

Curriculum Vitae

July 17, 2009

Yong Woo Lee, Ph.D.

Laboratory of Vascular Biology, Department of Biomedical Sciences and Pathobiology (DBSP),
School of Biomedical Engineering and Sciences (SBES),
Virginia Polytechnic Institute and State University (Virginia Tech),
Room 337 ICTAS Building (MC-0298), Stanger Street, Blacksburg, VA 24061.
Phone: 540-231-8484, Fax: 540-231-9738, E-mail : ywlee@vt.edu
www.vascular.sbes.vt.edu, www.sbes.vt.edu/people/faculty/primary/ywlee.html
<http://www.vetmed.vt.edu/org/dbsp/faculty/ywlee.asp>,
<http://www.wfirm.org/AboutUs/Fac/Yong+Lee.htm>

Educational Background

- 1999-2001: *Postdoctoral Scholar (Advisor: Dr. Michal Toborek)*, Department of Surgery
University of Kentucky College of Medicine, Lexington, KY
- 1994-1997: *Ph.D. (Advisor: Dr. K.H. Yang)*, Department of Biological Sciences
Korea Advanced Institute of Science and Technology, Taejon, Korea (South)
- 1986-1988: *M.S. (Advisor: Dr. C.N. Joo)*, Department of Biochemistry
Yonsei University, Seoul, Korea (South)
- 1982-1986: *B.S.*, Department of Applied Biology and Chemistry
Seoul National University, Seoul, Korea (South)

Positions and Employment

- 2004-present: *Assistant Professor (Primary Faculty Member)*
School of Biomedical Engineering and Sciences
Virginia Tech-Wake Forest University, Blacksburg, VA
- 2004-present: *Assistant Professor*
Department of Biomedical Sciences and Pathobiology
Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA
- 2005-present: *Core Faculty Member*
Research and Graduate Program in Inflammation
Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA

- 2005-present: *Core Faculty Member*
National Science Foundation (NSF) MILES-IGERT Program
Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA
- 2006-present: *Affiliate Faculty Member*
Institute for Critical Technology and Applied Science (ICTAS)
Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA
- 2008-present: *Adjunct Assistant Professor*
Institute for Regenerative Medicine
Wake Forest University School of Medicine, Winston-Salem, NC
- 2009-present: *Graduate Faculty Appointment*
Oklahoma Center for Neuroscience
University of Oklahoma Health Sciences Center, Oklahoma City, OK
- 2003-2004: *Assistant Professor*
Joint Appointment in the Graduate Center for Nutritional Sciences
University of Kentucky Medical Center, Lexington, KY
- 2002-2004: *Assistant Professor.*
Department of Surgery/Division of Neurosurgery
University of Kentucky College of Medicine, Lexington, KY
- 2001-2002: *Research Associate.*
Department of Surgery/Division of Neurosurgery
University of Kentucky College of Medicine, Lexington, KY
- 1988-1998: *Senior Investigator.*
Department of Biological Sciences
Lotte Group R&D Center, Seoul, Korea (South)

Professional Memberships

- 2005-present: Regular member of American Society for Biochemistry and Molecular Biology
- 2006-present: Regular member of Inflammation Research Association
- 2009-present: Regular member of Biomedical Engineering Society
- 2006-2008: Regular member of Society of Toxicology

Honors and Awards

Travel Award for Junior Faculty, American Aging Association, 2004

International Travel Supplemental Grant Award, Virginia Tech Foundation, 2006

GSA Research Symposium Poster Award, Virginia Tech, 2007

NSF CAREER Workshop Scholarships, Association of Environmental Engineering and Science Professors (AEESP), 2007

The Virginia Governor's School Appreciation Award, Commonwealth of Virginia, 2007

International Travel Supplemental Grant Award, Virginia Tech Foundation, 2007

Excellent Presentation Award, Korean Nutrition Society International Conference, 2007

International Travel Supplemental Grant Award, Virginia Tech Foundation, 2009

Teaching Experiences

1987: *Teaching Assistant.*

Department of Biochemistry, Yonsei University, Seoul, South Korea

2000: *Mentor.*

Ph.D. Student Exchange Program, University of Kentucky, Lexington, KY

2005-present:

Courses Taught at Virginia Tech

<u>Course</u>	<u>Number</u>	<u>Credits</u>
UR: Shear Stress Sensor (Summer 2005)	ME 4994	3 Credits - Undergraduate
Mammalian Physiology (Fall 2005)	BMES 5004	4 Credits - Graduate
Topics in Immunology (Fall 2005)	VMS 6704	3 Credits - Graduate
Molecular Chemistry at the Biology Interface Laboratory (Cell Culturing; Fall 2005)	FST/CHEM/BMVS 5884	2 Credits – Graduate
UR: Shear Stress Sensor (Fall 2005)	ME 4994	3 Credits - Undergraduate
Research and Dissertation (Fall 2005)	BMES 7994	10 Credits – Graduate
Molecular Biology of Human Disease (Spring 2006)	BMES5984	3 Credits – Graduate
Introduction to Medical Physiology (Spring 2006)	BMVS4064	3 Credits – Undergraduate
UR: Biological Shear Stress Sensor (Spring 2006)	ME 4994	3 Credits – Undergraduate
Research and Dissertation (Spring 2006)	BMES 7994	12 Credits – Graduate

SBES Lab Course (Cell Culture and Molecular Biology; Summer 2006)		Graduate
Mammalian Physiology (Fall 2006)	BMES 5004	4 Credits – Graduate
Seminar in Molecular/Cellular Medicine (Fall 2006)	BIOL5984	1 Credit – Graduate
Research and Dissertation (Fall 2006)	BMES 7994	12 Credits – Graduate
UR: Cellular Mechanotransduction (Fall 2006)	UH 4994	3 Credits – Undergraduate
Engineering Design and Projects (Fall 2006 & Spring 2007)	ME-4014	Undergraduate
Molecular Chemistry at the Biology Interface Laboratory (Cell Culturing; Spring 2007)		
	FST/CHEM/BMVS 5884	2 Credits – Graduate
Introduction to Medical Physiology (Spring 2007)	BMVS4064	3 Credits – Undergraduate
Biomedical Engineering & Human Disease (Spring 2007)	BMES5984	3 Credits – Graduate
UR: Ischemia and Reperfusion (Spring 2007)	UH4994	3 Credits – Undergraduate
Clinical Rotation (Spring 2007)	BMES 6064	2 Credits – Graduate
Research and Dissertation (Spring 2007)	BMES 7994	4 Credits – Graduate
Research and Thesis (Spring 2007)	BMES 5994	9 Credits – Graduate
Mammalian Physiology (Fall 2007)	BMES 5004	4 Credits – Graduate
Research and Dissertation (Fall 2007)	BMES 7994	18 Credits – Graduate
UR: Inflammatory Disease (Fall 2007)	ALS 4994	3 Credits – Undergraduate
UR: Biomedical Applications of Nanotechnology (Fall 2007)		
	ESM 4994	3 Credits – Undergraduate
Molecular Chemistry at the Biology Interface Laboratory (Cell Culturing; Spring 2008)		
	FST/CHEM/BMVS 5884	2 Credits – Graduate
Introduction to Medical Physiology (Spring 2008)	BMVS4064	3 Credits – Undergraduate
Biomedical Engineering & Human Disease (Spring 2008)	BMES5024	3 Credits – Graduate
Research and Dissertation (Spring 2008)	BMES 7994	24 Credits – Graduate
Introduction to Medical Physiology (Fall 2008)	BMVS4064	3 Credits – Undergraduate
Mammalian Physiology (Fall 2008)	BMES 5004	4 Credits – Graduate
Clinical Rotation (Spring 2008)	BMES 6064	2 Credits – Graduate
UR: Inflammatory Disease (Fall 2008)	BIOL 4994	3 Credits – Undergraduate
Multicultural Challenge (Fall 2008)	ENGR 1034 & 1054	2 Credits – Undergraduate
Research and Thesis (Fall 2008)	BMES 5994	8 Credits – Graduate

Research and Dissertation (Fall 2008)	BMES 7994	16 Credits – Graduate
Biomedical Engineering & Human Disease (Spring 2009)		
	BMES5024/BMVS5224	3 Credits – Graduate
Clinical Rotation (Spring 2009)	BMES 6064	2 Credits – Graduate
UR: NanoMedicine (Spring 2009)	BIOL 4994	3 Credits – Undergraduate
Research and Dissertation (Spring 2009)	BMES 7994	12 Credits – Graduate
Research and Dissertation (Summer I 2009)	BMES 7994	3 Credits – Graduate
Research and Dissertation (Summer II 2009)	BMES 7994	3 Credits – Graduate

Academic and Research Advising Responsibilities:

Primary Academic and Research Advisor

Previous Students (Graduated):

Won Hee Lee, M.S. in May 2007

M.S. thesis title: Biomedical research application of a novel double-layer parallel-plate flow chamber

School of Biomedical Engineering and Sciences (SBES), Virginia Tech

Current position: Ph.D. student, SBES, Virginia Tech

Anjali A. Hirani, M.S. in June 2009

M.S. thesis title: Targeting brain inflammation with bioconjugated nanoparticles

School of Biomedical Engineering and Sciences (SBES), Virginia Tech

Current position: Ph.D. student, SBES, Virginia Tech

Current Students:

Won Hee Lee, M.S.

Ph.D. student, School of Biomedical Engineering and Sciences (SBES), Virginia Tech

May 2007 - present

Paul H. Kim, B.S.

Ph.D. student, Department of Biomedical Sciences and Pathobiology, Virginia-Maryland Regional
College of Veterinary Medicine, Virginia Tech

August 2008 - present

Anjali A. Hirani, M.S.

Ph.D. student, School of Biomedical Engineering and Sciences (SBES), Virginia Tech

June 2009 - present

Hyung Joon Cho, M.S.

Ph.D. student, School of Biomedical Engineering and Sciences (SBES), Virginia Tech

July 2009 - present

Research Mentor

Kelley King-Pospisil, M.S., Senior Lab Technician

Department of Surgery, University of Kentucky Medical Center

January 2003 - September 2004

KwangWon Son, M.S., Senior Lab Technician

Department of Surgery, University of Kentucky Medical Center

January 2003 - September 2004

Holly Heatwole, B.S., DVM candidate Class of 2008

Virginia-Maryland Regional College of Veterinary Medicine (VMRCVM), Virginia Tech

February 2005 - June 2005

Renee Barber, B.S., DVM candidate Class of 2007

Virginia-Maryland Regional College of Veterinary Medicine (VMRCVM), Virginia Tech

April 2005 - June 2005

Luke Harris, Undergraduate student

Department of Biological Sciences, Virginia Tech

March 2005 - June 2005

Kiwon Park, B.S., Master student

Department of Engineering Science and Mechanics, Virginia Tech

February 2005 - June 2005

[Current Position: Ph.D. student, Department of Mechanical & Industrial Engineering, University of Illinois at Urbana-Champaign]

Sungkwon Kang, Undergraduate student

Department of Mechanical Engineering, Virginia Tech

May 2005 - May 2007

[Current Position: Ph.D. student, Department of Biomedical Engineering, Cornell University]

Helene Seita, Undergraduate student

Department of Biological Systems Engineering, Virginia Tech

July 2006 - September 2006

Byron Cheon, Rachael Dunn, Clarissa Ham, Mareeha Niaz: High school students

Independent Group Project, 2006 Virginia Governor's School

July 3, 2006 - July 29, 2006

Elizabeth Goff, Megan Nelson, Aruna Nagarajan, Ah-Ram Kim: High school students

Independent Group Project, 2007 Virginia Governor's School

July 2, 2007 - July 28, 2007

Justin Nam, B.S., Research Assistant

2007 Summer internship program, Virginia Tech

June 2007 - August 2007

[Current Position: Research Scientist, Mid-Atlantic Pathology Lab, Sterling, VA]

Shelly Hogan, B.S., Ph.D. student
2007 Summer internship program, Virginia Tech
June 2007 - August 2007

Paul H. Kim, Undergraduate student
Department of Biological Sciences, Virginia Tech
August 2007 - May 2008
[Current Position: Ph.D. student, Department of Biomedical Sciences and Pathobiology, Virginia-
Maryland Regional College of Veterinary Medicine]

Rachel Young, Undergraduate student
Department of Engineering Science and Mechanics, Virginia Tech
August 2007 - December 2007

Saemin Oh, Undergraduate student
Department of Biological Sciences, Virginia Tech
August 2008 - May 2009

Mee-Jee Kim, Undergraduate student
Department of Biological Sciences, Virginia Tech
February 2009 - present

Graduate Student Advisory Committee

Completed:

- 1) Ali Etebari, Ph.D. student 2004-April 2006, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Pavlos P. Vlachos*)
- 2) Hetal Sarvaiya, M.S. student, 2005-April 2006, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Iuliana Lazar*)
- 3) Won Hee Lee, M.S. student, 2005-May 2007, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. YongWoo Lee*)

- 4) Xiaobo Guo, Ph.D. student, 2006-May 2007, Department of Biomedical Sciences and Pathobiology, Virginia-Maryland Regional College of Veterinary Medicine (*Advisor: Dr. Yasuhiro Suzuki*)
- 5) Abby Turpyn, Ph.D. student, 2005-September 2007, Department of Human Nutrition, Foods and Exercise, Virginia Tech (*Advisor: Dr. Janet Rankin*)
- 6) Hongwei Si, Ph.D. student, 2005-December 2007, Department of Human Nutrition, Food and Exercise, Virginia Tech (*Advisor: Dr. Dongmin Liu*)
- 7) Natalia V. Rivera, Ph.D. student, 2006-May 2007, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. R. Michael Buehrer*)
- 8) Jessica Fisher, M.S. student, 2007-February 2008, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. M. Nichole Rylander*)
- 9) Pinar Omur-Ozbek, Ph.D. student, 2006-September 2008, Department of Civil and Environmental Engineering, Virginia Tech (*Advisor: Dr. Andrea M. Dietrich*)
- 10) John Layman, Ph.D. student, 2005-November 2008, The Macromolecular Science and Engineering Program (MACR), Virginia Tech (*Advisor: Dr. Timothy Long*)
- 11) Katherine Dulaney Kavlock, Ph.D. student, 2005-March 2009, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Aaron Goldstein*)
- 12) Jenni Popp, Ph.D. student, 2005-March 2009, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Aaron Goldstein*)
- 13) Elizabeth Abbey, Ph.D. student, 2006-March 2009, Department of Human Nutrition, Foods and Exercise, Virginia Tech (*Advisor: Dr. Janet Rankin*)
- 14) Anjali Hirani, M.S. student, 2005-June 2009, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Yong Woo Lee*)

Current:

- 1) Amy Tanner, Ph.D. student, 2005-present, Department of Large Animal Clinical Sciences, Virginia-Maryland Regional College of Veterinary Medicine (*Advisor: Dr. Korinn Saker*)
- 2) Won Hee Lee, Ph.D. student, 2007-present, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Yong Woo Lee*)

- 3) Benjamin Lepene, Ph.D. student, 2005-present, Department of Large Animal Clinical Sciences, Virginia-Maryland Regional College of Veterinary Medicine (*Advisor: Dr. Craig Thatcher*)
- 4) Pergentino Balbuena, Ph.D. student, 2005-present, Department of Biomedical Sciences and Pathobiology, Virginia-Maryland Regional College of Veterinary Medicine (*Advisor: Dr. Marion Ehrich*)
- 5) Lindsay Sharp, Ph.D. student, 2006-present, Department of Chemical Engineering, Virginia Tech (*Advisor: Dr. Aaron Goldstein*)
- 6) Erika Borgerding, Ph.D. student, 2006-present, Department of Chemistry, Virginia Tech (*Advisor: Dr. Timothy Long*)
- 7) Shuping Dong, Ph.D. student, 2006-present, The Macromolecular Science and Engineering Program (MACR), Virginia Tech (*Advisor: Dr. Maren Roman*)
- 8) John Charonko, Ph.D. student, 2006-present, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Pavlos P. Vlachos*)
- 9) Lu Gan, Ph.D. student, 2006-present, Department of Biological Sciences, Virginia Tech (*Advisor: Dr. Liwu Li*)
- 10) Michael Surace, Ph.D. student, 2006-present, Department of Biological Sciences, Virginia Tech (*Advisor: Dr. Liwu Li*)
- 11) Lee Wright, Ph.D. student, 2007-present, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Joseph Freeman*)
- 12) Yeonhee Kim, Ph.D. student, 2007-present, Department of Chemical Engineering, Virginia Tech (*Advisor: Dr. Padma Rajagopalan*)
- 13) Paul Kim, Ph.D. student, 2008-present, Department of Biomedical Sciences and Pathobiology, Virginia-Maryland Regional College of Veterinary Medicine (*Advisor: Dr. Yong Woo Lee*)
- 14) Mana Tamami, Ph.D. student, 2007-present, Department of Chemistry, Virginia Tech (*Advisor: Dr. Timothy Long*)
- 15) Junie P. Warrington, Ph.D. student, 2009-present, Oklahoma Center for Neuroscience, Reynolds Oklahoma Center on Aging, University of Oklahoma Health Sciences Center (*Advisor: Dr. William Sonntag*)
- 16) Anjali Hirani, Ph.D. student, 2009-present, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Yong Woo Lee*)

Graduate Student Exam Committee

- 1) Katherine Dulaney, Ph.D. student, July 2005, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Aaron Goldstein*)
- 2) Jenni Popp, Ph.D. student, July 2006, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Drs. Aaron Goldstein and Brian Love*)
- 3) Doug Gabauer, Ph.D. student, July 2006, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Clay Gabler*)
- 4) Suzanne Nicewonder, Ph.D. student, July 2006, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Michael Madigan*)
- 5) Yvette Edmonds, Ph.D. student, August 2006, Preliminary Exam, Department of Biochemistry, Virginia Tech
- 6) Martin Tanaka, Ph.D. student, July 2007, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Kevin Granata*)
- 7) Mitchell Ladd, Ph.D. student, July 2008, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. James Yoo*)
- 8) Jill Rouse, Ph.D. student, July 2008, Qualifying Exam, School of Biomedical Engineering and Sciences, Virginia Tech-Wake Forest University (*Advisor: Dr. Mark Van Dyke*)

Organizing Graduate Student Seminar Series

- 09/2005-05/2006. Immunity and Inflammation Friday Forum
01/2007-05/2008. SBES Seminar - Cell/Tissue Engineering

Research Supports

Active

1. Award Program: Academic Research Enhancement Award (AREA, R15)

Sponsor: National Institutes of Health (NIH/NHLBI)

Role: Principal Investigator

Period of Project: 08/01/2007 - 07/31/2010

Project Title: Role of p38 MAPK in IL-4-induced IL-6 expression in vascular endothelium

2. Award Program: R01 Subcontract

Sponsor: National Institutes of Health (NIH/NINDS)

Role: Principal Investigator (PI: Dr. Sonntag, University of Oklahoma Health Sciences Center)

Project Period: 02/15/2007 - 1/31/2012

Project Title: Effects of radiation on brain microvasculature and cognition

3. Award Program: CBET – Biophotonics Program

Sponsor: National Science Foundation (NSF)

Role: Co-Principal Investigator (PI: Dr. Robinson, Virginia Tech)

Project Period: 05/01/2008 - 04/30/2011

Project Title: Ultra-efficient plasmonic nanoparticle markers for second harmonic imaging
microscopy

4. Award Program: Exploratory/Developmental Bioengineering Research Grants (EBRG) [R21]

Sponsor: National Institutes of Health (NIH/NIAMS)

Role: Co-Principal Investigator (PI: Dr. Goldstein, Virginia Tech)

Period of Project: 03/01/2008 - 02/28/2010

Project Title: Bone tissue engineering: effect of dynamic perfusion

5. Award Program: ICTAS Research Grant Program

Sponsor: The Institute for Critical Technology and Applied Science (ICTAS)

Role: Principal Investigator (PI: Dr. Roman, Virginia Tech)

Period of Project: 01/01/2007 - 12/31/2009

Project Title: Bioconjugated cellulose nanocrystals for immunotargeting

6. Award Program: CCCWFU/SBES Grants

Sponsor: Wake Forest University Comprehensive Cancer Center (CCCWFU)

Role: Co-Principal Investigator (PI: Dr. Saul, Wake Forest University)

Period of Project: 07/01/2008 - 12/31/2009

Project Title: EphrinA 1-Targeted Nanocarriers for Intracellular Co-Delivery of FdUMP[10] and Phospholipid Gemcitabine to Glioblastoma Cells via the EphA2 Receptor

7. Award Program: R01

Sponsor: National Institutes of Health (NIH/NIAID)

Role: Collaborator (PI: Dr. Yasuhiro Suzuki, University of Kentucky)

Project Period: 07/03/2008 - 06/30/2013

Project Title: IFN- γ production by microglia for prevention of toxoplasmic encephalitis

8. Award Program: R01

Sponsor: National Institutes of Health (NIH/NCI)

Role: Consultant (PI: Dr. Michael Robbins, Wake Forest University)

Project Period: 08/07/2006 - 7/31/2011

Project Title: RAS, inflammation and radiation-induced brain injury

9. Award Program: Integrative Graduate Education and Research Traineeship (IGERT)

Sponsor: National Science Foundation (NSF)

Role: Faculty Mentor (Student Name: Paul H. Kim)

Project Period: 08/10/2008 - 05/09/2010

Project Title: Cellular and molecular mechanisms of oxidative stress-induced human chronic diseases

10. Sponsor: The Institute for Critical Technology and Applied Science (ICTAS)

Role: Co-Principal Investigator (PI: Dr. Dietrich, Virginia Tech)

Period of Project: 07/01/2009 - 06/30/2012

Project Title: Water For Health ICTAS Center of Excellence

11. Award Program: DMR – Biomaterial Program

Sponsor: National Science Foundation (NSF)

Role: Co-Principal Investigator (PI: Dr. Roman, Virginia Tech)

Project Period: 08/01/2009 - 07/31/2012

Project Title: Chitosan-cellulose ionic complex for oral drug delivery

12. Award Program: R21

Sponsor: National Institutes of Health (NIH/NCI)

Role: Co-Principal Investigator (PI: Dr. Cong, Virginia Tech)

Project Period: 06/01/2009 - 05/31/2011

Project Title: *In vivo* tomographic imaging of fluorescence protein

13. Award Program: Biomedical Engineering Program

Sponsor: National Science Foundation (NSF)

Role: Co-Principal Investigator (PI: Dr. Davalos, Virginia Tech)

Project Period: 08/01/2009 - 07/31/2012

Project Title: Combinatorial brain cancer therapy through irreversible electroporation and carbon nanotubes

Completed

1. Award Program: ICTAS Research Grant Program

Sponsor: The Institute for Critical Technology and Applied Science (ICTAS)

Role: Co-Principal Investigator (PI: Dr. Robinson, Virginia Tech)

Period of Project: 11/01/2007 - 06/30/2009

Project Title: Nanoparticle markers for high-efficiency non-linear microscopy: Combining cancer imaging and treatment

2. Award Program: ICTAS Research Grant Program

Sponsor: The Institute for Critical Technology and Applied Science (ICTAS)

Role: Co-Principal Investigator (PI: Dr. Thatcher, Virginia Tech)

Period of Project: 01/01/2008 - 12/31/2008

Project Title: Evaluation of a nanoscale targeted antioxidant delivery system in an equine model for human asthma and pulmonary inflammation

3. Sponsor: POM Wonderful, LLC

Role: Co- Principal Investigator (PI: Dr. Korinn Saker at VMRCVM)

Project Period: 03/01/2006 - 6/30/2008

Project Title: Pomegranate fruit: A potential nutritional intervention therapy for breast cancer

4. Sponsor: The Institute for Public Health and Water Research (IPWR)

Role: Co- Principal Investigator (PI: Dr. Dietrich at Virginia Tech)

Project Period: 08/10/2006 - 08/31/2008

Project Title: The mechanism of metallic flavor from drinking water

5. Award Program: Seed Grant

Sponsor: Virginia Tech-Wake Forest University

Role: Principal Investigator

Period of project: 01/01/2006 - 06/30/2007

Project Title: Bioconjugation of nanocrystals for target drug delivery

6. Sponsor: Diabetes Action Research and Education Foundation

Role: Co-Investigator (PI: Dr. Dongmin Liu at Virginia Tech)

Project Period: 01/01/2006 - 12/31/2006

Project Title: Mechanism of soy isoflavone genistein in prevention of diabetic vascular complications

7. Award Program: New Initiative Grants

Sponsor: VMRCVM

Role: Principal Investigator

Period of project: 07/01/2005 - 06/30/2006

Project Title: Molecular mechanisms of organophosphorus pesticide-induced neurotoxicity

8. Award program: Beginning Grant-In Aid

Sponsor: American Heart Association Ohio Valley Affiliate

Role: Principal Investigator

Period of project: 07/01/2003 - 12/31/2005

Project Title: Molecular regulatory mechanisms of IL-4-induced monocyte chemoattractant protein-1 expression in vascular endothelium

9. Award program: P20 RR 15592

Source: NIH/NCRR, Center of Biomedical Research Excellence in Women's Health

Role: Principal Investigator

Period of project: 09/01/2003 - 09/24/2004

Project Title: Estrogen-mediated protection against HIV-1 Tat protein-induced inflammatory pathways in human vascular endothelial cells

10. Award program: Medical Center Research Fund Grants

Source: University of Kentucky Medical Center

Role: Principal Investigator

Period of project: 07/15/2003 - 06/30/2004

Project Title: Estrogen protects the methamphetamine-induced injury to brain endothelium

11. Award program: Microarray Facility Program

Source: University of Kentucky

Role: Principal Investigator

Period of project: 10/15/2003 - 04/30/2004

Project Title: Microarray analysis of gene expression changes in interleukin-4-stimulated human vascular endothelial cells

12. Award program: Microarray Facility Program

Source: University of Kentucky

Role: Principal Investigator

Period of project: 02/01/2003 - 07/31/2003

Project Title: Microarray analysis of gene expression changes in methamphetamine-treated human brain microvascular endothelial cells

Research Collaborations

1. Dr. Cong, School of Biomedical Engineering and Sciences, Virginia Tech
2. Dr. Davalos, School of Biomedical Engineering and Sciences, Virginia Tech
3. Dr. Davis, Department of Chemical Engineering, Virginia Tech
4. Dr. Dietrich, Department of Civil and Environmental Engineering, Virginia Tech
5. Dr. Duncan, Department of Food Science and Technology, Virginia Tech
6. Dr. Ehrich, Department of Biomedical Sciences and Pathobiology, Virginia Tech
7. Dr. Goldstein, Department of Chemical Engineering, Virginia Tech
8. Dr. Li, Department of Biology, Virginia Tech
9. Dr. Long, Department of Chemistry, Virginia Tech
10. Dr. Rankin, Department of Human Nutrition, Food and Exercise, Virginia Tech
11. Dr. Riddle, Department of Anatomy and Neurobiology, Wake Forest University
12. Dr. Robbins, Department of Radiation Oncology, Wake Forest University School of Medicine
13. Dr. Robinson, Department of Physics, Virginia Tech
14. Dr. Robertson, Department of Biomedical Sciences and Pathobiology, Virginia Tech
15. Dr. Roman, Department of Wood Science and Forest Products, Virginia Tech
16. Dr. Saul, Institute for Regenerative Medicine, Wake Forest University School of Medicine
17. Dr. Sonntag, Department of Geriatrics Medicine, University of Oklahoma Health Sciences Center
18. Dr. Vlachos, Department of Mechanical Engineering, Virginia Tech
19. Dr. Zhou, Department of Food Science and Technology, Virginia Tech

Other Services

Graduate Curriculum Committee Member (SBES Representative)

2005-2006, SBES Representative, College of Engineering, Virginia Tech

Graduate Program Committee Member

2005-present, School of Biomedical Engineering and Sciences, Virginia Tech

Faculty Search Committee Member

August 2005-February 2006, Three tissue-engineering track faculty positions, School of Biomedical Engineering and Sciences, Virginia Tech

Mass Spectrometry Incubator Oversight Committee Member

December 2006-present, Department of Biochemistry, Virginia Tech

New Building Project Committee Member

December 2006-March 2009, ICTAS I Building, Virginia Tech

January 2007-present, ICTAS II Building, Virginia Tech

NSIG Neuroscience Research Promotion Committee Member

February 2009-present, Virginia Tech Neuroscience Interest Group (NSIG)

VTCRI NSIG Annual Symposium Committee Member

February 2009-present, Virginia Tech Neuroscience Interest Group (NSIG)

Editorial Board Member

2006-present: Archives of Pharmacal Research

2007-present: Recent Patents on Biomedical Engineering

2008-present: Current Bioactive Compounds

2008-present: The Open Inflammation Journal

Editorial Reviewer for Scientific Journal Articles

British Journal of Nutrition

Cardiovascular Drugs and Therapy

Environmental Toxicology and Pharmacology

Experimental Biology and Medicine
Inflammation Research
Journal of Cellular and Molecular Medicine
Journal of Cellular Physiology
Journal of Laboratory and Clinical Medicine
Journal of Leukocyte Biology
Journal of Manufacturing Science and Engineering – Transactions of the ASME
Journal of Molecular and Cellular Cardiology
Journal of Nutritional Biochemistry
Journal of Neuroscience Research
Journal of Pharmacy and Pharmacology
Medical Science Monitor
Nutrafoods
Phytotherapy Research
Recent Patents on Biomedical Engineering

Evaluation Panelist

Science, Mathematics, And Research for Transformation Defense Scholarship for Service Program (SMART) Annual Review Panel Meeting sponsored by Department of Defense (DoD), March 2-3, 2007, Arlington, VA

National Defense Science and Engineering Graduate Fellowship Program (NDSEG) Annual Review Panel Meeting sponsored by Department of Defense (DoD), February 15-17, 2008, Arlington, VA

Reviewer for Research Grants

Alzheimer's Association Research Grant Program Peer-Review Panelist: 2004, 2005, 2006, 2007, 2008, 2009

American Heart Association (AHA) Grant Peer-Review Committee: 2008, 2009

Invited Lecture

- 09/2002 Graduate Center for Nutritional Sciences Seminar Series, University of Kentucky, Lexington, KY
- 10/2002 Graduate Center for Toxicology Superfund Basic Research Program Seminar Series, University of Kentucky, Lexington, KY
- 03/2003 Department of Surgery Research Colloquium, University of Kentucky, Lexington, KY
- 05/2003 Polish Pharmacological Society, Silesian Medical University, Poland
- 02/2004 Center of Biomedical Research Excellence in Women's Health, University of Kentucky, Lexington, KY
- 03/2004 School of Biomedical Engineering and Sciences, Virginia Tech, Blacksburg, VA
- 03/2004 School of Medicine, Wake Forestry University, Winston-Salem, NC
- 05/2004 Department of Nutritional Sciences, University of Connecticut, Storrs, CT
- 02/2005 NSF MILES IGERT Program, Virginia Tech, Blacksburg, VA
- 03/2005 Program Project Grant Group, Brain Tumor Center of Excellence, NCI Comprehensive Cancer Center, Wake Forest University School of Medicine, Winston-Salem, NC
- 06/2005 NSF MILES IGERT Program, Virginia Tech, Blacksburg, VA
- 10/2005 Immunity and Inflammation Forum, Virginia Tech, Blacksburg, VA
- 07/2006. Virginia Governor's School, Virginia-Maryland Regional College of Veterinary Medicine (VMRCVM), Blacksburg, VA
- 07/2006. Workshop on Potential Research Collaborations between Carilion Bariatric Surgeons and Virginia Tech Faculty, Institute for Biomedical and Public Health Sciences (IBPHS), Blacksburg, VA
- 10/2006. Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon, Korea (South)
- 10/2006. Healthy & Functional Products Research Team, Lotte Group Research & Development Center, Seoul, Korea (South)
- 10/2006. The Research Institute of Pharmaceutical Sciences, College of Pharmacy, Ewha Womans University, Seoul, Korea (South)
- 07/2007. Virginia Governor's School, Virginia-Maryland Regional College of Veterinary Medicine (VMRCVM), Blacksburg, VA

07/2007. Summer Around the Drillfield, Virginia Tech Alumni Association 2007, Blacksburg, VA
10/2007. College of Pharmacy, Ewha Womans University, Seoul, Korea (South)
10/2007. College of Medicine, Hallym University, Chuncheon, Korea (South)
10/2007. Institute of Biomedical Science and Technology, College of Medicine, Konkuk University,
Seoul, Korea (South)
01/2008. Department of Geriatrics Medicine, University of Oklahoma Health Sciences Center,
Oklahoma City, OK
03/2008. NSF Center for Functional Nanoscale Materials, Clark Atlanta University, Atlanta, GA
10/2008. Institute for Regenerative Medicine, Wake Forest University, Winston-Salem, NC
07/2009. Summer Around the Drillfield, Virginia Tech Alumni Association 2009, Blacksburg, VA

Participate in “2006 Summer Camp” at “Science Museum of West Virginia (Roanoke, VA)”.

Camp Title: Let’s Think Radically II Chemistry

Age Group: Seven middle school students

Dates: June 19-23, 2006

Participate in “2006 Virginia Summer Residential Governor’s School Program at Virginia Tech”.

Age Group: High school students

Dates: July 03-29, 2006

Participate in “2007 Summer Camp” at “Science Museum of West Virginia (Roanoke, VA)”.

Camp Title: Let’s Think Radically

Age Group: Six middle school students

Dates: July 09-13, 2007

Participate in “2007 Virginia Summer Residential Governor’s School Program at Virginia Tech”.

Age Group: High school students

Dates: July 02-28, 2007

Participate in “the Dine with a Faculty Program” at Virginia Tech College of Engineering.

Galileo and Hypatia students at Center for the Enhancement of Engineering Diversity

Date: December 9, 2008

Usher

University Graduate Commencement; Spring 2006, Fall 2007

University Undergraduate Commencement: Spring 2006

Publications

*Peer-reviewed Journal Publications (*senior corresponding author)*

1. **Lee YW**, Jeon YJ, Yoo BS, Yang KH*. 2-Amino-3-methylimidazo [4,5-f] quinoline -mediated immunosuppression involves inhibition of protein kinase C in murine splenocytes. *Cancer Letters*. 1996;107:187-191.
2. Jeon YJ, Han SH, **Lee YW**, Yea SS, Yang KH*. Inhibition of NF- κ B/Rel nuclear translocation by dexamethasone : Mechanism for the inhibition of iNOS gene expression. *Biochemistry and Molecular Biology International*. 1998;45:435-441.
3. **Lee YW**, Han SH, Suh JH, Jeon YJ, Yang KH*. Down-regulation of protein kinase C : A potential mechanism for 2-amino-3-methylimidazo[4,5-f]quinoline-mediated immunosuppression. *Toxicology Letters*. 1998;102-103:79-83.
4. Park HJ, **Lee YW***, Park HH, Lee YS, Kwon IB, Yu JH. Induction of quinone reductase by methanol extract of *Scutellaria baicalensis* and its flavonoid in murine Hepa 1c1c7 cells. *European Journal of Cancer Prevention*. 1998;7:465-471.
5. Jeong HG*, **Lee YW**. Protective effects of diallyl sulfide on N-nitrosodimethylamine-induced immunosuppression in mice. *Cancer Letters*. 1998;134:73-79.
6. **Lee YW**, Han SH, Lee M, Yang KH, Kim HM, Jeon YJ*. 2-Amino-3-methyl[4,5-f]quinoline inhibits nitric oxide production in lipopolysaccharide-stimulated RAW 264.7 cells by blocking p38 kinase activation. *Cancer Letters*. 2000;156 :133-139.
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- Immunopharmacology. 2000;48:173-183.
8. **Lee YW**, Kuhn H, Hennig B, Toborek M*. IL-4 induces apoptosis of human endothelial cells through the caspase-3-dependent pathway. *FEBS Letters*. 2000; 485:122-126.
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 11. **Lee YW**, Park HJ, Hennig B, Toborek M*. Linoleic acid induces MCP-1 expression in human microvascular endothelial cells through an oxidant mechanism. *Journal of Nutritional Biochemistry*. 2001;12:648-654.
 12. **Lee YW**, Hennig B, Yao J, Toborek M*. Methamphetamine induces AP-1 and NF- κ B binding and transactivation in human brain endothelial cells. *Journal of Neuroscience Research*. 2001;66:583-591.
 13. **Lee YW**, Hennig B, Fiala M, Kim KS, Toborek M*. Cocaine activates redox-regulated transcription factors and induces TNF- α expression in human brain endothelial cells. *Brain Research*. 2001;920:125-133.
 14. Park HJ, **Lee YW**, Hennig B, Toborek M*. Linoleic acid-induced VCAM-1 expression in human microvascular endothelial cells is mediated by the NF- κ B-dependent pathway. *Nutrition and Cancer*. 2001;41:126-134.
 15. Toborek M*, **Lee YW**, Kaiser S, Hennig B. Measurement of inflammatory properties of fatty acids in human endothelial cells. *Methods in Enzymology*. 2002;352:198-219.
 16. Toborek M*, **Lee YW**, Garrido R, Kaiser S, Hennig B. Unsaturated fatty acids selectively induce an inflammatory environment in human endothelial cells. *American Journal of Clinical Nutrition*. 2002;75:119-125.
 17. Flora G, **Lee YW**, Nath A, Maragos W, Hennig B, Toborek M*. Methamphetamine-induced TNF- α gene expression and activation of AP-1 in discrete regions of mouse brain: Potential role of reactive oxygen intermediates and lipid peroxidation. *NeuroMolecular Medicine*. 2002;2:71-85.

18. **Lee YW**, Son KW, Flora G, Hennig B, Nath A, Toborek M*. Methamphetamine activates DNA binding of specific redox-responsive transcription factors in mouse brain. *Journal of Neuroscience Research*. 2002;70:82-89.
19. **Lee YW**, Hennig B, Toborek M*. Redox-regulated mechanisms of interleukin-4-induced MCP-1 expression in human vascular endothelial cells. *The American Journal of Physiology - Heart and Circulatory Physiology*. 2003;284:H185-H192.
20. Toborek M*, **Lee YW**, Pu H, Malecki A, Flora G, Garrido R, Hennig B, Bauer HC, Nath A. HIV-Tat protein induces oxidative and inflammatory pathways in brain endothelium. *Journal of Neurochemistry*. 2003;84:169-179.
21. Flora G, **Lee YW**, Nath A, Hennig B, Maragos W, Toborek M*. Methamphetamine potentiates HIV-1 Tat protein-mediated activation of redox-sensitive pathways in discrete regions of the brain. *Experimental Neurology*. 2003;179:60-70.
22. **Lee YW**, Park HJ, Son KW, Hennig B, Robertson LW, Toborek M*. 2,2',4,6,6'-Pentachlorobiphenyl (PCB104) induces apoptosis of human microvascular endothelial cells through the caspase-dependent activation of CREB. *Toxicology and Applied Pharmacology*. 2003;189:1-10.
23. Choi W, Eum SY, **Lee YW**, Hennig B, Robertson LW, Toborek M*. PCB 104-induced proinflammatory reactions in human vascular endothelial cells: Relationship to cancer metastasis and atherogenesis. *Toxicological Sciences*. 2003;75:47-56.
24. Pu H, Tian J, Flora G, **Lee YW**, Nath A, Hennig B, Toborek M*. The HIV protein Tat upregulates inflammatory mediators and induces monocyte invasion into the brain. *Molecular and Cellular Neuroscience*. 2003;24:224-237.
25. Eum SY, **Lee YW**, Hennig B, Toborek M*. VEGF regulates PCB 104-mediated stimulation of permeability and transmigration of breast cancer cells in human microvascular endothelial cells. *Experimental Cell Research*. 2004;296:231-244.
26. **Lee YW***, Eum SY, Nath A, Toborek M. Estrogen-mediated protection against HIV Tat protein-induced inflammatory pathways in human vascular endothelial cells. *Cardiovascular Research*. 2004;63:139-148.
27. **Lee YW***, Eum SY, Chen KC, Hennig B, Toborek M. Gene expression profile in interleukin-4-stimulated human vascular endothelial cells. *Molecular Medicine*. 2004;10:19-27.

28. Park HJ, **Lee YW**, Lee SK*. Baicalin induces NAD(P)H:quinone reductase through the transactivation of AP-1 and NF- κ B in Hepa 1c1c7 cells. *European Journal of Cancer Prevention*. 2004;13:521-528.
29. Flora G, Pu H, **Lee YW**, Ravikumar R, Nath A, Hennig B, Toborek M*. Proinflammatory synergism of ethanol and HIV-1 Tat protein in brain tissue. *Experimental Neurology*. 2005;191:2-12.
30. Hayashi K, Pu H, Tian J, Andras IE, **Lee YW**, Hennig B, Toborek M*. HIV-Tat protein induces P-glycoprotein expression in brain microvascular endothelial cells. *Journal of Neurochemistry*. 2005;93:1231-1241.
31. Toborek M*, **Lee YW**, Flora G, Pu H, Andras IE, Wylegala E, Hennig B, Nath A. Mechanisms of the blood-brain barrier disruption in HIV-1 infection. *Cellular and Molecular Neurobiology*. 2005;25:181-199.
32. **Lee YW***, Hirani AA, Kyprianou N, Toborek M. Human immunodeficiency virus-1 Tat protein up-regulates interleukin-6 and interleukin-8 expression in human breast cancer cells. *Inflammation Research*. 2005;54:380-389.
33. **Lee YW***, Hirani A. A. Role of interleukin-4 in atherosclerosis. *Archives of Pharmacal Research*. 2006;29:1-15.
34. Eum SY, **Lee YW**, Hennig B, Toborek M*. The interplay between epidermal growth factor receptor and Janus kinase 3 regulates polychlorinated biphenyl-induced matrix metalloproteinase-3 expression and transendothelial migration of tumor cells. *Molecular Cancer Research*. 2006;4:361-370.
35. Kreke MR, Sharp LA, **Lee YW**, Goldstein AS*. Effects of intermittent shear stress on mechanotransductive signaling and osteoblastic differentiation of bone marrow stromal cells. *Tissue Engineering Part A*. 2008;14:529-537.
36. **Lee YW***, Lee WH. Protective effects of genistein on pro-inflammatory pathways in human brain microvascular endothelial cells. *Journal of Nutritional Biochemistry*. 2008;19:819-825.
37. Sharp LA, **Lee YW**, Goldstein AS*. Effect of low-frequency pulsatile flow on expression of osteoblastic genes by bone marrow stromal cells. *Annals of Biomedical Engineering*. 2009 ;37:445-453.
38. Hong JH*, Omur-Ozbek P, Stanek BT, Dietrich AM, Duncan SE, **Lee YW**, Lesser G. Taste

and odor abnormalities in cancer patients. *Journal of Supportive Oncology*. 2009;7:58-65.

39. Lee WH, Kang S, Vlachos PP, **Lee YW***. A novel *in vitro* ischemia/reperfusion injury model. *Archives of Pharmacal Research*. 2009;32:421-429.
40. Hogan S, Chung H, Zhang L, Li J, **Lee YW**, Dai Y, Zhou K*. Antiproliferative and antioxidant properties of anthocyanin-rich extract from Açai. *Food Chemistry*. 2009: In press.
41. Roman M*, Dong S, Hirani A, **Lee YW**. Cellulose nanocrystals for drug delivery. In: *Polysaccharide Materials: Performance by Design*, Edgar KJ, Heinze T, Buchanan C. Eds., ACS Symposium Series, American Chemical Society, Washington, DC. 2009; In press.
42. Lee WH, Sonntag WE, Mitschelen M, Yan H, **Lee YW***. Irradiation induces pro-inflammatory environments in rat brain. *International Journal of Radiation Biology*. Submitted.
43. **Lee YW***, Lee WH, Kim PH. Oxidative mechanisms of IL-4-induced IL-6 expression in vascular endothelium. *Cytokine*. Submitted.
44. **Lee YW***, Lee WH, Kim PH. Role of NADPH oxidase in interleukin-4-induced monocyte chemoattractant protein-1 expression in vascular endothelium. *Journal of Vascular Research*. Submitted.

Abstract/Proceeding Publications (*senior corresponding author)

1. **Lee YW**, Kuhn H, Hennig B, Daugherty A, Toborek M*. Interleukin-4-mediated transcriptional regulation of 15-lipoxygenase gene expression in HUVEC. *Molecular Biology of the Cell*. 1999;10:324a.
2. Toborek M*, Kaiser S, **Lee YW**, Schnurr K, Daugherty A, Hennig B, Kuhn H. Interleukin-4 induces expression of 15-lipoxygenase gene and creates a pro-inflammatory environment in HUVEC. *Molecular Biology of the Cell*. 1999;10: 324a.
3. Toborek M*, **Lee YW**, Garrido R, Kaiser S, Hennig B. Dietary fatty acid-induced oxidative and inflammatory environments in endothelial cells. *Journal of the American College of Nutrition*. 2000;19:684.
4. **Lee YW**, Kuhn H, Hennig B, Toborek M*. IL-4 induces VCAM-1 gene expression in human endothelial cells by oxidative mechanisms. *FASEB Journal*. 2000;14: A1545.
5. Park HJ, **Lee YW**, Hennig B, Toborek M*. Linoleic acid-induced VCAM-1 expression in human microvascular endothelial cells is mediated by the NF- κ B-dependent pathway. *FASEB*

Journal. 2001;15:A866.

6. **Lee YW**, Kuhn H, Hennig B, Toborek M*. Interleukin-4 induces apoptosis of human endothelial cells through caspase-3-dependent pathway. *FASEB Journal*. 2001;15:A510.
7. **Lee YW**, Nath A, Hennig B, Toborek M*. Inflammatory environments induced by methamphetamine in human brain endothelial cells. *Neurology*. 2001;56:A166.
8. Malecki A, **Lee YW**, Nath A, Hennig B, Bauer HC, Trzeciak HI, Toborek M*. HIV-1 Tat protein, cocaine and methamphetamine induce oxidative stress and dysfunction of brain microvascular endothelial cells. *Polish Journal of Pharmacology*. 2001;53: 36.
9. Park HJ, **Lee YW**, Min HY, Kim Y, Lee SK*. Baicalin-induced NAD(P)H:Quinone reductase is associated with the activation of AP-1 and NF- κ B. *Proceedings of the American Association for Cancer Research*. 2002; 43:476.
10. **Lee YW**, Hennig B, Toborek M*. Redox-regulated mechanisms of IL-4-induced MCP-1 expression in human vascular endothelial cells. *FASEB Journal*. 2002;16:A211.
11. Choi W, **Lee YW**, Hennig B, Robertson LW, Toborek M*. PCB-induced inflammatory reactions in human endothelial cells: implications in cancer metastasis. *FASEB Journal*. 2002;16:A961.
12. Durham CQ, **Lee YW**, Hennig B, Toborek M*. Signaling mechanisms of linoleic acid-induced MCP-1 gene expression in human endothelial cells. *FASEB Journal*. 2002;16:A211.
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14. Flora G, **Lee YW**, Nath A, Maragos W, Hennig B, Toborek M*. Oxidative mechanisms of methamphetamine-induced TNF- α gene expression in discrete regions of mouse brain. *FASEB Journal*. 2002;16:A965.
15. Toborek M*, **Lee YW**, Park HJ, Hennig B. Oxidative mechanisms of linoleic acid-induced adhesion molecule expression in human endothelial cells. *Proceedings of Department of Defense Breast Cancer Research Program*. 2002; 3:P45-16.
16. Toborek M*, Pu H, Flora G, **Lee YW**, Hennig B, Nath A. The HIV protein Tat-induced induction of inflammatory responses in the brain tissue. *Journal of Neurovirology*. 2002;8:43.
17. **Lee YW**, Hennig B, Robertson LW, Toborek M*. 2,2',4,6,6'-Pentachlorobi-phenyl (PCB104) induces apoptosis of human microvascular endothelial cells through the caspase-dependent

- activation of CREB. *FASEB Journal*. 2003; 17:A1346.
18. Choi W, Eum SY, **Lee YW**, Hennig B, Robertson LW, Toborek M*. PCB104 induces oxidative stress and stimulates proinflammatory reactions in human vascular endothelial cells: Relationship to cancer metastasis. *FASEB Journal*. 2003;17:A272.
 19. Eum SY, **Lee YW**, Hennig B, Robertson LW, Toborek M*. PCB104 increases the permeability of human microvascular endothelial cells: Involvement of matrix metalloproteinases. *FASEB Journal*. 2003;17:A1082.
 20. Toborek M*, **Lee YW**, Pu H, Flora G, Hennig B. Inflammatory pathways in HIV-Tat protein-induced activation of brain endothelium. *FASEB Journal*. 2003; 17:A665-A666.
 21. Flora G, Pu H, **Lee YW**, Nath A, Hennig B, Toborek M*. Ethanol potentiates the HIV-1 Tat protein induced redox-sensitive pathways in mouse brain. *FASEB Journal*. 2003;17:A794.
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 24. **Lee YW***, Malecki A, Toborek M. Estrogen-mediated protection against methamphetamine-induced inflammatory pathways in human brain endothelial cells. *Journal of Neurochemistry*. 2003;85:36.
 25. Pu H, Flora G, Tian J, **Lee YW**, Nath A, Hennig B, Toborek M*. N-acetylcysteine prevents HIV-1 Tat protein-induced disruption of ZO-1 in brain endothelium. *Journal of Neurovirology*. 2003;9:78-79.
 26. **Lee YW***, Kyprianou N, Nath A, Toborek M. Human immunodeficiency virus-1 Tat protein upregulates IL-6 and IL-8 expression in human breast cancer cells. *Proceedings of the American Association for Cancer Research*. 2004;45:403.
 27. **Lee YW***, Eum SY, Hennig B, Toborek M. Potential role of cytochrome P450 3A4 (CYP3A4) in the PCB104-mediated barrier dysfunction of human microvascular endothelial cells. *FASEB Journal*. 2004;18:A991.
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- inflammatory pathways in human vascular endothelial cells. *FASEB Journal*. 2004;18:A500.
29. **Lee YW***, Hennig B, Toborek M. Protective role of 17 β -estradiol in the HIV-1 Tat protein-induced inflammatory pathways in human endothelial cells. *FASEB Journal*. 2004;18:A1212.
 30. Han MJ, **Lee YW**, Son KW, Eum SY, Hennig B, Toborek M*. HIV Tat protein affects PPAR γ activation in human endothelial cells. *FASEB Journal*. 2004;18:A1287.
 31. Hayashi K, Andras IE, Tian J, **Lee YW**, Hennig B, Toborek M*. HIV-Tat protein affects the drug efflux transporters of the blood-brain barrier. *FASEB Journal*. 2004;18:A676.
 32. Eum SY, **Lee YW**, Hennig B, Toborek M*. Specific non-coplanar PCBs disrupts barrier function and increase transendothelial migration of breast cancer cells. *FASEB Journal*. 2004;18:A187.
 33. **Lee YW***, Toborek M. Microarray analysis of gene expression changes in interleukin-4-stimulated human vascular endothelial cells. *Journal of American Aging Association*. 2004.
 34. **Lee YW***, Vlachos PP, Eum SY, Toborek M. Interleukin-4 induces E-selectin expression in human vascular endothelial cells. *FASEB Journal*. 2005;19:A696.
 35. Eum SY, **Lee YW**, Hennig B, Toborek M*. Role of MAP kinases in activation of human microvascular endothelial cell by exposure to polychlorinated biphenyls. *FASEB Journal*. 2005;19:A1067.
 36. Etebari A, Akle B, Leo D, **Lee YW**, Vlachos P*. Characterization of a novel bioreactor using DPIV. *Proceedings of the 2005 Summer Bioengineering Conference*. 2005.
 37. Hirani AA, Kang S, Ehrich M, **Lee YW***. Vascular endothelial injury by chlorpyrifos: Relationship to brain metastasis. *Proceedings of American Cancer Society 24th Annual Seminar of Cancer Researchers in Virginia*. 2005: Abstract#29.
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44. Etebari A, Kang S, **Lee YW**, Vlachos PP*. Characterization of near-wall flow over endothelial cell monolayers. Proceedings of the 2006 Summer Bioengineering Conference. 2006.
45. Layman JM, **Lee YW**, Long TE*. Influence of macromolecular architecture on nucleic acid transfection. Proceedings of the 232nd ACS National Meeting. 2006.
46. Layman JM, **Lee YW**, Long TE*. Synthetic macromolecules at the interface with biology: From tailored gene transfer agents to phospholipids membranes and scaffolds. Proceedings of the 232nd ACS National Meeting. 2006.
47. Sharp LA, **Lee YW**, Goldstein AS*. Effect of intermittent flow on mechanotransductive signaling and osteoblastic differentiation. Program of 2006 BMES Annual Meeting. 2006.
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52. Hirani AA, Lee WH, Kang S, Ehrich M, **Lee YW***. Chlorpyrifos induces pro-inflammatory environment in discrete regions of mouse brain. *FASEB Journal*. 2007;21:785.4.
53. Lee WH, Kang S, Hirani AA, **Lee YW***. A novel double-layer parallel-plate flow chamber. Proceedings of the 33rd Northeast Bioengineering Conference. 2007;53.

54. Meldrum B, Balbuena P, Fuhrman K, Wise B, Hirani AA, **Lee YW**, Ehrich M*. Transfer of lead acetate through an in vitro blood-brain barrier system. *Toxicologist*. 2007;96:707.
55. Dong S, Hirani AA, **Lee YW**, Roman M*. Cellulose nanocrystals as targeted drug delivery systems. Proceedings of the 233rd ACS National Meeting. 2007.
56. Layman JM, Hirani AA, Hunley MT, **Lee YW**, Lepene B, Thatcher CD, Long TE*. Macromolecules with tailored non-covalent interactions for biomedical applications. Proceedings of the 233rd ACS National Meeting. 2007.
57. Omur-Ozbek P, **Lee YW**, Duncan S, Dietrich A*. Role of metals in health and flavor of drinking water. Proceedings of Association of Environmental Engineering and Science Professors (AEESP) Education and Research Conference. 2007:121.
58. Sharp LA, **Lee YW**, Goldstein AS*. Effect of pulsatile flow on the osteoblastic differentiation of bone marrow stromal cells. Program of 2007 BMES Annual Fall Meeting. 2007:P5.121.
59. Lepene BS, Williams SR, Long TE, Hirani AA, **Lee YW**, Thatcher CD*. Folate targeted glutathione antioxidant delivery systems and their impact on intracellular oxidative status. Proceedings of the 234th ACS National Meeting. 2007.
60. **Lee YW***, Lee WH, Kang YH. Beneficial effects of soy isoflavone on vascular inflammation. Proceedings of the Korean Nutrition Society International Conference. 2007:P4-31.
61. Dong S, Hirani AA, **Lee YW**, Roman M*. Cellulose nanocrystals as for targeted drug delivery applications. Proceedings of the 235rd ACS National Meeting. 2008.
62. **Lee YW***, Lee WH. IL-4 induces interleukin-6 (IL-6) expression in human aortic endothelial cells. *The FASEB Journal*. 2008;22:964.3.
63. Lee WH, William E. Sonntag, **Lee YW***. Differential regulation of angiogenic factors by radiation in rat brain. *The FASEB Journal*. 2008;22:746.2.
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65. **Lee YW***, Lee WH, Hirani AA. Oxidative mechanisms of interleukin-4 (IL-4)-induced IL-6 expression in human aortic endothelial cells. Program Book of the HEART UK 22nd Annual Conference. 2008.
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67. Omur-Ozbek P, Dietrich AM*, Duncan S, **Lee YW**. Metallic Flavor of Iron and Copper. Proceedings of the 8th International Water Association (IWA) Symposium on Off-Flavors in the Aquatic Environment. 2008.
68. Sharp LA, **Lee YW**, Goldstein AS*. Effect of frequency of pulsatile fluid flow on mechanotransductive signaling of osteoblasts. Proceedings of the 2008 American Institute of Chemical Engineers (AIChE) Annual Meeting. 2008.
69. Conner KR, Forbes ME, Lee WH, **Lee YW**, Riddle DR*. Angiotensin type 1 receptor blockade and radiation-induced brain injury. Proceedings of Neuroscience 2008, the 38th Annual Meeting of the Society for Neuroscience. Abstract #755-19.
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71. Choi DC, Navarro F, Hirani A, **Lee YW**, Roman M*. Ink-jet printed cellulose nanocrystal substrates for cell micropatterning. Proceedings of the 237th ACS National Meeting. 2009.
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74. Lee WH, Sonntag WE, **Lee YW***. Age-related changes in inflammatory gene expression in response to the brain irradiation. Journal of Immunology. 2009;182:93.10.
75. Kim PH, Lee WH, **Lee YW***. 5-Lipoxygenase mediates IL-4-induced ROS generation and MCP-1 expression in human aortic endothelial cells. Journal of Immunology. 2009;182:93.12.
76. **Lee YW***, Kim PH, Lee WH. Role of NADPH oxidase in IL-4-induced pro-inflammatory responses in vascular endothelium. Atherosclerosis. 2009;10 (Supplements):P671.
77. **Lee YW***, Lee WH, Sonntag WE, Warrington J, Farley J. Radiation affects matrix metalloproteinases in brain. Journal of Neurochemistry. 2009; Accepted.
78. Lee WH, Kim PH, **Lee YW***. Polyhydroxylated fullerene attenuates LPS-induced expression of adhesion molecules in HAEC. Proceedings of the Biomedical Engineering Society Annual Meeting. 2009; Accepted.

79. Warrington JP, **Lee YW**, Johnson DA, Ahmad S, Herman TS, Sonntag WE*. Effects of whole brain irradiation on the number of circulating endothelial precursor cells. Proceedings of Neuroscience 2009, the 39th Annual Meeting of the Society for Neuroscience. 2009; Accepted.

Presentations (*senior author)

1. **Lee YW**, Jeon YJ, Yang KH. 1995*. 2-Amino-3-methylimidazo[4, 5- f]quinoline (IQ) inhibits the immune response of T lymphocytes by blocking cell cycle progression at G₁ phase. *The Fall Conference and Symposium on Environmental Toxic Compounds, Seoul, Korea (South)*
2. **Lee YW**, Jeon YJ, Yang KH*. 1995. Effects of heterocyclic amines, 2-amino-3-methylimidazo[4,5-f] quinoline (IQ), on immune response. *The Fall Conference and Symposium on Environmental Toxic Compounds, Seoul, Korea (South)*
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