., China.
Honglian Shi	Postdoc Fellow	Associate Professor, U. of Kansas.
Wenlan Liu	Postdoc Fellow	Professor and Director, Shenzhen Univ., China
Aaron Pritchard	Lab Tech	Medical student, U. of New Mexico
Shimin Liu	Postdoc Fellow	Res. Professor, Boston Univ.
Xujun Qin	Postdoc Fellow	Professor and Chair, 4th Military Medical Univ., China.
Yingna Li	Postdoc Fellow	Associate Professor, XiAn JiaoTong Univ., China.
Ebany Martinez	Graduate student	Research associate, MIND Res. Network, NM.
Feng Wang	Visting scholar	Professor and Chair, 4th Military Medical Univ., China
Aaron Schnell	Lab Tech	In private business.
John Weaver	Res. Ass. Prof.	Director, EPR core facility, UNM.
Chen Chen	Graduate student	In private business.
Qinchuan Chen	Postdoc Fellow	Senior Scientist, Abbott.
Xi Sun	Postdoc Fellow	Research associate. UNM.
Xixi Zhou	Postdoc Fellow	Research Assistant Professor, UNM.
Rong Pan	Postdoc Fellow	Research Assistant Professor, UNM.
Yong Gu	Graduate student	Associate Professor, Southern Medical U, China
Zhifeng Qi	Postdoc Fellow	Associate Professor, Capital Medical U, China
Shuchun Wang	Visting scholar	Physician scientist, Tianjin Blood Disease Hospital
Andy Chen	Graduate student	Postdoc fellow, U of Hong Kong
Ted Weatherwax	Lab Tech	Medical Student, UNM.
Xinchun Jin	Postdoc Fellow	Professor, Suzhou Univ, China
Jie Liu	Postdoc Fellow	Professor and Director, Tongji Univ, China
Kewei Yu	Graduate student	Physician scientist, Huashan Hospital, China
Vennasa Rosa	Postdoc Fellow	New Mexico state government
Bin Xiang	Visiting scholar	Professor and Director, Dalian Medical U, China
Patricia Bergo	Lab Tech	Postdoc fellow, Brazil
Xiaofeng Ding	Postdoc Fellow	Associate Professor, China.
Prashant Nighot	Res. Assist. Prof.	Associate Professor, Penn State University
Ling Tang	Visting scholar	Currently in my lab
Chenzi Dai	Undergraduate	Currently in my lab
Juliana Huestis	Graduate student	Currently in my lab
Sebastian Medina	Postdoc Fellow	Currently in my lab

Patents

U.S. Patent No. 5,494,030, “Apparatus and methodology for determining oxygen in biological systems”, February 27, 1996.

U.S. Patent No. 5,833,601, “Methodology for determining oxygen tension in biological systems”, November 10, 1998.

U.S. Patent No. 5,706,805, “Apparatus and methodology for determining oxygen tension in biological systems”, January 13, 1998.

U.S. Patent No. 7,223,604, “Methods and kits for the detection of erythrocytes”, May 29, 2007.

U.S. Patent No.: 9,599,625, "Blood Biomarker for Early Blood Brain Barrier Disruption in Ischemic Stroke", March 21, 2017.

U.S. Patent No. 9,606,129, "Blood biomarker for early blood brain barrier disruption in ischemic stroke", March 28, 2017.

U.S. Patent No. 10,254,295 B2, "Blood biomarker for early blood brain barrier disruption in ischemic stroke", April 9, 2019.

U.S. Patent No. 16,262,168, "Blood biomarker for early blood brain barrier disruption in ischemic stroke", December 17, 2019.

U.S. Patent No. 10,591,491, "Blood biomarker for early blood brain barrier disruption in ischemic stroke", March 17, 2020.

U.S. Provisional patent, Application No. 61/788,537, "Arsenic trioxide as an inhibitor of PARP-1 and treatments of disease modulated through same". Inventor: K.J. Liu, L.G. Hudson, K. Cooper, X. Zhou.

U.S. Provisional patent, Application No. 310.0110160, "Neuroprotective compositions and methods". Inventor: K.J. Liu and Jiangang Shen.

Peer-Reviewed Publications

1. X. Pan, **K.J. Liu** and J. Wu, "Charge transfer in TBP-stilbene TBP-TOA and TBP-TEA mixture under gamma irradiation", *J. Radiat. Res. Radiat. Process*, **4(3)**, 8-17 (1986).
2. **K.J. Liu**, J.R. Langan, G.A. Salmon, D.M. Holton and P.P. Edwards, "Pulse radiolysis of solutions of sodium tetraphenylborate", *J. Phys. Chem.*, **92(9)**, 2449-51 (1988).
3. J.R. Langan, **K.J. Liu**, G.A. Salmon, D.M. Holton and P.P. Edwards, "The radiation chemistry of organic amides. Part 1. A pulse radiolysis study of solvated electron and alkali metal-electron species in cyclic amides", *Proc. Roy. Soc. London, Ser. A*, **421**, 169-78 (1989).
4. J.R. Langan, **K.J. Liu**, G.A. Salmon, and P.P. Edwards, "The radiation chemistry of organic amides. Part 2. Electron scavenging yields in N-methylpyrrolidinone", *Proc. Roy. Soc. London, Ser. A*, **424**, 431-438 (1989).
5. H.M. Swartz, S. Boyer, P. Gast, J.F. Glockner, H. Hu, **K.J. Liu**, M. Moussavi, S.W. Norby, N. Vahidi, T. Walczak, M. Wu, R.B. Clarkson, "Measurement of pertinent concentration of oxygen in vivo", *Magn. Reson. Med.* **20**, 333-339 (1991).
6. H.M. Swartz, P. Gast, J.F. Glockner, H. Hu, L.L. Ji, **K.J. Liu**, M. Nilges, S.W. Norby, N. Vahidi, T. Walczak, M. Wu, R.B. Clarkson, "The importance of measuring the concentration of oxygen appropriately and how this might be done", In *Oxidative Damage & Repair: Clinical*,

Biological and Medical Aspects, K.J.A. Davies (ed), Pergamon Press Inc., Oxford, U.K., pp. 415-420 (1991).

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11. L.L. Ji, R.G. Fu, T.G. Waldrop, **K.J. Liu** and H.M. Swartz, "Myocardial response to regional ischemia and reperfusion in vivo in rat heart", *Can. J. Physiol. Pharmacol.* **71**, 811-817 (1993).
12. G. Bacic, **K.J. Liu**, J.A. O'Hara, R.D. Harris, K. Szybinski, F. Goda and H.M. Swartz, "Oxygen tension in a murine tumor: a combined EPR and MRI study", *Magn. Reson. Med.*, **30**, 568-572 (1993).
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15. H.M. Swartz, **K.J. Liu**, F. Goda and T. Walczak, "Indian ink: a potential clinically applicable EPR oximetry probe", *Magn. Reson. Med.*, **31**, 229-232 (1994).
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37. **K.J. Liu**, X. Shi, J. Jiang, F. Goda, N. Dalal, and H.M. Swartz, "Low frequency electron paramagnetic resonance investigation on metabolism of chromium (VI) by whole live mice", *Ann. Clin. Lab. Science*, **26**, 176-184 (1996).
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229. R.M. Speer, J.H. Toyoda, T.J. Croom-Pérez, **K.J. Liu**, J.P. Wise, “Particulate hexavalent chromium inhibits E2F1 leading to reduced RAD51 nuclear foci formation in human lung cells”, submitted.
230. R. Pan, W. Liu, **K.J. Liu**, “MMP-2/9-cleaved occludin promotes endothelia cell death in ischemic stroke”, submitted.

Invited Seminar/Conference Oral Presentations (selected since 1998)

- 1998 “Low frequency electron paramagnetic resonance study of the chromium(VI) reduction in vivo”, 2nd International Symposium on Metals and Genetics, Toronto, Ontario, Canada, May 26-29, 1998
- “Evaluation of DEPMPO as an in vivo spin trapping agent”, 40th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, July, 1998.
- “Characterization and screening of spin traps for application in vivo”, EPR Workshop on In Vivo EPR and Related Studies, Hanover, NH, September 13-18, 1998.
- “In vivo spin trapping of OH and SO₃ radicals in intact animal with DEPMPO: a comparison with DMPO”, 5th Annual Meeting of the Oxygen Society, Washington DC, November 19-23, 1998.
- 1999 “Detection of free radicals and reactive paramagnetic species by in vivo EPR”, National Institute for Occupational Safety and Health, Morgantown, WV, December 9, 1999.
- “Challenges and opportunities of trapping and detecting free radicals in vivo”, 2nd Asian-Pacific EPR/ESR Symposium, Hangzhou, China, October 31 – November 4, 1999.
- “Comparative kinetic study on the stability of spin adducts in vivo and in vitro”, 6th annual meeting of the Oxygen Society, New Orleans, LA, November 18-22, 1999.
- “Role of free radicals and reactive intermediates in the toxicity of chromium”, Lovelace Respiratory Research Institute, Albuquerque, NM, November, 29, 1999.
- 2000 “In vivo reduction of chromium and related free radical generation”, Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV, September 10-12, 2000.

- 2001 “Free radicals in chemistry, biology, and medicine”, and “Mechanism of chromium toxicity and carcinogenesis”, lectures given as a Visiting Professor at Lanzhou University, Lanzhou, China, June, 2001.
- “Temporal and spatial profile of free radical generation during cerebral ischemia and reperfusion”, EPR Viable Systems 9th International Meeting, Dartmouth Medical School, Hanover, New Hampshire, September 8-14, 2001.
- 2002 “Application of 4-hydroxybenzoic acid as a trapping agent to study hydroxyl radical generation during cerebral ischemia and reperfusion”, 3rd International Conference on Oxygen/Nitrogen Radicals: Cell Injury and Disease, Morgantown, WV, June 1-5, 2002.
- “EPR studies on brain injury”, Neurotrauma Imaging 2002 Symposium, Albuquerque, NM, June 14-15, 2002.
- “Study of free radicals in biological system by EPR”, Institute of Chemistry, Chinese Academy of Sciences, Beijing, July 8, 2002.
- “Oxidative stress during cerebral ischemia and reperfusion”, Institute of Biophysics, Chinese Academy of Sciences, Beijing, July 10, 2002.
- “Free Radical Generation and DNA Damage by Arsenite in Keratinocytes”, Annual Meeting of Mountain West/Southern California Chapters, Society of Toxicology, Las Vegas, NV, September 26-27, 2002.
- 2003 “Is more oxygen good or bad for you after stroke?”, Dartmouth Medical School, Hanover, NH, August 21, 2003.
- “Trapping free radicals with nitrene and nitroso compounds in biological systems”, Department of Chemistry, University of New Mexico, February 28, 2003.
- “Interstitial pO₂ in Ischemic Penumbra and Core are Differentially Affected Following Transient Focal Cerebral Ischemia in Rats”. American Heart Association Research Symposium, Orlando, Florida, November 8, 2003.
- “Tissue oxygenation and oxidative stress during cerebral ischemia and reperfusion”, The Second Military Medical University, Shanghai, December 22, 2003.
- “EPR studies of cerebral ischemia and reperfusion”, Institute of Chemistry, Chinese Academy of Sciences, Beijing, December 29, 2003.
- 2004 “Free radical generation and DNA damage by arsenite in keratinocytes”, 3rd Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, National Institute for Occupational Safety and Health, Morgantown, WV, September 12-15, 2004. (Also served as session chair).

“Application of in vivo EPR in brain research: monitoring tissue oxygenation, blood flow, and oxidative stress”, International Workshop on In Vivo EPR, Dartmouth College, Hanover, NH, September 19-23, 2004. (Also served as session chair).

“Normobaric hyperoxia treatment raises penumbral interstitial pO₂ and decreases oxidative stress in a rat stroke model”, Society for Free Radical Biology and Medicine 11th Annual Meeting, St. Thomas, Virgin Islands, November 17-21, 2004.

“Probing tissue oxygenation and oxidative stress in the ischemic brain”, School of Pharmacy, University of Maryland, Baltimore, Maryland, December 8, 2004.

2005 “Oxidative stress in arsenic-induced skin cancer”, Nelson Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY, April 29, 2005.

“Normobaric hyperoxia therapy exerts its neuroprotective effect through an increase in tissue pO₂ and a decrease in free radical generation, caspases and MMP expression in the ischemic penumbra”, XXIInd International Symposium on Cerebral Blood Flow, Metabolism, and Function, Amsterdam, Netherlands, June 7-11, 2005.

“Chemical approaches to study tissue oxygenation, oxidative stress, and cerebral injury in the ischemic brain”, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, June 22, 2005.

“Chemical approaches to study tissue oxygenation, oxidative stress, and cerebral injury in the ischemic brain”, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, June 23, 2005.

“Design of EPR imaging agents to probe tissue oxygenation and oxidative stress in the ischemic brain during stroke”, School of Pharmacy, Eastern China University of Science and Technology, Shanghai, China, June 25, 2005.

“Tissue oxygenation, oxidative stress, and cerebral injury in the ischemic brain”, The Third International Symposium on Natural Antioxidants-Molecular Mechanisms and Health Effects (ISNA), Shanghai, China, June 24-29, 2005.

“Development of in vivo electron paramagnetic resonance imaging for mapping infarction area and oxygen distribution in ischemic brain”, Society For Neuroscience 35th Annual meeting, Washington, November 12-16, 2005.

2006 “Tissue oxygenation, oxidative stress, and cerebral injury during cerebral ischemia and reperfusion”, Auckland Symposium for Translational Neurosciences, Auckland, New Zealand, March 15-17, 2006 (also served as a session chair).

“Generation of reactive oxygen species in the mechanism of polyaromatic hydrocarbons-induced carcinogenesis”, 1st Shanghai Symposium on Tobacco and Health, Jun 8-9, 2006.

“The role of oxidative stress and tissue oxygenation in brain injury during cerebral ischemia and reperfusion”, Chinese University of Hong Kong, Hong Kong, July 5, 2006.

“Grantsmanship: Grant Writing Basics”, Hong Kong University, Hong Kong, July 6, 2006.

“Arsenic inhibits the activity of PARP-1 and synergistically increases UV-induced DNA damage in human keratinocytes”, 4th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, National Institute for Occupational Safety and Health, Morgantown, WV, September 24-27, 2006. (Also served as a session chair).

2007 “In Vivo Electron Paramagnetic Resonance (EPR) Imaging”, Society of Toxicology annual meeting, Charlotte, North Carolina, March 25-29, 2007.

“Imaging free radicals and molecular oxygen by electron paramagnetic resonance (EPR)”, Western IDeA States’ Symposium on Evolutionary Medicine, Albuquerque, New Mexico, March 14-16, 2007. (Also served as the organizer for the Workshop on Imaging in Biological Sciences).

“Arsenic inhibits the activity of PARP-1 and synergistically increases UV-induced DNA damage in human keratinocytes”, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, March 30, 2007.

“Tissue oxygenation, oxidative stress, and cerebral injury during cerebral ischemia and reperfusion”, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma, May 3rd, 2007.

“Tissue oxygenation, oxidative stress, and cerebral injury during cerebral ischemia and reperfusion”, Kagawa Medical University, Takamatsu, Japan, May 18, 2007.

“Normobaric hyperoxia protects BBB opening by inhibiting MMP-mediated degradation of tight junction proteins in a rat MCAO model”, 23rd International Symposium on Cerebral Blood Flow, Metabolism, and Function, Osaka, Japan, May 22, 2007.

“Normobaric hyperoxia delays and attenuates early nitric oxide production in focal cerebral ischemic rats”, 23rd International Symposium on Cerebral Blood Flow, Metabolism, and Function, Osaka, Japan, May 24, 2007.

“Tissue oxygenation, oxidative stress, and cerebral injury during cerebral ischemia and reperfusion”, University of Hong Kong School of Medicine, Hong Kong, May 28, 2007.

“Grantsmanship: Grant Writing Basics and Common Errors”, Hong Kong University Faculty of Medicine, Hong Kong, July 18, 2007.

“The role of tissue oxygenation and free radical generation in brain injury”, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, July 23, 2007.

- “Oxidative stress and tissue oxygenation in brain injury and their regulation by hyperoxia treatment”, University of Pittsburgh School of Medicine, October 18, 2007.
- 2008 “Hyperoxia treatment in ischemic brain injury”, Brain and Behavior Institute Symposium, University of New Mexico, Albuquerque, New Mexico, February 1, 2008.
- "Inhibition of DNA damage repair as a mechanism of arsenic carcinogenesis", University of Kentucky, Lexington, Kentucky, February 25, 2008.
- “Oxidative stress and tissue oxygenation in brain injury and neuroprotection”, Xi’An Jiao Tong University, Xi’An, China, July 14, 2008.
- “Oxygen-based therapy in ischemic stroke: a potential opportunity for clinical application?” Xuan Wu Hospital, Capital Medical University, Beijing, China, July 18, 2008.
- “Oxygen-based therapy in ischemic stroke: a potential opportunity for clinical application?” Rui Jin Hospital, Shanghai Jiao Tong University, Shanghai, China, July 23, 2008.
- “How to write a good RGC grant application: an analysis of common mistakes”, Hong Kong University Faculty of Medicine, Hong Kong, September 4, 2008.
- “Inhibition of DNA damage repair as a mechanism of arsenic carcinogenesis”, 5th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, National Institute for Occupational Safety and Health, Morgantown, WV, September 14-17, 2008. (Also served as a session chair).
- “NADPH oxidase and oxidative stress in cerebral ischemia and reperfusion”, The 14th Biennial Meeting of the Society for Free Radical Research International, Beijing, China, October 18-22, 2008.
- 2009 “Inhibition of DNA Damage Repair as a Mechanism of Arsenic Carcinogenesis”, Linus Pauling Institute, Oregon State University, Corvallis, Oregon, January 22, 2009.
- “Normobaric hyperoxia treatment protects ischemic brain: what is the mechanism?”, Robert S. Dow Neurobiology Laboratories, Legacy Clinical Research Center, Portland, Oregon, January 23, 2009.
- “Writing a successful RGC grant application: Dos and Don’ts”, University of Hong Kong, Faculty of Medicine, Hong Kong, July 6, 2009.
- “Combinatory therapy with hyperoxia in stroke treatment”, Clinical Neuroscience Grand Rounds, University of New Mexico Hospital, Albuquerque, September 25, 2009.
- “Inhibition of DNA Damage Repair as a Mechanism of Arsenic Carcinogenesis”, Wuhan International Conference on the Environment, Wuhan, China, October 17, 2009.

“Normobaric hyperoxia protects the blood brain barrier via inhibiting NADPH oxidase in focal cerebral ischemia”, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, October 28, 2009.

2010 “Normobaric Hyperoxia (NBO) treatment reduces tPA-associated neurovascular complications in ischemic stroke”, 3rd International Conference on Intracerebral Hemorrhage, Rancho Mirage, California, March 7-9, 2010.

“EPR-guided oxygen therapy in ischemic stroke”, 14th International Conference on In Vivo EPR Spectroscopy and Imaging, San Juan, Puerto Rico, May 2-6, 2010.

“Writing successful grants: analysis of unsuccessful applications”, University of Hong Kong, Faculty of Medicine, Hong Kong, July 19, 2010.

“How to write a publishable peer-reviewed manuscript”, XiAn Jiao Tong University, XiAn, July 22, 2010.

“PARP-1 inhibition and arsenic carcinogenesis”, 28th Annual Mountain West Society of Toxicology Meeting, Tucson, AZ, September 9-10, 2010.

“Cerebral tissue oxygen level: its role and function in ischemic brain injury and protection”, The First International Symposium on Brain Function and Disorders, Beijing, China, October 24-27, 2010.

“Cerebral tissue oxygen level: role and function in ischemic brain injury and protection”, TianTan Hospital, Beijing Capital Medical University, Beijing, China, October 29, 2010.

“Molecular mechanism of arsenic carcinogenesis”, Institute of Life Sciences, XiAn Jiao Tong University, XiAn, Nov 3, 2010.

“Selectivity of arsenite interaction with zinc fingers of DNA repair proteins”, 6th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Lexington, Kentucky, November 14-17, 2010.

2011 “Inhibition of DNA repair protein PARP-1 and arsenic carcinogenesis”, Indiana University School of Medicine, Indianapolis, Indiana, February 15, 2011.

“Inhibition of DNA repair as a mechanism of arsenic carcinogenesis”, University of California at Riverside, Riverside, California, April 6, 2011.

“Monitoring pO₂ in murine tumor after irradiation by in vivo electron paramagnetic resonance”, The first global Chinese Congress of Radiation Research, XiAn, China, April 24-27, 2011.

“Inhibition of DNA repair as a mechanism of arsenic carcinogenesis”, Michigan State University, Lansing, Michigan, May 18, 2011.

“Inhibition of DNA damage repair as a mechanism of arsenic skin carcinogenesis”, 22nd World Congress of Dermatology, Seoul, Korea, May 24-29, 2011.

“Arsenic carcinogenesis: role of DNA repair inhibition”, Department of Environmental Medicine, New York University School of Medicine, Tuxedo, New York, July 15, 2011.

“Keep your fingers away from arsenic: Carcinogenic significance of arsenic interaction with zinc finger proteins”, College of Pharmacy, University of Arizona, Tucson, Arizona, October 10, 2011.

“Normobaric Hyperoxia (NBO) extends tPA therapeutic time window in rat stroke model”, Fifth Chongqing International Neuroscience Symposium, Chongqing, China, Oct 28, 2011.

“Oxidative Stress in Cerebral Ischemia and Potential Neuroprotection with Chinese Medicines”, 1st Symposium on Chinese Medicine in Neurological Diseases, Beijing, China, Oct 30, 2011.

“NADPH Oxidase and Cerebrovascular Injury During Ischemic Stroke”, 17th International Biophysics Congress, Beijing, China, Oct 31, 2011.

“NADPH Oxidase and Oxidative Stress in Ischemic Stroke”, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, Nov 4, 2011.

“DNA repair inhibition and arsenic carcinogenesis”, University of Southern Maine, Portland, Maine, Dec 8, 2011.

2012 “Normobaric hyperoxia can protect ischemia-induced brain injury”, China Stroke Conference 2012, Beijing, May 4, 2012.

“Mechanism of arsenic carcinogenesis: role of DNA repair inhibition”, Center for Eco-environmental Sciences, Chinese Academy of Sciences, Beijing, China, July 31, 2012.

“NADPH Oxidase, oxidative stress, and ischemic brain injury”, 1st International Chinese Symposium on Free Radical Research, Lanzhou, China, August 8, 2012.

“Cerebral tissue oxygen level: Role and function in ischemic brain injury and protection”, Gordon Research Conference on Brain Energy Metabolism & Blood Flow, Colby College, Maine, August 15, 2012.

“DNA repair inhibition and arsenic carcinogenesis”, School of Pharmacy, West Virginia University, Morgantown, West Virginia, Oct 4, 2012.

“NADPH Oxidase and Cerebrovascular Injury During Ischemic Stroke”, Neuroscience Seminar Series, University of New Mexico School of Medicine, Albuquerque, New Mexico, November 15, 2012.

- 2013 “Oxidative stress and DNA repair inhibition in arsenic carcinogenesis”, College of Nanoscale Science and Engineering, State University of New York at Albany, Albany, New York, March 1, 2013.
- “Assessing cerebral tissue oxygenation alteration in neurological disorders by EPR”, 41st Annual ISOTT Conference and EPR 2013 Conference, Hanover, New Hampshire, June 25, 2013.
- “Grantsmanship: What makes a successful grant application successful?”, Faculty of Medicine, University of Hong Kong, Hong Kong, August 1, 2013.
- “DNA repair inhibition and arsenic carcinogenesis”, Faculty of Medicine, University of Hong Kong, Hong Kong, August 5, 2013.
- “Synergism between zinc and oxidative stress in ischemic brain injury”, Xuan Wu Hospital, Capital Medical University, Beijing, Oct 29, 2013.
- 2014 “Synergism between zinc and oxidative stress in ischemic brain injury”, Stanford University School of Medicine, Stanford, California, February 21, 2014.
- “Inhibition of DNA repair as a mechanism of arsenic carcinogenesis and co-carcinogenesis”, Society of Toxicology annual meeting, Phoenix, Arizona, March 26, 2014.
- “Tissue oxygenation and oxidative stress in brain injury”, University of Kentucky, Lexington, Kentucky, April 17, 2014.
- “Herbal medicines: a potential therapy for stroke”, Universidad Autónoma del Estado de Morelos, Cuernavaca, Morelos, Mexico, May 5, 2014.
- “Normobaric hyperoxia slows down BBB disruption and expands the time window of tPA treatment in focal cerebral ischemic rats”, The 16th International Conference on Brain Edema and Cellular Injury, Huntington Beach, California, September 27-30, 2014.
- “Inhibition of DNA repair as a mechanism of arsenic carcinogenesis and co-carcinogenesis”, East China University of Science and Technology, Shanghai, China, October 16, 2014.
- “Selective oxidative damage to protein through metal binding”, The 2nd International Chinese Symposium on Free Radical Research, Hong Kong, China, November 15-16, 2014.
- “Mechanism of arsenic carcinogenesis and co-carcinogenesis”, Dailian University, Dalian, China, November 21, 2014.
- 2015 “Ischemia-induced neurovascular injury: biomarker and possible intervention”, Clinical Neuroscience Grand Rounds, University of New Mexico Hospital, Albuquerque, January 23, 2015.

“Selective sensitization of zinc finger protein oxidation by ROS through metal binding”, Zhejiang University, Hangzhou, China, May 12, 2015.

“Selective oxidative damage to zinc finger proteins through arsenic binding”, 5th Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Ontario, Canada, May 19-23, 2015.

“Interruption of zinc finger proteins and arsenic carcinogenesis”, NIEHS Center Seminar Series, Columbia University Mailman School of Public Health, New York, New York, August 3, 2015.

“Cerebral Tissue Oxygen Level: Role and function in ischemic brain injury and protection”, Brain and Mind Research Institute, Weill Cornell Medical College, New York, New York, August 4, 2015.

“Oxidative modification of zinc finger proteins and arsenic carcinogenesis”, School of Public Health, Fourth Military Medical University, Xi'an, China, September 14, 2015.

“Interruption of zinc finger proteins and arsenic carcinogenesis”, School of Public Health, China Medical University, Shenyang, China, September 17, 2015.

“Ischemia-induced BBB injury: biomarker and possible intervention”, Chongqing Neurosurgery Conference, Chongqing, China, October 24, 2015.

“Selective zinc finger protein oxidation and arsenic carcinogenesis”, Department of Chemistry, Peking University, Beijing, China, October 28, 2015.

“Interruption of zinc finger proteins and arsenic carcinogenesis”, Department of Pharmacology, Toxicology, & Therapeutics, University of Kansas Medical Center, Kansas City, Missouri, November 10, 2015.

“Interruption of zinc finger proteins and arsenic carcinogenesis”, Department of Pharmacology and Toxicology, University of Kansas School of Pharmacy, Lawrence, Kansas, November 11, 2015.

2016 “Zinc in neuronal and vascular injury during ischemic stroke”, Faculty of Medicine, University of Hong Kong, Hong Kong, China, April 17, 2016.

“Selective zinc finger protein oxidation and arsenic carcinogenesis”, 13th International Symposium on Recent Advances in Environmental Health Research, Jackson, Mississippi, September 11-14, 2016.

“Zinc finger protein as a sensitive target for arsenic interaction”, 9th Conference on Metal Toxicity and Carcinogenesis, Lexington, Kentucky, October 16-19, 2016.

- “Oxidative and nitrosative modification of DNA repair proteins and arsenic co-carcinogenesis”, Comprehensive Cancer Center, University of California at Davis, Sacramento, California, November 10, 2016.
- 2017 “Arsenic: Carcinogen, chemoprevention, & therapeutics”, College of Pharmacy, University of Arizona, February 20, 2017.
- “Role of zinc in brain physiology and neurological disorders”, Shenzhen 2nd People's Hospital, Shenzhen University 1st Affiliated Hospital, Shenzhen, China, May 24, 2017.
- “Measurement of cerebral oxygen in neurological disorders”, International Conference on Electron Paramagnetic Resonance Spectroscopy and Imaging of Biological Systems (EPR-2017), Morgantown, West Virginia, July 16–July 22, 2017.
- “Metal-mediated selective protein oxidation: How arsenic targets DNA repair proteins”, 8th Biennial Meeting of Society for Free Radical Research-Asia, XiAn, China, September 8-11, 2017.
- “Ischemia-induced neurovascular injury: biomarker and possible intervention”, Kagawa University School of Medicine, Takamatsu, Kagawa, Japan, September 19, 2017.
- 2018 “Ischemia-Induced Neurovascular Injury: Biomarker and Possible Intervention”, Texas Tech University Health Sciences Center at El Paso, El Paso, Texas, January 31, 2018.
- “Interruption of zinc finger proteins and arsenic carcinogenesis”, University of Maryland School of Pharmacy, Baltimore, Maryland, April 11, 2018.
- “Application of EPR from biology to medicine: challenges and opportunities”, Xiangshan Conference on EPR application in biology and medicine, Beijing, China, May 3-4, 2018.
- “Synergistic interaction between zinc and ROS amplifies ischemic brain injury”, 4th Global Chinese Symposium & The 8th Symposium for Cross-straits, Hong Kong and Macao on Free Radical Biology and Medicine, Macao, China, September 21-24, 2018.
- “Cerebral tissue oxygenation in ischemia/reperfusion: challenges and intervention opportunities”, Peking University Health Sciences Center, Beijing, China, September 27, 2018.
- “Synergistic interaction between zinc and ROS amplifies ischemic brain injury”, Dalian Medical University, Dalian, China, November 22, 2018.
- “Reducing brain injury and promoting recovery in stroke: Challenges and opportunities for Chinese medicine”, The 11th Pong Ding Yuen International Symposium on Traditional Chinese Medicine, Hong Kong, China, November 25, 2018.
- “Stroke research: Past, Present, and Future”, Shenzhen 2nd People's Hospital, Shenzhen University, Shenzhen, China, November 26, 2018.

- 2019 “Interruption of zinc finger proteins and arsenic carcinogenesis”, University of Colorado School of Pharmacy and Pharmaceutical Sciences, Aurora, Colorado, January 17, 2019.
- “Interruption of zinc finger protein binding with DNA by arsenic”, 2019 Mesilla Chemistry Workshop on Protein-Nucleic Acid Interactions, Mesilla, New Mexico, February 9 - 12, 2019.
- “Selective interaction of arsenic with zinc finger proteins: mechanism and health effects”, 7th Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Ontario, Canada, May 21-25, 2019.
- "Selective Interaction of Arsenic with Zinc Finger Proteins: mechanism and health effects", Karlsruhe Institute of Technology, Germany, July 16, 2019.
- “Blood occludin level as a potential biomarker for early blood brain barrier damage”, European Stroke 2019 Conference, Stockholms, Sweden, July 29-31, 2019.
- “DNA repair, mutation signature, and arsenic exposure: a whole genome sequencing approach”, 23rd Heidelberger Symposium on Cancer Research, Stintino, Sardinia, Italy, September 23-28, 2019.
- “Zinc accumulation in mitochondria promotes blood–brain barrier disruption after cerebral ischemia”, Society for Neuroscience Annual Conference, Chicago, Illinois, October 19-23, 2019.
- “Translational stroke research: from cells to animals to patients”, XuanWu Hospital, Beijing, China, November 6, 2019.
- “Application of EPR in biomedical research: opportunities and challenges”, 9th Chinese National EPR Conference, Wuhan, China, November 7-10, 2019.
- 2020 “Selective interaction of arsenic with zinc finger proteins: mechanism and health effects”, University of Louisville, Louisville, Kentucky, March 5, 2020.
- “Role of zinc in brain ischemic injury: Good, bad, ugly”, University of Louisville, Louisville, Kentucky, March 6, 2020.
- “Cerebral tissue oxygenation and blood brain barrier damage in ischemic stroke”, Stroke Webinar, Hong Kong Association for Integration of Chinese-Western Medicine, October 18, 2020.

Teaching Responsibilities

Fall, 1999

Pharm 731, Mechanisms of Drug Action II

Spring, 2000

Pharm 710, Mechanisms of Drug Action I

Pharm 732, Mechanisms of Drug Action III
Pharm 580, Biochemical and Molecular Toxicology
Pharm 741, Student-Centered, Problem Based Learning

Fall, 2000

Pharm 731, Mechanisms of Drug Action II
Pharm 580, Biochemical and Molecular Toxicology
Pharm 741, Student-Centered, Problem Based Learning

Spring, 2001

Pharm 710, Mechanisms of Drug Action I
Pharm 732, Mechanisms of Drug Action III
Pharm 758, PharmD Research Project (students: Jennifer Lopez, Jennifer Fanelli)

Fall, 2001

Pharm 731, Mechanisms of Drug Action II
Pharm 580, Biochemical and Molecular Toxicology
Pharm 741, Student-Centered, Problem Based Learning

Spring, 2002

Pharm 710, Mechanisms of Drug Action I
Pharm 732, Mechanisms of Drug Action III
Pharm 741, Student-Centered, Problem Based Learning

Fall, 2002

Pharm 731, Mechanisms of Drug Action II
Pharm 580, Biochemical and Molecular Toxicology
Pharm 741, Student-Centered, Problem Based Learning

Spring, 2003

Pharm 710, Mechanisms of Drug Action I
Pharm 732, Mechanisms of Drug Action III
Pharm 741, Student-Centered, Problem Based Learning
Pharm 598, Reactive Oxygen Species and Toxicology (Instructor of record)

Fall, 2003

Pharm 731, Mechanisms of Drug Action II
Pharm 580, Biochemical and Molecular Toxicology
Pharm 741, Student-Centered, Problem Based Learning

Spring, 2004

Pharm 710, Mechanisms of Drug Action I
Pharm 732, Mechanisms of Drug Action III
Pharm 741, Student-Centered, Problem Based Learning

Fall, 2004

Pharm 731, Mechanisms of Drug Action II

Pharm 580, Biochemical and Molecular Toxicology
Pharm 741, Student-Centered, Problem Based Learning

Spring, 2005

Pharm 710, Mechanisms of Drug Action I
Pharm 732, Mechanisms of Drug Action III

Fall, 2005

Pharm 731, Mechanisms of Drug Action II
Pharm 580, Biochemical and Molecular Toxicology

Spring, 2006

Pharm 710, Mechanisms of Drug Action I
Pharm 732, Mechanisms of Drug Action III

Fall, 2006

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Pharm 580, Biochemical and Molecular Toxicology

Spring, 2007

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Pharm 732, Mechanisms of Drug Action III

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Pharm 732, Mechanisms of Drug Action III

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Pharm 580, Biochemical and Molecular Toxicology

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Fall, 2011

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Spring, 2012

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Fall, 2012

Pharm 580, Biochemical and Molecular Toxicology

Fall, 2013

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Fall, 2014

Pharm 731, Mechanisms of Drug Action II

Spring, 2015

Pharm 732, Mechanisms of Drug Action III

Fall, 2015

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Spring, 2016

Pharm 732, Mechanisms of Drug Action III

Fall, 2016

Pharm 731, Mechanisms of Drug Action II

Spring, 2017

Pharm 732, Mechanisms of Drug Action III

Fall, 2017

Pharm 731, Mechanisms of Drug Action II