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**ACADEMIC TRAINING:**

<b>INSTITUTION</b>	<b>LOCATION</b>	<b>DATES</b>	<b>DEGREE</b>
St. Anthony High School	New Bedford, MA	1968-72	
Stonehill College	North Easton, MA	1972-76	B.S. Biology (Cum Laude)
Purdue University	West Lafayette, IN	1976-79	M.S. (Anatomy & Cell Biology)
Purdue University	West Lafayette, IN	1979-81	Ph.D. (Anatomy & Cell Biology)
Chemical Industry Institute of Toxicology (CIIT), Centers for Health Research (Now Hamner Institutes for Health Sciences)	Research Triangle Park, NC	1982-84	Postdoc (Toxicology)

**PROFESSIONAL EXPERIENCE:**

- Aug., 1976-Aug., 1981: Graduate Instructor, Department of Veterinary Anatomy, Purdue University, School of Veterinary Medicine, West Lafayette, IN.
- Aug., 1981-Dec., 1981: Postdoctoral Research Associate, Department of Veterinary Anatomy, Purdue University. DoD, US Naval Oceans Systems. (Dolphin Skin Histology).
- Jan., 1982-Jan., 1984: Postdoctoral Fellow in Pathology and Toxicology, Chemical Industry Institute of Toxicology, Research Triangle Park, NC. Co-Investigator: Pathogenesis of chemically -induced toxicity of the respiratory system with special reference to the nasal passages.

- Feb., 1983-Dec., 1983: Adjunct Assistant Professor, Department of Anatomy, Physiological Sciences and Radiology, College of Veterinary Medicine, NCSU, Raleigh, NC.
- Jan., 1984-June, 1990: Research Assistant Professor, Department of Anatomy, Physiological Sciences and Radiology College of Veterinary Medicine, NCSU, Raleigh, NC.
- Jan., 1986-present: Elected to membership on the Graduate Faculty for Toxicology. Toxicology Program, School of Agriculture and Life Sciences, now the Department of Environmental and Molecular Toxicology, NCSU, Raleigh, NC.
- July, 1990- Dec.1994: Research Associate Professor, College of Veterinary Medicine, NCSU, Raleigh, NC.
- Jan., 1995-present: Professor, Department of Clinical Sciences, College of Veterinary Medicine, NCSU, Raleigh, NC.
- July, 1991-1998: Research/Clinical Associate Professor, Department of Dermatology, School of Medicine, The University of North Carolina at Chapel Hill, Chapel Hill, NC.
- July, 1998-present: Research Adjunct Professor, Department of Dermatology, School of Medicine, The University of North Carolina at Chapel Hill, Chapel Hill, NC.
- May, 2003-present: Professor, Joint Department of Biomedical Engineering Associate Faculty, at UNC Chapel Hill, NC, and NCSU.
- September, 2010- present: Faculty Mentor NCSU Initiative for Maximizing Student Diversity (IMSD)

## **TEACHING EXPERIENCE: GRADUATE STUDENTS (MAJOR ADVISOR)**

John Randall King, D.V.M., Ph.D. 1992, Thesis Entitled, "Cutaneous Toxicity of Dichloro (2-chlorovinyl) Arsine in Isolated Perfused Skin".

- **Recipient of 1990 National Society of Toxicology (SOT) travel award.**

Vagdevi Srikrishna, M.S. 1991, Thesis Entitled, "Cutaneous Toxicity in the Isolated Perfused Porcine Skin Flap Due to the Topical Application of Hydrochloric Acid, Sodium Hydroxide and the Herbicide Paraquat".

Jason Zili Zhang, M.D., Ph.D. 1996, Thesis Entitled, "Potential Mechanisms of Bis (2-chloroethyl) Sulfide-Induced Cutaneous Vesication".

- **Recipient of 1994 National Society of Toxicology (SOT) Travel Award.**

David Allen, Ph.D. 2001, Thesis Entitled, "Identification of Biomarkers of Skin Inflammation Following Exposure to Jet Fuels Using In Vitro Models".

- **Recipient of The Harry Bodde Research Award at the Gordon Research Conference on "Barrier Function of Skin" Tilton, New Hampshire, August, 1997.**
- **Recipient of Pathology Associates Travel Award to SOT.**

Pareeya Udomkusionsri, D.V.M, Ph.D. 2003. Thesis Entitled, "Pathogenesis of the Acute Ulceration Response in Fish." (Co-Chair).

- **Awarded the Monica Menard Award for Excellence in Veterinary Pathobiological Research, 2002.**

Jillian Rouse, M.S. 2007. Biomedical Engineering. Thesis Entitled, "Effects of Mechanical Stimuli on Biological Interactions with Amino Acid-Derivatized Fullerenes at the Tissue and Cellular Levels".

- **Awarded 3<sup>rd</sup> place for best poster presentation at North Carolina State University, College of Veterinary Medicine, Annual Research Forum, March, 2006**
- **Awarded 3<sup>rd</sup> place for best oral presentation at the UNC/NCSU Biomedical Research Review, April 22, 2006**
- **Awarded 1<sup>st</sup> place for best poster presentation on "The effects of mechanical flexion on the penetration of amino acid-derivatized nanoparticles in skin". North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 9, 2007**
- **Awarded 1<sup>st</sup> place in the Dermal Toxicology Specialty Section at the 46<sup>th</sup> Annual Meeting of the National Society of Toxicology (SOT)-2007**
- **Honorable mention in the In Vitro Specialty Section at the 46<sup>th</sup> Annual Meeting of the National Society of Toxicology (SOT)-2007**
- **First place in the Biomedical Engineering Research Symposium, UNC, Chapel Hill, April 13, 2007**

Leshuai Zhang, Ph.D. 2009. Cell Biology. Thesis Entitled, "Toxicity of Nanomaterials and Mechanisms of Endocytic Pathways". November 12, 2009.

- **Toxicology and Applied Pharmacology, Certificate of Recognition for one of Elsevier's Top 10 Cited Articles on Scopus 2007-2008.**
- **Awarded a plaque for third place for best poster at the In Vitro and Alternative Methods Specialty Section at the 47<sup>th</sup> Annual Meeting of the National Society of Toxicology (SOT), Seattle, Washington-2008**
- **First place award for the MB Research Award, at the 47<sup>th</sup> Annual Meeting of the National Society of Toxicology (SOT), Seattle, Washington-2008**
- **Received the Battelle Memorial Research Award of the Dermal Toxicology Specialty Section at the 48<sup>th</sup> Annual Meeting of the National Society of Toxicology (SOT), Baltimore, MD, 2009.**

Hyun Lee, M. S. 2009, Biomathematics. November 10, 2009.

- **Honorable mention in the Risk Assessment Specialty Section at the 48<sup>th</sup> Annual Meeting of the National Society of Toxicology (SOT), Baltimore, MD, 2009.**

Meghan Samberg, Ph.D. student (present), Biomedical Engineering

- **Parenteral Drug Association Student Award – ILS, Inc. December, 2009.**

- **Recipient of 2011 National Society of Toxicology (SOT) Travel Award to attend the 50<sup>th</sup> Annual Meeting- March, 2011.**

## **POSTDOCTORAL FELLOWS:**

Zili Zhang, M.D., Ph.D, Postdoctoral Fellow in Toxicology, 1996-1998

Chi- Chung Chou, D.V.M, Ph.D. Postdoctoral Fellow in Toxicology, 2001-2002

Expression profiling of human epidermal keratinocyte response following one minute JP-8 exposure. *Cutaneous and Ocular Toxicology* 25: 141-153, 2006.

- **Awarded Best Paper for 2006 at the National Society of Toxicology Dermal Toxicology Specialty Section**

Xin-Rui Xia, Ph.D., Postdoctoral Fellow in Toxicology, 2001-2003

- **2<sup>nd</sup> place award at the National Society of Toxicology In Vitro Specialty Section**

Jessica Ryman-Rasmussen, Ph.D., Postdoctoral Fellow in Toxicology, 2005-2007

- **1<sup>st</sup> place award at the 45<sup>th</sup> Annual Meeting of the National Society of Toxicology Dermal Toxicology Specialty Section and**
- **Honorable Mention by the In Vitro Specialty Section**

Leshuai Zhang, Ph.D. Postdoctoral Fellow in Toxicology, 2010

John G. Saathoff, DVM., (2010-Present)

## **SERVED ON THE GRADUATE COMMITTEES OF:**

Michael P. Carver, Ph.D. 1988. Thesis Entitled, "Development of the Isolated Perfused Porcine Skin Flap for *in vitro* Studies of Percutaneous Absorption Pharmacokinetics and Cutaneous Biotransformation".

Carol A. Thompson, D.V.M., Ph.D. 1989. Thesis Entitled, "Gentamicin Nephrotoxicity in Subtotally Nephrectomized Dogs and Rats: A Morphologic Study".

Lisa Maurer, Ph.D. 1989. Thesis Entitled, "Identification and Characterization of pilE, a Gene Determining Receptor Binding of *Escherichia coli* Type 1 Pili".

Shao-Kuang Chang, D.V.M., Ph.D. 1992. Thesis Entitled, "Studies on the effect of Environmental Parameters on Percutaneous Absorption of Parathion *in vitro* in Porcine Skin".

Mark Heit, D.V.M., Ph.D. 1992. Thesis Entitled, "Transdermal Iontophoretic Delivery of Luteinizing Hormone Releasing Hormone (LHRH)".

Theodore Zainal, M.S. 1994. Thesis Entitled "Cornifin Expression is Altered in Specific Stages of Mouse Skin Carcinogenesis".

Paul Evansky, M.S. Toxicology (non-thesis) March 21, 1995.

Kennedy Wekesa, Ph.D. 1995, Thesis Entitled “Organizational and Activational Effects of Androgens in a Reflex Ovulator, The Pine Vole (*Microtus pinetorum*)

Ann Colbert, M.S. 1996, “Morphological Investigations of Variability in Bottlenose Dolphin (*Tursiops truncatus*) Skin for Use in Cutaneous Absorption Studies”.

Ronald Baynes, D.V.M., Ph.D. 1997. “Percutaneous Absorption and Cutaneous Toxicity of Mechanistically- Defined Chemical Mixtures”.

Hann-Yi Chen, Ph.D. 1998. “Identification of Human Milk Antibacterial Factors and the Effect of Temperature on Activity”. Graduate School Representative.

Faquir Muhammad, D.V.M., Ph.D. 2004. “Topical absorption and toxicity studies of jet fuel hydrocarbons in skin”. **Awarded the 2003 National Society of Toxicology, Dermal Toxicology Specialty Section Research Award.**

Deon Van dermerve, D.V.M., Ph.D. 2005. “The Dermal Absorption of Selected Agricultural and Industrial Chemicals Through Porcine Skin with Emphasis on Chemical Mixture Effects”.

Sarah Barcio, M.S., 2006. Biomedical Engineering. “Thermally Responsive Surfaces for Tissue Engineering and Apparel Applications”.

Ruwan Sumanasinghe, Ph.D. 2006. Fiber and Polymeric Science and Biomedical Engineering, “Functional Bone Tissue Engineering Using Human Mesenchymal Stem Cells and Polymeric Scaffolds”.

Seth McCullen, M.S., 2006. Biomedical Engineering. “Development, Characterization, and Function of Electrospun Nanocomposites for Tissue Engineering”.

Adrian T. O’Neill, Ph.D., 2008. Biomedical Engineering. “A Microfluidic Platform for Human Epidermal Keratinocyte Cytotoxicity Assays”.

Bonnie Pierson, M.S., 2009. Biomedical Engineering. “Characterization and Evaluation of a Novel Nanoporous Gold Biosensor Substrate”.

Hyun Lee, M. S. 2009, Biomathematics. (Non Thesis), November 10, 2009.

Carla Haslaurer, Ph.D., 2009. Biomedical Engineering. Design and Validation of Three- Dimensional Scaffolds for Bone Tissue Engineering Applications Using Adipose-Derived Adult Stem Cells”.

Sangwon Chung, Ph.D., 2010. Textile Engineering. “Fibrous Scaffolds for Tissue Engineering Applications”. July 27, 2010.

Shaun Davis Gittard, Ph.D.,2011. Biomedical Engineering. “Laser-Based Rapid Prototyping of Micro and Nanoscale Medical Devices for Drug Delivery and Regenerative Medicine”, March 21, 2011.

Philip Miller (present), Biomedical Engineering

## **TEACHING EXPERIENCE: COLLEGE OF VETERINARY MEDICINE, NCSU**

Jan-May.	2009-present	Material Science and Engineering MSE791C Introduction to Nanomaterials
Aug-Dec.	2007- present	Biomedical Engineering Research Laboratory Rotation BME590R
Aug-Dec.	2006	Seminar Series CBS 800
Aug-Dec.	2006-present	Introduction to Research VMB 991D
Aug-Dec.	2004-present	Evaluation of Biotextiles TT 532 (Histology of Biotextile Implants)
Aug-Dec.	2004-present	New Techniques in Research Pharmacology / Toxicology CBS 860 (Course Leader)
Jan-May.	1999-present	Biochemical Toxicology TOX 710
Jan-May.	1993-1998	Biochemical Toxicology TOX 510 (Mechanisms of Cutaneous Toxicology)
Aug-Dec.	1998-present	Instrumentation in Pharmacological Research CBS 860
Aug-Dec.	1997-2000	Orientation to Toxicology Research TOX 598
Jan-May.	1998-present	Skin Toxicology VMC 991C and A- Selectives
Jan- Dec.	1989-present	Organization of the Biweekly Skin Journal Club (Graduate students)
Jan-May.	1986	Systemic Pharmacology and Toxicology VMS 562
	1988, 1990	(Respiratory and Integumentary Toxicology)
Aug-Dec.	1984-1996	Instrumentation in Pharmacological Research VMS 561 (Transmission Electron Microscopy and Light Microscopy)
Aug- Dec.	1988	Cell Biology VMS 697 (Formaldehyde Toxicity)
Aug-Dec.	1987	Advanced Immunology and Biotechnology VMS 691 (The Immune System of the Skin)
Jan-May.	1985	Veterinary Histology VMS 812 (Laboratory)
Aug-Dec.	1984	Veterinary Histology VMS 812 (Laboratory)
Aug-Dec.	1984	Cell Structure VMS 630 (Respiratory, Integumentary)

## **SCHOOL OF VETERINARY MEDICINE, PURDUE UNIVERSITY; SCHOOL OF MEDICINE, INDIANA UNIVERSITY / PURDUE UNIVERSITY.**

Jan-May,	1981	Human Neuroanatomy
	1981	Canine Neuroanatomy
Aug-Dec,	1980	Microscopic Anatomy I
Jan-May	1980	Human Neuroanatomy
	1980	Canine Neuroanatomy
Aug-Dec	1979	Human Gross Anatomy
	1979	Canine Gross Anatomy
Jan-May,	1979	Microscopic Anatomy II
	1979	Canine Neuroanatomy
Aug-Dec.	1978	Microscopic Anatomy I
	1978	Microscopic Anatomy of Domestic Animals (for Engineers)
Aug-Dec.	1977	Canine Gross Anatomy
Jan-May,	1977	Large Animal Gross Anatomy

## NATIONAL AND INTERNATIONAL COMMITTEES, ELECTED POSITIONS AND LEADERSHIP CONTRIBUTIONS:

**Chairman**, *In Vitro* Models of Skin Toxicity Poster/Discussion Session at the National Society of Toxicology Feb. 1990, Miami Beach, FL.

**Chairman**, Skin Toxicology Section at the National Society of Toxicology, March 1995, Baltimore, MD.

**Organizing and Scientific Committee, and Chairman** of the Toxicology Section, International Symposium for Swine in Biomedical, Research, College Park, MD, October 22-25, 1995.

**External Reviewer** and on the External Review Committee for the College of Veterinary Medicine, Iowa State University, Ames, Iowa. January 31 -February 2, 1996. Prepared an Executive Summary for Dr. Richard Ross, Dean of the College of Veterinary Medicine.

**Chairman**, Skin Toxicology Section at the National Society of Toxicology, March 1996, Anaheim, CA.

**Chairperson and Organizer** for The National Society of Toxicology Annual Meeting, Continuing Education Course entitled "In Vitro and In Vivo Assessment of Cutaneous Toxicity", March 1-5, 1998, Seattle WA.

**Chairman**, Skin Toxicology Section at The National Society of Toxicology, March 1999, New Orleans, LA.

Elected **Secretary-Treasurer** of the In Vitro Specialty Section of The National Society of Toxicology (1998-1999)

Elected **Vice-President Elect** of the In Vitro Specialty Section of The National Society of Toxicology (1999-2000)

**Vice-President** of the In Vitro Specialty Section of The National Society of Toxicology (2000-2001)

Elected **Secretary** of the North Carolina State University Chapter of the Society of Sigma Xi, The Scientific Research Society (1998-1999)

**Treasurer** of the North Carolina State University Chapter of the Society of Sigma Xi, The Scientific Research Society (1999-2000)

American Association of Pharmaceutical Sciences Animal Health Group; Pharmaceuticals Challenges in Veterinary Medicine, (1999-present)

In Vitro Specialty Section Judge for Outstanding Graduate Student Abstracts (1999-2000)

Elected as Membership Committee (**Chairperson**), North Carolina State University Chapter of the Society of Sigma Xi, The Scientific Research Society (2000-2004)

**President**, In Vitro Specialty Section of The National Society of Toxicology (2001-2002)

**Chairperson**, National Society of Toxicology In Vitro Specialty Section Program Committee (2000-2002)

**Chairperson**, National Society of Toxicology Dermal Toxicology Specialty Section Continuing Education Committee (2000-2001)

**Chairperson**, Skin Toxicology Section at The National Society of Toxicology, March 2001, San Francisco, CA.

**Elected** to the National Society of Toxicology **Nominating Committee**, Membership-at-Large Committee, (2001-2002)

**Ad Hoc Consultant** to the National Toxicology Program's Advisory Committee on Alternative Toxicological Methods (ACATM). This advisory committee has been established by the Department of Health and Human Services and it provides advice on the activities and priorities of the NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) and the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) (2001).

**Elected Vice-President Elect** of the Dermal Toxicology Specialty Section of The National Society of Toxicology (2002-2003)

**Chairperson**, Skin Toxicology Section at The National Society of Toxicology, March 2002, Nashville, TN.

**Councilor** of the In Vitro Specialty Section of The National Society of Toxicology (2003)

**Member**, National Institute of Health Sciences (NIEHS) Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), Federal Committee that is advisory to the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), and to the National Toxicology Program (NTP). This committee provides external scientific advice and advises on priorities and directives related to the development, validation, scientific review, and regulatory acceptance of new or revised toxicological test methods and on ways to foster communication and partnerships with interested parties. (July 2002- June 2006)

**Chairperson and Organizer** for The National Society of Toxicology 42nd Annual Meeting, Continuing Education Course entitled “Cutaneous Toxicity-Current Methods and Concepts in Safety Evaluation and Relevance to Human Exposure” March 9, 2003, Salt Lake City, UT.

**Vice-President** of the Dermal Toxicology Specialty Section of The National Society of Toxicology (2003- 2004)

**Chair** of the Dermal Toxicology Specialty Section Scientific Program Committee (2003-2004)

**President** - Dermal Toxicology Specialty Section of The National Society of Toxicology (2004-2005)

**Councilor** - Dermal Toxicology Specialty Section of The National Society of Toxicology (2005-2006)

**Chairperson**, Skin Toxicology Section, The National Society of Toxicology, March 2004, Baltimore, MD.

**Member**, National Society of Toxicology Chemical/Biological Terrorism Resource Registry (2004)

**Elected as Vice-President**, North Carolina State University Chapter of the Society of Sigma Xi, The Scientific Research Society (2004-2005)

Board of Publication for the National Society of Toxicology – Journal Negotiation Team (2004-2005)

Society of Toxicology Chemical/ Biological Terrorism Resource Registry (2004-2006)

**Co-Chair** of the Communications Committee for the Dermal Specialty Section of the National Society of Toxicology (2004-2005)

**Chair** - Dermal Exposure to Nanomaterials, International Life Sciences Institute (ILSI)- Risk Sciences Institute. Characterizing the potential human health effects from exposure to nanomaterials. (2004-2005)

**Co-Chair** of Toxicology of Nanomaterials-Organism-Specific and Tissue-Specific Responses, First International Conference on Nanotoxicology: Biomedical Aspects, Miami, FL, January, 2006.

**Chair and Organizer-Workshop**, The National Society of Toxicology 45<sup>th</sup> Annual Meeting, on “Screening Methods for Assessing Skin Toxicity of Nanomaterials”, March 6, 2006, San Diego, CA.

**Chair and Program Committee-** Toxicology of Nanomaterials Session, “Overcoming Obstacles to Effective Research Design in Nanotoxicology” April 25, 2006, Cambridge, MA.

**Chair** - Board of Publications for Toxicological Sciences for the Society of Toxicology (2006-2007)

Marketing Subcommittee Board of Publications of the Society of Toxicology (2006-2007)

**Chair-** Symposium XIX; “Toxicology Nanomedicine”, Second Annual Meeting of the American Academy of Nanomedicine, The National Academy of Sciences, Washington, DC, September 10, 2006.

**Chair-** North Carolina Chapter for the American Academy of Nanomedicine (2006).

**Chair-** Skin Toxicology Section at The National Society of Toxicology, March 27, 2007, Charlotte, NC.

**Chair and Program Committee-** Toxicology Session of the 2<sup>nd</sup> International Nanotoxicology Conference, Venice, Italy, April 19, 2007.

**Chair and Program Committee**, American Society for Pharmacology and Experimental Therapeutics (ASPET), part of the Experimental Biology Meeting, Washington, DC, April 29, 2007.



**Chair**-Young Scientist Workshop. Trailblazing the Skin Frontier: evidence base and opportunities, George Washington University, Washington, DC, August 11, 2007.

**Chairperson** - Annual Environmental Mutagen Society, Symposium on Nanoparticle Toxicology, Atlanta, Georgia, October 21, 2007.

**Chairperson**- Nanoparticles: Cellular and Organ Distribution Platform Session at the 47<sup>th</sup> Annual Meeting of the National Society of Toxicology, Seattle, WA., March 19, 2008.

**Chairperson**- Dermal Absorption and Skin Toxicity Session, at the 48<sup>th</sup> Annual Meeting of the National Society of Toxicology, Baltimore, MD, March 16, 2009.

**Discussion Leader** ‘Crossing the Epidermis and Other Barriers: Lessons from Lung, Gastrointestinal, and Blood Brain Barriers’. Gordon Research Conference on the “Barrier Function of Mammalian Skin” Waterville Valley, New Hampshire, August 9-14, 2009.

**Chairperson**- 6<sup>th</sup> Key Symposium on Nanomedicine for the Journal of Internal Medicine, Toxicology and Risk Assessment, Grand Hotel Saltsjöbaden, Stockholm, Sweden, September 9-11, 2009.

**Co-Chair**- In Vitro Breakout Session- National Nanotechnology Initiative (NNI) Workshop on Nanomaterials and Human Health & Instrumentation, Metrology, and Analytical Methods for the National Nanotechnology Coordination Office, Arlington, VA. November 17-18, 2009.

**Co-Chair**- Advances in Dermal Toxicology, the 49<sup>th</sup> Annual Meeting of the National Society of Toxicology, Salt Lake City, Utah, March 8, 2010.

**Panel Member**- Graduate Women in Science, National Institutes of Health, Research triangle Park, NC, April 21, 2010.

**Chairperson**- the Dermal Toxicology Session at The 50<sup>th</sup> Annual Meeting of the National Society of Toxicology Meeting, March 7, 2011, Washington, DC.

**Elected** to the American College of Toxicology Outreach Committee- 2011

## **CONSULTANT AND ADVISORY BOARDS:**

American Cyanamid, Battelle Memorial Institute, Servier of France, Becton Dickinson and Company, Olin Biocides, Cellegy Pharmaceuticals, The Procter and Gamble Company, Proteque, Sinclair Research, BASF-RTP,N.C., BASF-Germany, FibroGen, Skin Science Institute, Connetics- Scientific Advisory Board (bought out by Stiefel and then GlaxoSmithKline)  
nanoTox, Inc. - Scientific Advisory Board  
North Carolina Center of Innovation for Nanobiotechnology (COIN) - Scientific Advisory Board  
International Alliance for NanoEHS Harmonization- Partner

## **EDITORIAL RESPONSIBILITIES:**

**Chair, National Society of Toxicology, Board of Publications for Toxicological Sciences** (2006-2007)  
**National Society of Toxicology, Board of Publications** (2003-2007)  
**Associate Editor-Interdisciplinary Reviews- WIREs in Nanomedicine and Nanobiotechnology** (2005-2008 planning stages), 2008- present.  
**Associate Editor-Materials Science and Engineering C: Materials for Biological Applications** (2007-present)  
**Editorial Board for Nanomedicine** (2010-present)  
**Editorial Board for Nanotoxicology** (2009-present)

**Editorial Board for the Journal of Applied Toxicology** (2000-present)  
**Editorial Board for Cutaneous and Ocular Toxicology** (2001-present)  
**Editorial Board for Toxicology Mechanisms and Methods** (2002-present)  
**Editorial Board for Toxicology in Vitro** (2003-present)  
**Editorial Board** for Fundamental and Applied Toxicology (1992-1998)  
**Editorial Board** for Toxicological Sciences (1998-2000)  
**Editorial Board** for Toxicology Methods (1997-2001)

**Guest Editor** for a topical issue entitled "Histological Aspects of Dermatotoxicology" published in *Microscopy Research and Technique*, Wiley-Liss, NY. (1995-1996)

**Reviewer for the following Journals:**

ACS Nano, Advanced Drug Delivery Reviews, American Journal of Veterinary Research, Archives of Dermatology, Archives of Dermatological Research, Archives of Toxicology, Biochemical and Molecular Toxicology, Carbon, Cell Transplantation, Chemico-Biological Interactions, Controlled Release, Cutaneous and Ocular Toxicology, Ecotoxicology and Environmental Safety, Environmental Health Perspectives, Environmental Molecular Mutagenesis, Environmental Science and Technology, Environmental Toxicology and Pharmacology, Experimental Dermatology, Expert Opinion in Drug Metabolism and Toxicology, Fundamental and Applied Toxicology, In Vitro- (cellular & developmental biology), In Vitro and Molecular Toxicology, In Vitro Toxicology, Journal of the American College of Toxicology, Journal of Applied Toxicology, Journal of Biomedical Nanotechnology, Journal of Biomedicine and Biotechnology, Journal of Drug Delivery, Journal European Journal of Pharmaceutics and Biopharmaceutics, Journal of Hazardous Materials, Journal of Inorganic Biochemistry, Journal of Investigative Dermatology, Journal of Materials Research, Journal of Pharmaceutical Sciences, Journal of Pharmacy and Pharmacology, Journal of Toxicology and Environmental Health, *Microscopy Research and Technique*, Nano Letters, Nature Nanotechnology, Pesticide Biochemistry and Physiology, Pharmaceutical Research, Scanning Electron Microscopy International, Skin Pharmacology and Physiology, The Annals of Occupational Hygiene, Toxicology and Applied Pharmacology, Toxicology In Vitro, Toxicology Mechanisms and Methods, Toxicology Methods, Toxicological Sciences, Toxicology Letters, The Veterinary Journal

**NATIONAL AND INTERNATIONAL PANELS:**

Development of In Vitro Alternatives for Dermal Irritation Testing. Industrial In Vitro Toxicology Group, Cincinnati, OH. May 22, 1992.

U.S. Army Medical Research and Development Command, Medical Defense Bioscience Review on Vesicating Agents. Baltimore, MD. May 10, 1993.

NTP Advisory Committee on Alternative Toxicological Methods (ACATM) Ad hoc advisor (2001); Guidance document on using in vitro data to estimate in vivo starting doses for acute toxicity, Report of the international workshop on in vitro methods for assessing acute systemic toxicity, toxicogenomics as an alternative toxicological test method: priorities for applications and their validation. This advisory committee has been established by the Department of Health and Human Services and it provides advice on the activities and priorities of the NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) and the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) (2001).

National Institute of Environmental Health Sciences (NIEHS) Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), Federal Committee that is advisory to the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), and to the National Toxicology Program (NTP). This committee provides external scientific advice and advises on priorities and directives related to the development, validation, scientific review, and regulatory acceptance of new or revised toxicological test methods and on ways to foster communication and partnerships with interested parties. (July 2002- June 2007).

United States Environmental Protection Agency (EPA), Scientific Advisory Panel Federal Insecticide, Fungicide and Rodenticide Act, (FIFRA SAP, 2004). This panel serves as the primary scientific review mechanism that provides advice, information, and recommendations to the agency on pesticides and pesticide-related issues regarding the impact of regulatory actions on health and the environment. Consultation on Dermal Sensitization Issues for Exposures to Pesticides. Children's exposure to hexavalent chromium and allergic contact dermatitis.

Health and Environmental Sciences Institute (HESI), International Life Sciences Institute (ILSI) Nanomaterial Safety Subcommittee (2004). Exposure Pathways.

2<sup>nd</sup> Annual National Academies Keck Futures Initiative (NAKFI) - Designing Nanostructures at the Interface between Biomedical and Physical Systems. (September 2004) Selected as one of the top 100 researchers to discuss ideas related to Nanotechnology.

National Institute of Environmental Health Sciences (NIEHS) Special Emphasis Superfund Basic Research and Training Program Panel Reviewer. (October 2004-2005).

Developmental Approaches for Evaluation of Toxicological Interactions of Nanoscale Materials. Focus group on "Exposure Protocols". Focus group on "Issues Assessing Dermal Uptake and Toxicity of Nanoscale Materials". ILSI/HESI (November, 2004)

2<sup>nd</sup> Annual National Academies Keck Futures Initiative (NAKFI) Designing Nanostructures at the Interface between Biomedical and Physical Systems. Use of biological systems to build a factory to synthesize products. (November, 2004)

United States Environmental Protection Agency (EPA) Advisory Panel (2004-present)

International Life Sciences Institute (ILSI)- Risk Sciences Institute Nanomaterial Toxicity Screening Working Group. Characterizing the potential human health effects from exposure to nanomaterials. (November 2004-June 2005) This generated a report from the ILSI Research Foundation/ Risk Science Institute entitled "*Principles for characterizing the potential human health effects from exposure to nanomaterials: elements of a screening strategy*". 2005

National Institute of Health NIH, Bioengineering Research Partnerships Special Emphasis Panel (August, 2005)

Colgate-Palmolive Grants for Alternatives Research, In Vitro Specialty Section Expert Review Panel (2005-2006)

Woodrow Wilson International Center for Scholars Working Conference on Engineered Nanomaterials and Human Health. Panel Member on Emerging Nanotechnologies. (April, 2006)

International Council on Nanotechnology (ICON)- International Nanomaterial Environmental Health and Safety (Nano EHS) Research Needs Assessment. Swiss Reinsurance Company Center Global Dialogue Council in Ruschlikon, Switzerland. (June 5-7, 2007)

Health and Environmental Sciences Institute (HESI) Nanomaterial Environmental, Health, and Safety Project Committee. (November 7-8, 2007).

The National Academies, National Research Council Committee for Review of the Federal Strategy to Address Environmental Health and Safety Research Needs for Engineered Nanoscale Materials. Washington, DC. (March 31- April 1, 2008)

NATO Advanced Research Workshop on Nanomaterials: Environmental Risks and Benefits and Emerging Consumer Products, Human Health Risk Working Group, Faro, Portugal. (April 27-30, 2008)

The National Academies, National Research Council Committee for Review of the Federal Strategy to Address Environmental, health, and Safety Research Needs for Engineered Nanoscale Materials. Washington, DC. (May 5-6, 2008)

International Life Science Institute (ILSI)- Health and Environmental Sciences Institute (HESI). Nanomaterial Environmental Health and Safety Project Committee. Washington, DC. (May 8, 2008)

Seventh Framework Programme Theme- Nanosciences, Nanotechnologies, Materials and New Production Technologies. Collaborative Project US Panel Member, Swiss Reinsurance Company Center Global Dialogue Council in Ruschlikon, Zurich, Switzerland. (September 10-11, 2008).

Indian-US Government -Science & Technology Forum (IUSSTF), Smithsonian Institution in Washington, DC. Expert Review Panel for Nanomaterial Applications in Science, Engineering and Medicine. (March, 2009).

United States Environmental Protection Agency, Nanomaterial Case Studies Workshop: Nanoscale Titanium Dioxide in Water Treatment and in Topical Sunscreens. (September 29-30, 2009).

Seventh Framework Programme Theme- Nanosciences, Nanotechnologies, Materials and New Production Technologies. Collaborative Project US Panel Member, NANOMMUNE, Hotel Skepparholmen, Stockholm, Sweden. (September 12-13, 2009).

Invited Expert - 2009 National Nanotechnology Initiative (NNI). Workshop on Nanomaterials and Human Health & Instrumentation, Metrology, and Analytical Methods. Nanoscale Science, Engineering, and Technology Subcommittee of the National Science and Technology Council Executive Office of the President, Arlington, VA. Session Chair, (November 17-18, 2009).

International Alliance for NanoEHS Harmonization. Partner and Collaborator. (2010-present)

Seventh Framework Programme Theme- Nanosciences, Nanotechnologies, Materials and New Production Technologies. Collaborative Project US Panel Member, NANOMMUNE, Karolinska Institutet (June 14-17, 2011).

## **Organized National and International Workshops, Symposium Proceedings and Continuing Education Courses:**

Monteiro-Riviere NA, Riviere JE (Eds.): Frontiers in *In Vitro* and *In Vivo* Assessment of Cutaneous Toxicity Models for Risk Assessment. Continuing Education Course Syllabus for the 37th Annual Meeting of The Society of Toxicology, Seattle, WA, March, 1998.

Monteiro-Riviere NA, Auletta CS (Eds.): Current Methods and Concepts in Safety Evaluation; Relevance to Human Exposure. Continuing Education Course Syllabus for the 42nd Annual Meeting of The Society of Toxicology, Salt Lake City, UT, March, 2003.

Monteiro-Riviere NA. “Conducting a Comprehensive Toxicological and Safety Evaluation on Nanomaterials: Current Challenges and Data Needs”, Dermal Exposure Route for Evaluating Nanomaterials. The 44<sup>th</sup> Annual Meeting of the National Society of Toxicology, New Orleans, LA, March 9, 2005.

Monteiro-Riviere NA. Workshop Session on “Skin Model Selection for Safety Assessment of Topical Drug Products: Regulatory and Industry Perspectives”. Skin Model Selection Between Species and Abnormal Skin: Morphology, Dermal Drug Delivery, and Overall Barrier Function. The 44<sup>th</sup> Annual Meeting of the National Society of Toxicology, New Orleans, LA, March 9, 2005.

Monteiro-Riviere NA. Workshop Session on “Swine in Biomedical Research- Update on Animal Models”. The Pig as a Model for Human Skin Research. The 56<sup>th</sup> National Meeting of the American Association for Laboratory Animal Science. St Louis, MO, November 7, 2005.

Monteiro-Riviere NA. and Cunningham, MJ. Workshop Session on “Screening Methods for Assessing Skin Toxicity of Nanomaterials.” The 45<sup>th</sup> Annual Meeting of the National Society of Toxicology. San Diego, CA, March 6, 2006.

Monteiro-Riviere NA. “Assessing Nanomaterial Interactions in Skin”. The 45<sup>th</sup> Annual Meeting of the National Society of Toxicology. San Diego, CA, March 6, 2006.

Monteiro-Riviere, NA. “Dermal Route as a Potential Route for Nano Exposure”. The First International Nanotoxicology Conference on Overcoming Obstacles to Effective Research Design in Nanotoxicology. Cambridge, MA, April 25, 2006.

**(Program Committee, Panel Member, and Discussion Facilitator)**

Monteiro-Riviere, NA. “Assessing Dermal Exposure to Nanomaterials”. The Second International Nanotoxicology Conference on “Overcoming Obstacles to Effective Research Design in Nanotoxicology”. Venice, Italy, April 19-21, 2007. **(Program Committee, Organizer, Session Chair)**

Monteiro-Riviere NA. Nanopharmacology and Toxicology Session, “Toxicology of Nanomaterials-Biological Effects of Nanomaterials in Skin”. Experimental Biology Annual Meeting -American Society

for Pharmacology and Experimental Therapeutics (ASPET), Washington, DC, April 29, 2007. (**Program Committee, Chair of Session**)

Monteiro-Riviere NA. Workshop Session on Dermal Toxicological Assessment of Nanomaterials and Nanodevices. "Study Design Considerations for the Evaluation of Skin Exposures and Biodistribution to Engineered Nanoparticles", The 47<sup>th</sup> Annual Meeting of the National Society of Toxicology, Seattle, Washington. March 18, 2008. (**Program Committee**)

Monteiro-Riviere NA. Nanocarbons: from Physicochemical and Biological Properties to Biomedical and Environmental Effects. Nano Carb09, European Science Foundation Hotel Villa Mare, Acquafredda di Maratea, Italy, September 8-13, 2009. (**International Scientific Committee**)

Monteiro-Riviere NA. Key Symposium on Nanomedicine for the Journal of Internal Medicine, Toxicology and Risk Assessment, Grand Hotel Saltsjöbaden, Stockholm, Sweden, September 9-11, 2009. (**Chair of Session**)

Monteiro-Riviere NA. 2009 Summit: Environmentally Responsible Development of Nanotechnology, North Carolina Biotechnology Center, Research Triangle Park. October 8-9, 2009. (**Planning Committee**)

Monteiro-Riviere NA. Characterization of Nanoparticles and Microparticles Using State of the Art Techniques. Aspects of Characterization and Toxicology of Nanoparticles. Controlled Release Society Educational Workshop. Portland, Oregon, July 10, 2010.

## **GRANT REVIEWS:**

Reviewer for North Carolina Board of Science and Technology Proposals (Ad hoc) (1991)

Reviewer for the American Institute of Biological Sciences (1995-2002)

Reviewer for North Carolina State University Faculty Research and Professional Development Fund (1997, 1998, 1999, 2000)

Reviewer for United States Army Medical Research and Materiel Command (1995-present)

Reviewer for National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (2001)

NIEHS Special Emphasis Superfund Basic Research and Training Program Panel. (October 2004-2005).

National Institutes of Health - Bioengineering Research Partnerships Special Emphasis Panel.

(August 2005).

Colgate-Palmolive Grants for Alternatives Research, In Vitro Specialty Section Expert Review Panel (2005-2006)

External Reviewer for Tenure and Promotion for Full Professor for UNC School of Science and Engineering, Chapel Hill, NC April, 2002.

External Reviewer for Tenure and Promotion for Full Professor for UNC School of Science and Engineering, Chapel Hill, NC October, 2007.

External Reviewer for Tenure and Promotion for Professor for The University of Faisalabad, Department of Veterinary Physiology and Pharmacology, Pakistan, November, 2007.

External Review Thesis Committee Member for University of Pune, Centre for Nanobiosciences, Agharkar Research Institute, February, 2009.

Indian-US Government -Science & Technology Forum (IUSSTF), Smithsonian Institution in Washington, DC. Expert Grant Review Panel for Nanomaterial Applications in Science, Engineering and Medicine, March, 2009-2010.

External Expert Opinion Panel, for the University of Agriculture, Faisalabad, Pakistan. September 2009.

Science Foundation of Ireland, President of Ireland Young Research Award (PIYRA) Reviewer, June 2010.

External Expert Opinion Panel, for the University of Agriculture, Faisalabad, Pakistan. October 2010.

### **Professional Societies:**

American Society of Nanomedicine (ASNM) 2009

American College of Toxicology (ACT) 2006

Elected as a Fellow-The Academy of Toxicological Sciences (ATS) 2004; recertified 2010

Society for Investigative Dermatology (SID)

Society of Toxicology (SOT)

Society of Toxicologic Pathologists (STP)

American Association of Pharmaceutical Scientists (AAPS)

American Association of Veterinary Anatomists (AAVA)

Federation of American Societies For Experimental Biology (FASEB)[American Association of Anatomists (AAA)]

American Chemical Society (ACS)

World Association of Veterinary Anatomists (WAVA)

American College of Forensic Examiners (ACFE), Lifetime Fellow

Sigma Xi Scientific Research Society- 1981

North Carolina Society of Toxicology (NCST)

Southeast Electron Microscopy Society (SEEMS)

N.C. Society for Electron Microscopy and Microbeam Analysis (NCSEMMA)

Electron Microscopy Society of America (EMSA) now Microscopy Society of America (MSA); Administered The National Board for Certification in Electron Microscopy. June 10, 1994; November 3, 1994

### **North Carolina State University Committees:**

NCSU Chancellor's Nanotechnology / Leadership Committee 2007- present

University Hazardous Materials Committee (1990-2000), **Vice Chair Elect**, 1996, **Chairperson**, 1997-1998.

University Occupational Health and Safety Council, **Vice Chair Elect**, 1998-1999; **Chair** (1999-2000), (2005-2006), (2006-2007), (2007-2008), (2008-2009) (2010-2011)

University Especially Hazardous Materials Committee (1993-1997)

Toxicology Faculty Standing Committee

Burrough's Wellcome Distinguished Lecture Committee (1987-1991), **Chairman**

Executive Committee - North Carolina State University Toxicology Program (1989-1991)

Toxicology Faculty Nomination Committee (1989)

Sigma Xi Liaison Officer (1994-present)

North Carolina State University Chapter of Sigma Xi, **Secretary** 1998, **Treasurer** 1999-2000;

Elected to the Sigma Xi membership committee (2000, 2001, 2002), **Chairperson** 2001, 2002, 2003, 2004.

Admissions Committee for NCSU-Toxicology Department (1995-2000); **Chairman** (1996, 1997, 1998, 1999)

University Resource Faculty Committee (2001-2003)

University Research Committee (1997-2000)

Sigma Xi, Ad Hoc Committee (2002-2003)

Elected **Vice-President** of the North Carolina State University Chapter of the Society of Sigma Xi, The Scientific Research Society (2004-2005)

Chair of the Sigma Xi Nominating Committee (2005-2006)

Served on several University Search Committees for CVM and CALS

### **North Carolina State University, College of Veterinary Medicine Committees:**

Ad hoc Committee - Graduate student space (1989-1991)

College of Veterinary Medicine Toxicology Faculty Representative (1989)

Adjunct Faculty Liaison - NCSU Department of Toxicology (1993-1995)

College of Veterinary Medicine Safety Committee (1991- present),

**Chairperson**, in 1998, 1999, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011

College of Veterinary Medicine Library and Education Resources Committee (1985-1987) (1987-1989)

(1989-1991) Elected **Chairman** (1990)

(1991-1993) Elected **Chairman**

(1994-1998)

College of Veterinary Medicine Admissions Committee (1997-1998) Adjunct interviewer for CASS department

College of Veterinary Medicine, Research Forum Judge, 1995, 2000, 2004

Elected to The Committee on Committees (1998-2000), **Chairperson**

Elected to the College of Veterinary Medicine College Reappointment, Promotion, and Tenure Committee (CRPT) (2000-2001)

CVM Faculty / Student Mentorship Program 1997- present

CVM Departmental and Toxicology Program Faculty Search Committees

### **INVITED PRESENTATIONS- KEYNOTE SPEAKER:**

1. Monteiro-Riviere NA: Continuing Education Seminar, Purdue University, West Lafayette, IN. June 5-8, 1980.
2. Monteiro-Riviere NA: "Formaldehyde Toxicity," Imperial Chemical Industries, Macclesfield Cheshire, England, August 10, 1984.
3. Monteiro-Riviere NA: "Ultrastructural identification of three new cell types in the rat nasal mucosa," Burroughs Wellcome, Research Triangle Park, N.C., October 29, 1984.
4. Monteiro-Riviere NA: "Structure and Barrier Function of Skin," Becton Dickinson and Company, Research Triangle Park, N.C. March 10, 1988.
5. Monteiro-Riviere NA: "Histology of Electrically Produced Skin Damage," Becton Dickinson and Company, Research Triangle Park, N.C. March 10, 1988.



6. Monteiro-Riviere NA: "A New Skin Model for Percutaneous Toxicology," The Procter and Gamble Company, Miami Valley Laboratories, Cincinnati, Ohio. July 14, 1988.
7. Monteiro-Riviere NA: "Cutaneous Laser Doppler Velocimetry in Nine Mammalian Species". First World Congress of Veterinary Dermatology, Dijon, France. September 29, 1989.
8. Monteiro-Riviere NA: "Histopathologic Evaluation Relevant to Development of Dermal Irritation Alternatives. "Development of In Vitro Alternatives for Dermal Irritation Testing. Industrial In Vitro Toxicology Group, Cincinnati, OH. May 22, 1992. **(Panel Member)**.
9. Monteiro-Riviere NA: "Novel Concepts, Research Strategies and Model Systems in Cutaneous Pharmacology and Toxicology." American Cyanamid, Pearl River, New York. October 14, 1992.
10. Monteiro-Riviere NA: "A new hypothesis for the mechanism of local enhanced delivery of topically applied drugs to the underlying musculature." American Association of Pharmaceutical Scientists, San Antonio, TX, November 16, 1992.
11. Monteiro-Riviere NA: "Vesicating Agents." U.S. Army Medical Research and Development Command, Medical Defense Bioscience Review, Baltimore, MD. May 10, 1993. **(Panel Member)**.
12. Monteiro-Riviere NA: "Current Concepts in In Vitro Cutaneous Toxicology". Food and Drug Administration, Department of Health and Human Services, Laurel, MD. May 12, 1993.
13. Monteiro-Riviere NA: "Biochemical Mechanisms of Skin Toxicity." Gordon Research Conference on the Barrier Properties of Mammalian Skin, Plymouth, NH, August 17, 1993.
14. Monteiro-Riviere NA: "Biochemical and Morphological Aspects of Iontophoresis in Pig Skin", Becton Dickinson and Company, Research Triangle Park, NC, January 12, 1994.
15. Monteiro-Riviere NA: "Cutaneous Toxicology of Topically Applied Chemicals: In Vitro and In Vivo Studies". The University of Georgia, Athens, GA, July 19, 1994.
16. Monteiro-Riviere NA. "Anatomical Techniques for Spatial Localization of Topically Delivered Drugs in Skin". Institute de Recherches Internationales Servier, Paris, France, September 26, 1994.
17. Monteiro-Riviere NA. "Cutaneous Toxicity of Sulfur Mustard". United States Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD, March 8, 1995.
18. Monteiro-Riviere NA. "Transdermal Delivery Systems". American Chemical Society Meeting, Conference on Formulations and Drug Delivery, Boston, MA, October 12, 1995.
19. Monteiro-Riviere NA. "The Pig as a Model for Cutaneous Pharmacology and Toxicology Research". International Symposium on Swine in Biomedical Research, College Park, MD, October 24, 1995. **(Organizing and Scientific Committee and Chairman of the Toxicology Section)**.

20. Monteiro-Riviere NA. "Piel De Ganado Porcino Como Modelo De Estudio De Piel Humana". Pecuaris Laboratorios, Obregon, Sonora, Mexico, November 6, 1995.
21. Monteiro-Riviere NA. "Piel De Ganado Porcino Como Modelo De Estudio De Piel Humana". Pecuaris Laboratorios, Guadalajara, Jalisco, Mexico, November 7, 1995.
22. Monteiro-Riviere NA. "Piel De Ganado Porcino Como Modelo De Estudio De Piel Humana". Pecuaris Laboratorios, Torreon, Mexico, November 8, 1995.
23. Monteiro-Riviere NA. "Piel De Ganado Porcino Como Modelo De Estudio De Piel Humana". Pecuaris Laboratorios, Celaya, Guanajuato, Mexico, November 10, 1995.
24. Monteiro-Riviere NA. "Characterization of Cutaneous Toxicity in In Vitro and In Vivo Models". Toxicology Program, North Carolina State University, Raleigh, N.C. March 4, 1997.
25. Monteiro-Riviere NA. "Comparison of an In Vitro Human Skin Equivalent Model to Normal Human Skin for Dermatological Research". The Fifth International Conference in Perspectives in Percutaneous Penetration, La Grande-Motte, France, April 3, 1997. (Selected presentation)
26. Monteiro-Riviere NA. "Epidermal Cytotoxicity of Topically-Applied Chemical Mixtures In Perfused Porcine Skin". The 7th European Association for Veterinary Pharmacology and Toxicology International Congress, Madrid, Spain, July 9, 1997.
27. Monteiro-Riviere NA. Debate Team: "Validity of In Vitro Models". The 1997 Gordon Research Conference on "Barrier Function of Mammalian Skin", Tilton, NH, August 13, 1997.
28. Monteiro-Riviere NA. "Prevention and Treatment of Skin Irritation". North American Contact Dermatitis Group, American Academy of Dermatology, Orlando, Fl, February 25, 1998.
29. Monteiro-Riviere NA. "In Vitro and In Vivo Assessment of Cutaneous Toxicity". The 37th Annual Meeting of The National Society of Toxicology, Seattle, WA, March 1, 1998.
30. Monteiro-Riviere NA. "Biological Considerations in Model Selection". The 37th Annual Meeting of The National Society of Toxicology, Seattle, WA, March 1, 1998.
31. Monteiro-Riviere NA. "Dermal Biology of Topical Zinc Preparations". Olin Biocides, Cheshire, CT, August 31, 1998.
32. Monteiro-Riviere NA. "Reduction of Irritation By a Non-Corticosteroid Topical Agent". The Skin Disease Education Foundation, 23<sup>rd</sup> Annual Hawaii Dermatology Seminar. Maui, HI, February 17, 1999.
33. Monteiro-Riviere NA. "The Pig as a Model for Skin Irritation". Cellegy Pharmaceuticals Inc., South San Francisco, CA, October 15, 1999.

34. Monteiro-Riviere NA “Efficacy of a Non-Corticosteroid Lotion to Reduce Sodium Lauryl Sulfate Induced Irritant Dermatitis”. The 12<sup>th</sup> International Contact Dermatitis Symposium, San Francisco, CA, October 16, 1999.
35. Monteiro-Riviere NA. “Use of the Pig as a Model to Assess Cutaneous Toxicity and Inflammation of Jet Fuels.” The 8<sup>th</sup> International Congress of the European Association for Veterinary Pharmacology and Toxicology, Jerusalem, Israel, July 31, 2000.
36. Monteiro-Riviere NA. “Systemic Pyridostigmine Suppresses Inflammatory Cytokines Released After Topical Permethrin and Deet Exposure”. Conference on Illnesses Among Gulf War Veterans: A Decade of Scientific Research. Washington, DC, January 25, 2001.
37. Monteiro-Riviere NA. “Anatomical Considerations for Model Selection”. The 42<sup>nd</sup> Annual Meeting of The National Society of Toxicology, Salt Lake City, Utah, March 9, 2003.
38. Monteiro-Riviere NA “Dose Related Interleukin-8 Release From Epidermal Keratinocytes After Exposure to Jet Fuel Aromatic Hydrocarbons”. The 9<sup>th</sup> International Congress of the European Association for Veterinary Pharmacology and Toxicology, Lisboa, Portugal, July 16, 2003.
39. Monteiro-Riviere NA. “Evaluation of Nanoparticle Interactions with Skin”. United States Environmental Protection Agency 2004 Nanotechnology Science To Achieve Results Workshop. Nanotechnology and the Environment II. Philadelphia, PA, August 18-20, 2004.
40. Monteiro-Riviere NA. “Intercellular Localization of Multi-Walled Carbon Nanotubes in Human Epidermal Keratinocytes”. 2<sup>nd</sup> Annual National Academies Keck Futures Initiative (NAKFI) Designing Nanostructures at the Interface Between Biomedical and Physical Systems. Irvine, CA., November 13-17, 2004.
41. Monteiro-Riviere NA. “Overview of Dermal Absorption of Nanomaterials and Testing Guidelines”. Nanomaterial Toxicity Screening Expert Working Group – International Life Science Institute/Risk Science Institute, Washington, DC, February 23-25, 2005.
42. Monteiro-Riviere NA. “Conducting a Comprehensive Toxicological and Safety Evaluation on Nanomaterials: Current Challenges and Data Needs”, Dermal Exposure Route for Evaluating Nanomaterials. The 44<sup>th</sup> Annual Meeting of the National Society of Toxicology, New Orleans, LA, March 9, 2005.
43. Monteiro-Riviere NA. “Skin Model Selection for Safety Assessment of Topical Drug Products: Regulatory and Industry Perspectives”. Skin Model Selection Between Species and Abnormal Skin: Morphology, Dermal Drug Delivery, and Overall Barrier Function. The 44<sup>th</sup> Annual Meeting of the National Society of Toxicology, New Orleans, LA, March 9, 2005.
44. Monteiro-Riviere NA. “Multi-Walled Carbon Nanotube Exposure in Human Epidermal Keratinocytes: Localization and Proteomic Analysis”. Section of Industrial and Engineering Chemistry, The 229<sup>th</sup> American Chemical Society National Meeting, San Diego, CA, March 13-17, 2005.

45. Monteiro-Riviere NA: "Dermal Exposure Route for Nanomaterials". The Procter and Gamble Company, Miami Valley Laboratories, Cincinnati, Ohio, July 26, 2005.
46. Monteiro-Riviere NA: "Nanomaterials in the Environment". The North Carolina State University Emerging Science and Technology Outreach Program, Raleigh, NC, July 28, 2005.
47. Monteiro-Riviere NA: "Nanomaterial Interactions in Skin- Toxicology in Nanomedicine". The First Annual Meeting of the American Academy of Nanomedicine, Johns Hopkins University Medical Center, Baltimore, MD, August 16, 2005.
48. Monteiro-Riviere NA: "Biological Effects of Nanomaterials in Skin- Nano Health and Environmental Impact". The Center for Biological and Environmental Nanotechnology, The Associated Nanotechnology Congress, Rice University, Houston, TX, October 11, 2005.
49. Monteiro-Riviere NA and Riviere JE: "Environmental Impact on Nanomaterials" First North Carolina State Workshop on Nanotechnology for Energy and Environment. Raleigh, NC, October 26, 2005.
50. Monteiro-Riviere NA. "Nanoparticle Interactions with Skin". United States Environmental Protection Agency 2005-Nanotechnology and the Environment: Applications and Implications Progress Review Workshop III. Arlington, VA, October 27, 2005.
51. Monteiro-Riviere NA. "Swine as a Dermal Model". The 56<sup>th</sup> National Meeting of the American Association for Laboratory Animal Science. St Louis, MO, November 7, 2005.
52. Monteiro-Riviere NA. "Interactions between Nanomaterials, Organisms and the Environment-Summary of Toxicological Studies". The Franco- American Workshop for Nanotechnologies for a Sustainable Environment, Rice University, Houston, TX, December 15, 2005.
53. Monteiro-Riviere NA. "Biological Effects of Nanomaterials in Skin". North Carolina Nanobiotechnology Conference, North Carolina Biotechnology Center, Research Triangle Park, NC, January 20, 2006. **(Selected to represent NCSU)**
54. Monteiro-Riviere NA. "Skin Penetration, Cellular Uptake, Cytotoxicity, Proteomic Analyses, and Inflammatory Potential of Fullerenes, Multi-Walled Carbon Nanotubes and Quantum Dots". First International Conference on Nanotoxicology: Biomedical Aspects, Miami, FL, January 31, 2006.
55. Monteiro-Riviere NA. "Screening Methods for Assessing Skin Toxicity of Nanomaterials." The 45<sup>th</sup> Annual Meeting of the National Society of Toxicology. San Diego, CA, March 6, 2006.**(Organized and Chaired CE course)**
56. Monteiro-Riviere NA. "Assessing Nanomaterial Interactions in Skin". The 45<sup>th</sup> Annual Meeting of the National Society of Toxicology. San Diego, CA, March 6, 2006.**(Organized and Chaired CE course)**
57. Monteiro- Riviere NA. "Dermal Penetration of Nanomaterials". Connetics, Palo Alto, CA, April 18, 2006.

58. Monteiro-Riviere NA. "Dermal Route as a Potential Route for Nano Exposure". Overcoming Obstacles to Effective Research Design in Nanotoxicology, Cambridge, MA, April 25, 2006. **(Program Committee, Panel Member, and Discussion Facilitator)**
59. Monteiro-Riviere NA. "Nanomaterials in Skin: Should We Care?" Regional Industrial Hygiene Group. United States Environmental Protection Agency, Research Triangle Park, NC, May 10, 2006.
60. Monteiro-Riviere NA. "Nanomaterial Interactions with Skin". Biomedical Engineering Seminar Series, UNC /NCSU, Chapel Hill, NC, June 16, 2006.
61. Monteiro-Riviere NA. "Nanotechnology: Benefits and Risks". North Carolina Program Seminar Series, North Carolina State University, Raleigh, NC, August 30, 2006.
62. Monteiro-Riviere NA. "Nanomaterial Toxicity in Skin". Second Annual Meeting of the American Academy of Nanomedicine, The National Academy of Sciences, Washington, DC, September 10, 2006.
63. Monteiro-Riviere NA. "Physicochemical Characteristics of Nanoparticles That Determine Their Potential For Toxicity", Colloquium NIS- Centro G. Scansetti, Universita di Torino, Torino, Italy, September 19, 2006. **(Plenary Speaker)**
64. Monteiro-Riviere NA. "Interactions of Fullerenes, Multi-Walled Carbon Nanotubes and Quantum Dots with The Skin", NanoTX'06 Nanotechnology Conference on The Promise of Tomorrow and The Business of Nanotechnology, Dallas TX, September 27, 2006.
65. Monteiro-Riviere NA. "Nanotechnology and Topical Drug Delivery", Connetics, Palo Alto, CA, October 24, 2006.
66. Monteiro-Riviere NA. "Evaluating the Human Hazards from Exposure to Nanomaterials- Assessing the Dermal Exposure to Nanomaterials". The 27<sup>th</sup> Annual Meeting of the American College of Toxicology, Indian Wells, CA, November 8, 2006.
67. Monteiro-Riviere NA. "Studies on Nanoparticle Interactions with Skin". US EPA, NSF, and NIOSH Nanotechnology Environmental Implications Progress Review Workshop, Arlington, VA, November 13, 2006.
68. Monteiro-Riviere NA. "Toxicology and Health Effects- Dermal Exposure of Nanomaterials". International Conference on Nanotechnology Occupational and Environmental Health and Safety (NOEHS), Cincinnati, Ohio, December 7, 2006.
69. Monteiro-Riviere NA. "Nanomaterials: Is Toxicology Really an Issue?" Frontiers in Environmental Health Sciences, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC, March 16, 2007.
70. Monteiro-Riviere NA. "Nanotoxicology-Dermal Effects", National Society of Toxicology, Dermal Specialty Section, Charlotte, NC, March 27, 2007.

71. Monteiro-Riviere NA. “Biodistribution of quantum dots nanoparticles in isolated perfused skin and in flow-through diffusion cells. The 2<sup>nd</sup> International Nanotoxicology Conference, Venice, Italy, April 19, 2007. (**Program Committee, Chair of Toxicology Session**)
72. Monteiro-Riviere NA. “Nanopharmacology and Toxicology”. Experimental Biology Annual Meeting, American Society for Pharmacology and Experimental Therapeutics (ASPET) Section, Washington, DC, April 29, 2007. (**Program Committee, Chair of Session**)
73. Monteiro-Riviere NA. “Toxicology of Nanomaterials- Biological Effects of Nanomaterials in Skin”. Experimental Biology Annual Meeting, American Society for Pharmacology and Experimental Therapeutics (ASPET) Section, Washington, DC, April 29, 2007. (**Program Committee, Chair of Session**)
74. Monteiro-Riviere NA. “Nanomaterial Interactions with Skin”, Purdue University, Department of Basic Medical Sciences, School of Veterinary Medicine/ Discovery Park, West Lafayette, Indiana, May 11, 2007. (**Outstanding Alumna Achievement Award**)
75. Monteiro-Riviere NA. “Assessing The Effects of Dermal Exposure to Nanomaterials”. Nanomaterials: Evaluating The Benefits and the Risks, International Congress of Toxicology, Montreal, Canada, **Symposium Speaker**, July 19, 2007.
76. Monteiro-Riviere NA. “Consequences of Affecting or Crossing the Skin Barrier-Dermal Effects of Nanomaterials and Other Topical Products”. The Gordon Research Conferences on the Barrier Function of Mammalian Skin, Newport, Rhode Island, August 8, 2007.
77. Monteiro-Riviere NA. “Risk and Opportunities: Nanomaterials: Is Toxicology Really an Issue”? Trailblazing the Skin Frontier: Evidence Base, Opportunities and Training. Post Gordon Research Conference, George Washington University, Washington, DC, August 11, 2007.
78. Monteiro-Riviere NA. “Comparative Model Selection Between Species and Abnormal Skin: Morphology, Dermal Drug Delivery, and Overall Barrier Function”. Young Scientist Workshop. Trailblazing the Skin Frontier: evidence base, opportunities and training. George Washington University, Washington, DC, August 11, 2007.
79. Monteiro-Riviere NA. “Pharmacokinetics and Biodistribution of Quantum Dots Nanoparticles in Isolated Perfused Skin”. US EPA Interagency Workshop on the Environmental Implications of Nanotechnology. Washington, DC, September 5, 2007.
80. Monteiro-Riviere NA. “Nanomaterials in Skin: Should We Care?” Wake Forest University Medical Center, Winston-Salem, NC, September 27, 2007.
81. Monteiro-Riviere NA. “Dermal Exposure to Nanomaterials”. The Environmental Mutagen Society 38<sup>th</sup> Annual Meeting, Atlanta, Georgia. October 21, 2007.
82. Monteiro-Riviere NA. “Evaluating Dermal Hazards Associated with Nanomaterials” HESI/ ILSI Health and Environmental Sciences Institute, Nanomaterial Environmental Health Project Committee, Washington, DC. November 7, 2007.

83. Monteiro-Riviere NA. "Nanomaterial Interactions with Skin". The 7<sup>th</sup> International Conference and Workshop on Biological Barriers and Nanomedicine- Advanced Drug Delivery and Predictive non in vivo Testing Technologies. University of Saarland, Saarbruecken, Germany. February 20, 2008. **(Plenary Speaker)**
84. Monteiro-Riviere NA. "Evaluating Dermal Hazards Associated with Nanomaterials". BASF- The Chemical Company, Ludwigshafen, Germany. February 22, 2008.
85. Monteiro-Riviere NA. "Study Design Considerations for the Evaluation of Skin Exposures and Biodistribution to Engineered Nanoparticles", The National Society of Toxicology 47<sup>th</sup> Annual Meeting, Seattle, WA. March 18, 2008.
86. Monteiro-Riviere NA. "Nanotechnology Hazards", North Carolina Nanotechnology Safety and Response Seminar, Sanford, NC. April 14, 2008. **(Distinguished Speaker)**
87. Monteiro-Riviere NA. "Nanomaterials: The Skin Show", Pharmacology/ Toxicology Colloquium, Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT. April 21, 2008. **((Distinguished Speaker))**
88. Monteiro-Riviere NA. "Nanotechnology Implications and Risks: Human Health". Assessment of Quantum Dot Penetration Into Intact, Tape-Stripped, Abraded and Flexed Skin". NATO Advanced Research Workshop on Nanomaterials. Faro, Portugal. April 28, 2008.
89. Monteiro-Riviere NA. "Evaluating Dermal Hazards Associated with Nanomaterials". Institute for Molecular and Nanoscale Innovation, Nanoscience Forum, Brown University, Providence, RI, May 7, 2008.
90. Monteiro-Riviere NA. "Dermal Hazards Associated with Nanomaterials". Environmental Health Sciences, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC, June 5, 2008.
91. Monteiro-Riviere NA. "Physicochemical Characteristics of Nanoparticle Interactions with Skin". The 9<sup>th</sup> Annual Meeting of Skin Forum, School of Pharmacy, University of London, London, England, June 26, 2008.
92. Monteiro-Riviere NA. "Assessment of Quantum Dot Nanoparticle Penetration in Human Skin". Advances in Nanomedicine, National American Chemical Society, Philadelphia, PA, August 18, 2008.
93. Monteiro-Riviere NA. "Nanotherapeutics: What's the "Big" Deal with "Nano". The Fourth International Conference on Antimicrobial Agents in Veterinary Medicine (AAVM), Prague, Czech Republic, August 25, 2008.
94. Monteiro-Riviere NA. "Comparative Aspects of Nanoparticle Penetration in Skin". The Second International Conference on Nanotoxicology, ETH- Swiss Federal Institute of Technology- Zurich, Zurich, Switzerland, September 8, 2008.
95. Monteiro-Riviere NA. "Dermal Hazards of Nanomaterials". Chemistry Department and Center of Nanoscience and Nanotechnology, National Chung Hsing University, Taichung, Taiwan. October 15, 2008. **(Distinguished Speaker)**

96. Monteiro-Riviere NA. "Absorption, Biological Interactions and Dermal Hazards of Nanomaterials". Chung Shan Medical University, College of Medicine, Department of Dermatology, Taichung, Taiwan. October 15, 2008. **(Distinguished Speaker)**
97. Monteiro-Riviere NA. "Dermal and Biological Interactions of Nanomaterials: Applications in Veterinary Medicine". College of Veterinary Medicine, National Chung Hsing University, Taichung, Taiwan. October 16, 2008. **(Distinguished Speaker)**
98. Monteiro-Riviere NA. "Evaluating the Dermal Hazards of Nanomaterials". Serendip's Program for Emulsion Days, New York, NY. November 14, 2008.
99. Monteiro-Riviere NA. "Pros and Cons of In Vitro Toxicity Assays for Nanomaterials". International Life Science Institute (ILSI)-Health and Environmental Sciences Institute (HESI)- Nanomaterial Environmental, Health and Safety Project Committee, Washington, DC. November 20, 2008.
100. Monteiro-Riviere NA. "Biological Interactions with Nanomaterials" Regional Workshop on the Responsible Development, Manufacture and Use of Nanomaterials". The Monterrey Technology Institute (ITESM), Tec de Monterrey, Monterrey, NL Mexico. December 9, 2008.
101. Monteiro-Riviere NA. "Introduction to Nanotoxicology: Nanotechnology in Foods", Mars Scientific Advisory Committee, Waldorf-Astoria, New York, NY, January 8, 2009.
102. Monteiro-Riviere NA. "Nanotoxicity: Toxicity and Issues of Exposure for Nanoparticles-Biological Interactions of Nanomaterials in Skin", Toxicology and Risk Assessment Conference, West Chester, Ohio. April 28, 2009.
103. Monteiro-Riviere NA. "Crossing the Epidermis and Other Barriers: Lessons from Lung, Gastrointestinal, and Blood Brain Barriers". Gordon Research Conference on the "Barrier Function of Mammalian Skin" Waterville Valley, New Hampshire. August 12, 2009.
104. Monteiro-Riviere NA. "Nanomaterials Integration into Products: Evaluating the Dermal Hazards Associated with Nanomaterials". 2009 Summit: Environmentally Responsible Development of Nanotechnology, North Carolina Biotechnology Center, Research Triangle Park, NC. October 8, 2009.
105. Monteiro-Riviere NA. "Evaluating the Dermal Hazards of Nanomaterials", The First Annual Conference of the American Society for Nanomedicine, Bolger Center, Potomac, MD. October 25, 2009.
106. Monteiro-Riviere NA "Experimental Models and Comparative Aspects of Topical Delivery" National Toxicology Program, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC. December 8, 2009.
107. Monteiro-Riviere NA. "Nanotechnology Risk and Regulation", Hazards of Working with Nanomaterials. Research Triangle Chapter, Society for Risk Analysis, Nanotechnology Risk Symposium. McKimmon Center, Raleigh, NC. January 19, 2010.



108. Monteiro-Riviere NA. "Fantastic Voyage: A Nanoparticle Journey Through Skin", Molecular Pharmaceutics and Medicinal Chemistry Joint Seminar. Distinguished Speaker, Eshelman School of Pharmacy, Center for Nanotechnology in Drug Delivery, University of North Carolina, Chapel Hill, NC. January 27, 2010. **(Distinguished Speaker)**
109. Monteiro-Riviere NA. "Assessment of UVB-damaged skin in vivo with sunscreen formulations containing titanium and zinc nanoparticles". The National Society of Toxicology, Salt Lake City Utah, March 10, 2010.
110. Monteiro-Riviere NA. "In vitro penetration studies of four sunscreen formulations containing titanium and zinc nanoparticles in UVB-damaged skin". The National Society of Toxicology, Salt Lake City Utah, March 10, 2010.
111. Monteiro-Riviere NA. "Do Sunscreens Containing Titanium and Zinc Nanoparticles Penetrate Normal and UVB Damaged Skin"? North Carolina State University Nanotechnology Integration Forum, Centennial Campus, Raleigh, NC. March 23, 2010.
112. Monteiro-Riviere NA. "Skin Barrier and Drug Delivery: In Vivo and In Vitro Assessment of UVB Damaged Skin with Sunscreen Formulations Containing Titanium and Zinc Nanoparticles", The 8<sup>th</sup> International Conference and Workshop on Biological Barriers-Nanotoxicology and Nanomedicine, Saarland University, Saarbrucken, Germany, March 29, 2010.
113. Monteiro-Riviere NA. "Safety Implications of Skin Permeation of Nanoparticles". The 12<sup>th</sup> International Perspectives in Percutaneous Penetration Conference, La Grande Motte, Palais des Congrès, France, April, 7, 2010.
114. Monteiro-Riviere NA "Comparative Anatomical Factors Affecting Topical Drug Delivery". The American Academy of Veterinary Pharmacology and Therapeutics (AAVPT) Workshop on Bioequivalence Issues in Veterinary Medicine. Potomac, Maryland, June 29, 2010.
115. Monteiro-Riviere NA. Characterization of Nanoparticles and Microparticles Using State of the Art Techniques. "Aspects of Characterization and Toxicology of Nanoparticles in Biological Systems". The 37<sup>th</sup> Annual Meeting of the Controlled Release Society. Portland, Oregon, July 10, 2010.
116. Monteiro-Riviere NA. "Safety Implications of Nanoparticles and Skin". Nanomaterials and Worker Health Medical Surveillance, Exposure Registries and Epidemiologic Research. National Institute for Occupational Safety and Health, Keystone, Colorado, July 22, 2010.
117. Monteiro-Riviere NA. "Characterizing the Safety and Health Effects of Carbon Nanofibers". Conference on Nanofibers for The 3<sup>RD</sup> Millennium- A Summit of the World's Leaders in Nanofibers, Raleigh, NC, September 1, 2010.
118. Monteiro-Riviere NA. "Evaluating the Safety Implications and Dermal Hazards Associated with Nanomaterials". The 7<sup>th</sup> International Seminar on Nanotechnology, Society and Environment, Rio de Janeiro, Brazil, November 11, 2010.
119. Monteiro-Riviere NA. "Factors Involved in Selecting Model Systems to Predict Transdermal Drug Delivery". Glaxo Smith Kline, Research Triangle Park, NC, February 25, 2011.

120. Monteiro-Riviere NA. ‘A Nanoparticle’s Journey Through Skin: The Fantastic Voyage’. **Purdue University Distinguished Women Scholar Award**, West Lafayette, Indiana. March 2, 2011.
121. Monteiro-Riviere NA. “Academic Experience and Advice to Women Scholars”. **Purdue University Distinguished Women Scholar Award**, Women’s History Month, West Lafayette, Indiana. March 3, 2011.
122. Monteiro-Riviere NA. “Nanoparticle Interactions with Skin: Blessing or Curse”? Karolinska Institutet, Institute of Environmental Medicine, Stockholm Sweden, June 15, 2011.
123. Monteiro-Riviere NA. “In Vitro Assessment on Nanomaterial Toxicity-Nanosciences, Nanotechnologies and Materials”. Karolinska Institutet, Consortium Meeting for Nanomune, Stockholm Sweden, June 16, 2011.

## HONORS:

Recipient of the Inaugural Purdue University Distinguished Women Scholars Award; March 3, 2011  
 Fellow, The Academy of Toxicological Sciences, 2004; Recertified 2010  
 American College of Toxicology, 2006  
 Outstanding Alumna Achievement Award- Department of Basic Medical Sciences, School of Veterinary Medicine, Purdue University, May 2007  
 One of “100 of the Nation’s best and brightest researchers” – chosen nationwide by the National Academy of Sciences for a special Keck Futures Initiative Conference on “Designing Nanostructures at the Interface Between Biomedical and Physical Systems”. June 2004.  
 Inducted to Phi Zeta, Psi Chapter National Veterinary Medicine Honor Society, 2001  
 Diplomate, Board Certified Forensic Examiner of the American Board of Forensic Examiners (#1005) (1995)  
 Diplomate, American Board of Forensic Medicine (#735) (1996)  
 American College of Forensic Examiners (#4829) (1995) Lifetime Fellow  
 Postdoctoral Fellowship Award, Chemical Industry Institute of Toxicology (1982-1984)  
 ILSI Harvard Travel Scholarship for the Histopathology Seminar on the Respiratory Systems of Laboratory Animals (1984)  
 International Life Sciences Institute: Pathology/Toxicology Expert (1986)  
 Science Forum Award  
 B.S. Cum Laude  
 Sigma Xi Scientific Research Society (1981)  
 Sigma Delta Epsilon  
 Who’s Who in Veterinary Science and Medicine (1987-1988) 1<sup>st</sup> ed. (1991/1992) 2<sup>nd</sup> ed.  
 International Who’s Who of Professional and Business Women 1989, 1991, 1<sup>st</sup> & 2<sup>nd</sup> ed.  
 The World Who’s Who of Women 1990, 10<sup>th</sup> ed.  
 Who’s Who in Science and Engineering 1994-1995, 2<sup>nd</sup> ed., 1996-1997, 3<sup>rd</sup>, 1998-1999, 4<sup>th</sup> ed., 2006-2007 9<sup>th</sup> ed., 2008-2009 10<sup>th</sup> ed.  
 Who’s Who in the World 1994, 12<sup>th</sup> ed.  
 Who’s Who in America 1995, 49<sup>th</sup> ed.  
 Two Thousand Notable American Women 1994, 6<sup>th</sup> ed.  
 Who’s Who in American Education 1995, 5<sup>th</sup> ed., 2006-2007, 7<sup>th</sup> ed., 2007-2008. 8<sup>th</sup> ed.  
 Who’s Who in Medicine and Healthcare, 1995, 1<sup>st</sup> ed,  
 Most Admired Men and Women of the Year 1995, 2<sup>nd</sup> ed.

Who's Who in the South and Southwest, 1996, 1997-1998, 25<sup>th</sup> ed.  
International Who's Who of Professionals 1999  
Who's Who in the World 2000, 17<sup>th</sup> ed.  
Who's Who in Medicine and Healthcare, 1999-2000, 2<sup>nd</sup> ed., 2000-2001, 3<sup>rd</sup> ed., 2002-2003, 4<sup>th</sup>  
International Who's Who of Professionals, 2000  
Lexington Who's Who, 1999-2000  
Strathmore's Who's Who 2000-2001, 2002-2003  
Marquis Who's Who, 2010

## NEWS RELEASES:

North Carolina State University- College of Engineering- Tiny Materials- Big Ambitions p. 24-25, Spring 2011,  
North Carolina State University- College of Veterinary Medicine- Faculty Awards, p. 25, Spring 2011  
<http://www.nanowerk.com/news/newsid=21124.php> Top Five Reasons Why NC is a Leading Nanobiotech Hub- World Renowned Hotbed and Key thought Leaders  
NCSU-Recipient of Distinguished Women Scholars Award <http://bit.ly/hLyGEd>  
[media-newswire.com/release\\_1143789.html](http://media-newswire.com/release_1143789.html); [www.purdue.edu/dp/sbbcle](http://www.purdue.edu/dp/sbbcle);  
[www.purdue.edu/newsroom/general/2011/110223SypherButlerScholar.html](http://www.purdue.edu/newsroom/general/2011/110223SypherButlerScholar.html)  
<http://www.ncsu.edu/faculty-and-staff/bulletin/2011/03/monteiro-riviere-wins-purdues-women-scholars-award/>  
EurekAlert : Probing the Nanoparticle: Predicting how nanoparticles will react in the body. August 15, 2010. [www.eurekalert.org/pub\\_releases/2010-08/ncsu-ptn081310.php](http://www.eurekalert.org/pub_releases/2010-08/ncsu-ptn081310.php)  
New Haven Independent . "Who's At Risk?" September 22, 2010.  
Naturenews <http://www.nature.com/news/2010/100914/full/467264b.html> "Tiny traits cause big headaches. September 14, 2010. Nature 467, 264-265, 2010. doi: 10.1038/467264b  
[bit.ly/a2rXgU](http://bit.ly/a2rXgU) NC State's Centennial Biomedical Campus Researchers Develop Nanoparticle Behavior Model in Humans, September 14, 2010.  
Nature Nanotechnology News & Views Bioscience Highlight "Nano Meets Bio at the Interface", volume 5, September, p.633-634, 2010.  
North Carolina State University News Release: "Microneedle, quantum dot study opens door to new clinical cancer tools," August 25, 2010.  
Popular Science: "System for predicting how nanoparticles affect the human body could save us for our technology: August 16, 2010.  
Nanotechnology Now: "Predicting How Nanoparticles will React in the Human Body", August 18, 2010.  
North Carolina State University News Release: "New Microneedle Antimicrobial Techniques May Foster Medical Tech Innovation", May 19, 2010.  
Medical Product Manufacturing News: "Use of atomic layer deposition to achieve biologically functional coatings", April 1, 2010.  
North Carolina State University News Release: NC State Researchers "*Describes Functional Nanomaterials for Medical Health Devices*", March 22, 2010.  
North Carolina State University News Release: "*NC State Research to Determine Where Nanomaterials Go in the Body*", NC State News Services, November 2, 2009.  
SAFENANO News Bulletin, Issue 45, November, 2009.  
NCSU-College Veterinary Medicine- "*CVM Researchers Study the Migration of Nanoparticles*", November, 2009.  
Scholarship to attend Workshop on Enabling Standards for Nanomaterial Characterization, National Institute of Standards and Technology, Gaithersburg, MD, October 8-9,2008.

North Carolina State University News Release: Study Shows that Quantum Dots can Penetrate Skin through Minor Abrasions” July 2, 2008.

<http://news.ncsu.edu/news/2008/07/wmsmonteirorivierequantumdots.php>

Research Cited on July 2, 3<sup>rd</sup>: Eurekalert.org - Gzzt.org, Physorg.com - Transhumanist.ning.com, Sciencedaily.com, Quantum Dots Can Penetrate Skin Through Minor Abrasions. *Science Daily*. Retrieved May 11, 2009, from <http://www.sciencedaily.com/releases/2008/07/080702103327.htm>, (<http://www.sciencedaily.com/releases/2008/07/080702103327.htm>), Mydailyapple.com, Toptensources.com, Protein.com, Nanotechwire.com, News-medical.net, Bio-medicine.org, Nanotech-now.com, Silobreaker.com, Nanowerk.com, Esciencenews.com, Nerve.in, Scientistlive.com, Sciencenewsdaily.org, Machineslikeus.com, Biologynews.net, Scienceblog.com - link also off of NY Times online, Specialchem4coatings.com Eureka! Science News, PhysOrg.com

ScienceBlog.com, Genetic Engineering News, Science Daily, Nanowerk LLC  
Nanotechnology & Development News, Nanotechnology News, AZoNano, News-Medical.net,  
Biology News Net, Nanotechwire.com, Scientist Live Medical News Today  
HULIQ, Innovations Report, Safety Online. Photonics Online, The Money Times, India  
RedOrbit, United Press International, istockAnalyst.com, The Post Chronicle [online newspaper],  
RxPG NEWS, Frontline, India, Hindu, India, Nanotechnology Today, Nanotechnology Now,  
RxPG News, Cosmetics and Toiletries.com,  
July 16, Nano Reg Report Top Stories- July 16, 2008

North Carolina State University News Release: Nanomaterials Breakthroughs for Implantable Medical Devices, November 11, 2008.

**Monteiro-Riviere NA, Nemanich RJ, Inman AO, Wang YY, Riviere JE:** Multi-walled carbon nanotube interactions with human epidermal keratinocytes. *Toxicology Letters* 55:377-384, 2005. **Most Highly Cited Paper by Toxicology Letters- Elsevier publishers (2006, 2007, 2008, 2009, 2010)**

Research cited in North Carolina State University- Nanotechnology “RESULTS”-“Future Worker Safety Concerns Prompt Study”. Vol. VII, Number 3, p.3, Fall, 2007.

Research cited in North Carolina State University, College of Veterinary Medicine’s Magazine, “Discovering Properties of Nanoparticles” p.26, & p.13, Summer 2007.

Research cited in North Carolina State University, College of Veterinary Medicine’s web page, [www.cvm.ncsu.edu](http://www.cvm.ncsu.edu), April 2007.

Research cited North Carolina State University Alumni Magazine, p.19, Spring Edition, 2007.

Research cited in Triangle Business Journal, p.6, January 26, 2007.

Research cited in “Nanomaterials News” Vol 2, issue 23, pp.2-3, January 23, 2007.

Research cited in Frankfurter Allgemeine Zeitung (FAZ) No. 10, page 32. Friday, January 12, 2007.

Research cited on North Carolina State University Web Page, “Buckyballs Could Have Major Medical Implications “Study Shows “Bucky Balls” Penetrate Deeper, Faster When Skin is Flexed, January 8, 2007.

Research cited in “Nanowerk Spotlight”. <http://www.nanowerk.com/spotlight/spotid=1210.php>, January 5, 2007.

Research cited in Science News, Particular Problems: Assessing Risks of Nanotechnology”, vol. 169, No.18, pp.273-288, May 6, 2006.

Research cited in Chemical and Engineering News: Science and Technology- Fullerene for the Face, March 27, Vol 84, #13, p.47, 2006

Research Highlighted in Nanomedicine: Nanotechnology, Biology and Medicine 1:351-357, 2005.

Research cited in OMB Watch- “Nanotech, Genetically Modified Crop News Spotlights Regulatory Gaps”, November 3, 2005.

Research cited in the College of Veterinary Medicine Magazine, “Nanomaterials: No Small Question”, p.26-27, Summer, 2005.

Research Cited in “The Scientist”, Time to Regulate Nanoparticle Safety? August 1, 2005, Vol. 19, #15, p.29.

Research cited in <http://www.wired.com/wireless/story/0,2278,67626-,00.html> “When Nanopants Attack”, June 10, 2005.

Research cited in Research Advances entitled “Carbon Nanotubes and Human Cells?” in the Journal of Chemical Education vol.82, pp.666-70, May 2005.

Research Award on Newswire.com; *Medical News Today, UK*, “Nanomaterials: How do they cross membranes to allow for their interaction with cells”. April 16, 2005.

Research Featured Article in North Carolina State University “*Bulletin*” “Tiny Particles of Big Importance” p.4, March 4, 2005.

Research featured in an exhibition on Nanotechnologies at the *London Science Museum* (2/16/05) for one year.

Research was cited in *Business Week*, “The Worries over Nano No Nos”, February 23, 2005.

Research was highlighted in *Science* December 24, vol. 306, p.2164, 2004. Nanotechnology: “Ingesting Nanotubes” Selected as the Editor’s choice that highlights the most recent literature that has major impact in science and medicine.

Research Highlighted in *Spitting Image* “Nano Needs Research Before Rules”, December 16, 2004. Selected by the *American Association for the Advancement of Science* to serve as an expert on the “Environmental Impact of Nanotechnology” (See [www.eurekalert.org/nanotalk](http://www.eurekalert.org/nanotalk) December 7, 2004. This involved a two-hour live online chat nanotalk. Science hosted this event were news reporters from all over the world-addressed questions to myself and one other scientist regarding the importance and safety on the environmental implications of nanotechnology. This involved 13 pages of questions and answers.

Research reviewed in *British Medical Journal-2005*

Research Advances “Carbon Nanotubes and Human Cells” *Journal of Chemical Education*

Research featured in “*Space Daily*” in Nano tech analysis, 12/20/ 2004

Research was announced in the *Washington Times* 12/10/2004” Analysis: Nano needs research.

Research was announced in the *United Press International*.12/10/2004” Analysis: Nano needs research before rules.

Research was announced in *Howard Lovy’s Nanobot*. 12/11/2004” “All we have is speculation on toxicity.”

Research Cited: “*Nanoparticle News*” EPA Doles out four million for Environmental Research “Establishing Boundaries for Dermal Risk Assessment” Vol. 7, December 2004.

Research News in “*Nanovip.com*”, December 11, 2004.

Research was announced in *Space Daily*. 12/20/2004 Analysis: Nano needs research before rules.

*American Association for the Advance of Science* “*News Archives*” Citing Environmental Concerns, Experts Advise Caution on Nanotech. Cited my cyber chat and research.

Research listed in “*Skin Ceuticals*”.

Sigma Xi Scientific Research Society, Certificate of Recognition for Outstanding Service and Dedication, May 7, 2004.

Research highlighted in “*Alkylphenols Bulletin*”; A Study Report on Human Safety of Nonylphenol, October 14, 2003.

North Carolina State University, “*Results*” in Biomedical Engineering- Featured article on Tissue Engineering “CVM Toxicologist Gets Under Your Skin”, Vol III, (Summer 2003).

Research cited in the North Carolina State University Alumni Magazine (Winter 2000) as one of the 100 North Carolina State Achievements of the Century.

## **Hobbies:**

Swimming, bird watching, gardening, catechist, total youth ministry adult presence

## **Public Service:**

Lafayette Regional Science Fair, Judge, 1980, 1981

North Carolina Student Academy of Science, Judge 1987

Sanderson High School, participated in the Laboratory Technician Course and mentored Deana Fleming, 1991.

Coach for North Carolina Odyssey of the Mind Creative Competition, 1993

Expanding Your Horizons Conference, career conference designed for seventh grade girls, participated in their career panel discussions and workshops, March 5, 1995.

North Carolina School of Science and Mathematics, served as a preceptor for Ellie Klerlein, 1996-1997.

Participated in giving science lectures at Sanderson High School, Leesville High, Leesville Middle, Leesville elementary, Hilburn elementary and North Carolina School of Science and Mathematics.

Chemical Industry Institute of Toxicology (CIIT), "Tox In a Box" participated in an educational workshop to demonstrate techniques for making toxicological research accessible for elementary, middle and high school students, 2000.

Exploring the Profession of Veterinary Medicine, NCSU- Take Our Daughters to Work Day, 2001, 2002, 2003, 2004.

Participated in teaching a short course on Nanotechnology at NCSU for high school science teachers, 2005, 2006.

Talked to Emergency Responders of Lee County, NC about Nanotechnology Hazards. April 14, 2008.

## **EXTRAMURAL RESEARCH SUPPORT:**

### **Grants Awarded:**

Chemical Industry Institute of Toxicology, Research Triangle Park, NC. "Acute Formaldehyde Toxicity in the Rat Nasal Epithelium." January 1984-June 1984; \$10,000. **Principal Investigator** - 25% effort.

University of North Carolina, School of Medicine, Chapel Hill, N.C. "Light and Electron Microscopy of Wound Healing in Rats Exposed to Different Dressings." January 1984-January 1985; \$5,000. **Principal Investigator** - 10% effort.

NCSU Veterinary Medical Research Funds. "Morphological Characterization of Localized Cutaneous Reactions to Sarcoptic Mange in Swine." July 1984-July 1985; \$18,730. **Co-Principal Investigator** - 10% effort.

NCSU Veterinary Medical Research Funds. "A Comparison of Glandular Epidermal and Skin Surface Lipids from Normal and Seborrhic Dogs." July 1985-July 1986; \$7,320. **Co-Investigator** - 5% effort.

NCSU Veterinary Medical Research Funds. "Morphological Characterization of Localized Cutaneous Reactions to Sarcoptic Mange in Swine." July 1985-July 1986; Continuation, \$11,820. **Co-Principal Investigator** - 10% effort.

NCSU Veterinary Medical Research Funds. "Preliminary Studies on the In Vitro Isolated Perfused Porcine Skin Flap for Physiological Modeling in Surgical Research." July 1985-July 1986; \$20,200. **Co-Investigator** - 5% effort.

DoD, US Army Medical Research and Development Command, Ft. Detrick, MD. DAMD 17-84-C-4103. "Development of In Vitro Isolated Perfused Porcine Skin Flaps for Study of Percutaneous Absorption of Xenobiotics." October 1984-September 1987; \$295,703. **Co- Investigator** - 25% effort.

National Institute of Arthritis, Diabetes and Digestive and Kidney Diseases. AM31862. Aminoglycoside Nephrotoxicity in Chronic Renal Disease. January 1984-December 1986; \$353,529. **Co-Investigator** - 5% effort.

NCSU Veterinary Medical Research Funds. "Bladder Healing After Neodymium: Yag and CO<sup>2</sup> Laser Wounding in the Dog." July 1986-July 1987; \$21,000. **Co-Investigator** - 5% effort.

NCSU Veterinary Medical Research Funds. "Development of an isolated perfused human-xenograft skin flap preparation." July 1987-July 1988; \$23,170. **Co-Investigator** - 5% effort.

The Johns Hopkins University, Center for Alternatives to Animal Testing, Baltimore, MD. "Utilization of the Isolated Perfused Porcine Skin Flap Preparation as an Alternative Animal Model for the Evaluation of Dermatotoxicity." February 1988-February 1989; \$17,000. **Principal Investigator** - 20% effort.

Becton Dickinson. "The IPPSF as an In Vitro Model for Developing Drug Delivery Systems." October 1986-September 1991; \$1,349,052. **Co-Principal Investigator** - 14% effort.

Sphinx Biotechnologies. "Dermal Penetration of Antiproliferative Agents." July 1990-Oct 1991; \$127,334. **Principal Investigator** - 10% effort.

Pfizer. "Transdermal Drug Delivery: In Vitro and In Vivo Studies." March 1991-August 1991; \$10,000. **Co-Principal Investigator** - 5% effort.

NCSU Veterinary Medical Research Funds. "Utilization of the Isolated Perfused Equine Skin Flap to Assess Percutaneous Absorption of an Organophosphate and the Effects of Concurrent Application of Dimethylsulfoxide (DMSO)." July 1990-July 1991; \$18,878. **Co-Investigator** -5% effort.

Environmental Protection Agency. "Quantitative Prediction of Xenobiotic Percutaneous Absorption and Cutaneous Disposition." April 1991-March 1994; \$422,433. **Co-Principal Investigator** - 15% effort.

DoD, US Army Medical Research and Development Command, Ft. Detrick, MD. DAMD-17-87-C-7139 "Cutaneous Toxicity of Mustard and Lewisite on the Isolated Perfused Porcine Skin Flap." September 1987-April 1992; \$792,543. **Principal Investigator** - 20% effort.

PHS/NIH/NIEHS Program Grant. #ES 00044. "Mechanisms of Pesticide Toxicity" (E. Hodgson, P.I.). May 1988-February 1993; \$2,965,175. **Co-Investigator** - 20% effort.

The Procter and Gamble Company. "Evaluation of the Isolated Perfused Porcine Skin Flap as a Model for Studying Mechanisms of Skin Inflammation". May 1989-June 1993; \$50,000. **Principal Investigator** - 5% effort.

NCSU-Battelle Cutaneous Pharmacology and Toxicology Center. May 1988-January-September 1992; \$80,193. **Principal Participant**.

PHS/NIH/National Institute of Environmental Health Science, Training Grant. #ES 07046. Training in Biochemical and Environmental Toxicology (F.E. Guthrie, P.I). July 1987-June 1992; \$795,044. **Faculty Investigator** - 5% effort.

Battelle (MREF). "Evaluation of Human Skin Equivalents for Studying Bis-2 Chloroethyl Sulfide Induced Dermatotoxicity". July 1993-July 1994; \$119,267. **Principal Investigator** 10% effort.

Cygnus Therapeutics Systems. "Transdermal Drug Delivery by Electroporation". July 1993-June 1994; \$136,739. **Co-Investigator** - 10% effort.

Agency for Toxic Substances and Disease Registry (ATSDR). "A Mechanistic Approach to Quantitating the Percutaneous Absorption and Toxicity of Chemical Mixtures." September 1994-September 1995; \$149,230. **Co-Investigator** -5% effort. (Approved for Funding but lacked funds).

ISIS Pharmaceuticals, Inc. "Anatomical Localization of Oligonucleotide Drugs Within the Skin". August 1994-August 1995, \$20,000. **Principal Investigator-Gift**

PHS/NIH/NIEHS Program Grant. #ES 00044. Mechanisms of Pesticide Toxicity (E. Hodgson, P.I.). Project I: "Pesticide Percutaneous Absorption, Metabolism and Toxicokinetics", March 1993-February 1996; \$275,362. **Co-Investigator** - 10% effort.

DoD, US Army Medical Research and Development Command, Ft. Detrick, MD. DAMD 17-92-C-2071 "Mechanisms of Cutaneous Vesication." July 1992-April 1996; \$862,377. **Principal Investigator** - 25% effort.

Battelle Memorial Institute/ Medical Research Evaluation Facility. "Isolated Perfused Porcine Skin Flap Transfer Project". May 1994-June 1996; \$391,759. **Co-Principal Investigator**- 10% effort.

National Oceanic and Atmospheric Administration, National Marine Fisheries Service. "Morphological Characterization of Dolphin Skin". May 1995-March 1996; \$5,000. **Principal Investigator**- 5% effort.

North Carolina Biotechnology Center Academic Research Initiation Grant Program. "Development of an Isolated Perfused Buccal Mucosa Model". July 1995-December 1996; \$ 33,900. **Co-Principal Investigator**-10% effort.

PHS/NIH/National Institute of Environmental Health Science, Training Grant. #ES 07046-17. Training in Biochemical and Environmental Toxicology (E. Hodgson P.I.). July 1992-June 1997; \$1,085,656. **Faculty Investigator**- 5% effort.



Air Force Office of Scientific Research (AFOSR)F49620-95-1-0017. "Development of a Quantitative Model for Prediction of Percutaneous Absorption". October 1994-September 1997; \$ 434,737. **Co-Investigator**-10% effort.

Genetronics Inc. "Electro-incorporation Enhanced Transdermal Delivery in Pig Skin". June 1996- June 1997; \$ 10,000. **Principal Investigator**- 5 % effort.

Cygnus Therapeutic Systems, "Iontophoretic Drug Delivery in Pig Skin". June 1996-June 1997; \$ 18,000. **Principal Investigator**- 5% effort.

Cellegy Pharmaceuticals, Inc., "Transdermal Drug Delivery Research". January 1997-January 1998; \$ 150,000. **Principal Investigator**- 5% effort.

NIH/SBIR/ Fibrogen 1R43AR43019-01A1 Skin Sciences. "Antioxidants for topical application". January 1997-March 1998; \$ 33,626. **Principal Investigator**- 5% effort.

DoD, US Army Medical Research and Development Command, Ft. Detrick, DAAH04-96-C-0086 "Localization of epidermal-dermal junction epitopes in the mouse ear treated with sulfur mustard." April 1997-August 1998; \$ 31,093. **Principal Investigator**- 5% effort.

Cellegy Pharmaceuticals, Inc., "Biological Penetration Enhancers For Use in Transdermal Drug Delivery". July 1996- May 1998; \$316,947. **Co-Principal Investigator**- 5% effort.

Proteque International Inc., "Evaluation of Barrier Creams". January 1998-June 1998. \$20,000. **Principal Investigator**- 5% effort.

National Institutes of Health (NIH) "High Voltage Pulsing for Transdermal Drug Delivery". July 1995-June, 1999; \$ 910,161. Harvard-Massachusetts Institute of Technology Division of Health Sciences and Technology, Subcontract- \$ 67,173. **Principal Investigator**- 5% effort.

Cellegy Pharmaceuticals, Inc., "Transdermal Drug Delivery of Penetration Enhancers in Pig Skin". January 1998-January 1999; \$ 157,235. **Principal Investigator**- 5% effort.

NCSU-CVM Veterinary Medical Research Funds. "Pathophysiology of stress-induced, acute fin ulceration in fish." July 1998-June 1999; \$16,884. **Co-Investigator**- 5% effort.

The Chemical Manufactures Association. "Strategies for Phenol Decontamination". November 1998-October 1999; \$74,397. **Principal Investigator** - 10% effort. Additional \$10,000 gift.Total \$ 84,397.

FibroGen, "Enhancement of Wound Healing in the Pig". November 1998-November 1999; \$10,000 **Principal Investigator**- 5% effort.

Virbac, "Use of Transdermal Water Loss to Assess Cutaneous Barrier Defects in Dogs with Atopic Dermatitis. July 1998-June 1999; \$14,444. **Co-Investigator**- 5% effort.

Alkylphenols and Ethoxylates Research Council. "In Vitro Penetration Following a Single Application to the Excised Skin of Humans, Rats, and Pigs". November 1998-October 1999; \$102,603. **Principal Investigator**- 10% effort. Additional \$10,000 gift. Total \$112,603.

DoD, US Army Medical Research and Materiel Command, Sci Tech Inc, Aberdeen Proving Ground, MD. “Use of Methyl Salicylate as a Simulant for Predicting the Percutaneous Absorption of Sulfur Mustard.” January 1999-January 2000: \$114,958. **Co-Principal Investigator**- 5% effort.

NIH/SBIR/Encelle 1R43GM61437-01, Inc., “The Effectiveness of E Matrix in Wound Healing in the Pig”, September 1999-September 2000: \$28,913. **Principal Investigator** - 5% effort.

DoD/Air Force Office of Scientific Research USAFOSRF49620-98-1-0105. “Quantitating the percutaneous absorption of mechanistically-defined chemical mixtures”. November 1997- November 2000; \$ 375,484. **Co-Principal Investigator**- 10% effort.

PHS/NIH/National Institute of Environmental Health Science, Cooperative Training in Environmental Sciences Research. Environmental Cellular and Molecular Pathology Assignment #: 1T32ES07311-01 (K.Adler, G.Winston, E. Hodgson, PI's.), April 1998-March 2001: Total funds requested: \$1,004,800.

United States Department of Agriculture, CSREES, National Research Initiative Competitive Grants Program. “Pathogenesis of the Fin Ulceration Response (FUR) in Fish”, September 1999- August 2001; \$200,000. **Co- Investigator** - 5% effort.

PHS/NIH/National Institute of Environmental Health Science. ES07046-21 Training Grant. Training in Biochemical and Environmental Toxicology (E.Hodgson P.I.). July 1997-June 2002; \$ 3,016,876. **Associate Director**- 5% effort.

Public Health Service/Agency Toxic Substance and Disease Registry (PHS/ATSDR). U61/ATU484504. “Chemical Mixtures Risk Assessment”. September 1997—June 2002; \$ 315,110.**Co-Investigator**- 5% effort.

DoD, US Army Medical Research and Development Command, Ft. Detrick, MD, DAMD-17-99C-9047. “Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War,” February 1999-January 2002; \$760,031. **Co-Principal Investigator**- 10% effort.

NIH/SBIR/ Phytoceuticals 1R43CA83538-01A1. “Prevention of UV Photoinjury in Skin by Antioxidants”. July 2000- December 2002: \$22,298. Additional \$22,000 gift. **Principal Investigator** - 1% effort.

Geo-Centers/Office of Naval Research, Subcontract GC-3291-044-01-009 under SPAWAR SYCHEN NHRC No.N66001-98-D-2600, D.O.0044 “Dermal Toxicology Studies”. August 2001-August 2002; \$74,932. **Principal Investigator**- 5% effort.

NIH/SBIR/ “Photoprotection of Skin by Topical Selenium”. July 2002-June 2003. \$14,156. **Principal Investigator**-1% effort.

Phytoceuticals: “Prevention of Photoinjury in Skin by Antioxidants”. July 2002-December 2002. \$14,156. **Principal Investigator**-1% effort.

NIH/SBIR/ Phase II/ Phytoceuticals. “Prevention of Photoinjury in Skin by Antioxidant Formulations”. January 2003-May 2003: \$54,386. **Principal Investigator**-1 % effort.

DoD/Air Force Office of Scientific Research USAFOSRF49620-98-01-1-0080. “Quantitating the Percutaneous Absorption of Mechanistically-Defined Chemical Mixtures”. November 2000- November 2003: \$578,260. **Co-Principal Investigator**- 10% effort.

NIH/ SBIR/ Skin Research 1R43 AR50302-01. Photoprotection of Skin by Novel Polyphenol Antioxidants. September 2003-February 2004. \$18,000. **Principal Investigator** - 5% effort.

PHS/NIH/ NIOSH, R01-OHAR-03669. “Dermal Absorption of Cutting Fluid Mixtures”. August 2000-July 2004; \$880,687. **Co-Investigator**- 10% effort.

Research Triangle Institute. “Support research in the field of cellular growth”. September 2004. \$2,000. **Principal Investigator**. (Gift)

PHS/NIH/NIOSH, RO1-OH-07555. “Experimental and Computational Methods for Quantitating the Absorption of Complex Chemical Mixtures Through Skin”. June 2001-May 2004; \$746,528. **Co-Principal Investigator**- 5% effort.

Skin Science Institute Inc. “Photoprotective Effects of Selenium”. January 2005-December 2005, \$41,068 (20,483 and \$20,585). **Principal Investigator** - 5% effort.

NCSU-Faculty Research and Professional Development Fund. “A Microfluidic Platform for Cytotoxicity Screening”. April 2005- March 2006, \$20,000. **Co-Principal Investigator** - 10% effort.

DoD/Air Force Office of Scientific Research (USAFOSR), FA9550-04-1-10376. “Quantifying the Absorption, Partitioning and Toxicity of Hydrocarbon Components of JP-8 Jet Fuel.” June 2004 –May 2007. \$ 599,954. **Co-Principal Investigator** - 10% effort.

USEPA STAR- RD-83171501. United States Environmental Protection Agency. STAR Program on Impacts of Manufactured Nanomaterials on Human Health and the Environment. “Evaluating Nanoparticle Interactions with Skin. October 2004-September 2007, \$ 340,506. **Principal Investigator** - 10% effort.

Skin Science Institute Inc. “Photoprotective Effects in Porcine Skin”. September 2006-August 2007. \$27,833. **Principal Investigator** - 5% effort.

NAKFI Nano11. National Academies Keck Futures Initiative Nano Grant. “Nature of Fullerene Nanomaterial Interactions with Biological Systems”. May 2005 – June 1, 2007. \$75,000. **Principal Investigator** - 10% effort.

John Hopkins Center for Alternatives to Animal Testing (CAAT). Microfluidic Systems for Reducing Animal Use in High Throughput Toxicity Assays. February 1, 2007-January 31, 2008, \$20,000. **Co-Investigator** –5% effort.

Colgate-Palmolive Grants for Alternatives Research. Skin-on-a-Chip for Microscale Irritant Screening, May 2007-April 2008. \$40,000. **Co-Investigator** -1 % effort.

BASF. “Comparative in Vitro Dermal Absorption and Metabolism of 01/0545 in Fresh Rat, Pig and Human Skin”. March 1, 2007- February 28, 2008. \$201,832. **Principal Investigator**- 20% effort.

Biochemics, Inc. “Vascular Modulation of Nanomaterials Delivery to Skin.” January 1, 2008-September 30, 2009. \$300,000. **Co-Principal Investigator**- 5% effort.

DoD/United States Air Force Office of Scientific Research (USAFOSR) FA 9550-08-1-0182. “Biokinetics and Biodynamics of Nanomaterial Interactions.” March 2008- February 2009. \$320,000. **Principal Investigator**- 10% effort.

Entegriion, “Evaluation of Textile Formats for Wound Management”. May 2008-April 2009. \$26,295. **Principal Investigator**- 5% effort.

Framework Seven Project European Commission/Research Directorate G: Industrial Technologies, “Comprehensive Assessment of Hazardous Effects of Engineered Nanomaterials on the Immune System.”. September 2008 – August, 2011. €3,358,500. US Partner **Principal Investigator**.

BASF. “Assessment of Several TiO<sub>2</sub> Nanoparticle Formulations in Skin.” August 2008- July 31, 2009. \$111,140 and \$14,850 for a total of \$125,990. **Principal Investigator**- 5% effort.

Battelle Memorial Research Award of the Dermal Toxicology Specialty Section at the -Annual National Society of Toxicology (SOT). “Interaction of Multi-walled Carbon Nanotubes with Human Epidermal Keratinocytes could be Inhibited by Lectins or Niacinamide”. May 2009-April 2010. \$ 2,500. **Principal Investigator** - 5 % effort.

NIEHS/ National Institutes of Environmental Health Sciences. Research Triangle Institute contract 1-340-0209943. In Vitro Dermal Absorption of Dimethylamine Borane (DMBA). November 2009-October 2010. \$ 33,704. **Principal Investigator** - 5 % effort.

### **ACTIVE GRANTS:**

NIOSH R01 OH 007555-04. Quantitating Absorption of Complex Chemical Mixtures. April 2005 – March 2010, \$ 1,642,500. **Co-Investigator** - 5% effort.

USEPA STAR- RD-83332801. United States Environmental Protection Agency. STAR Program Impacts of Manufactured Nanomaterials on Human Health and the Environment. Impact of Physicochemical Properties on Skin Absorption of Manufactured Nanoparticles. May 2007- May 2011, \$ 391,617. **Co-Principal Investigator** - 5% effort.

NIH/ National Institutes of Environmental Health Sciences. 1R01ES016138-01 Comparative In Vivo Biodistribution of Characterized Manufactured Nanomaterials. September 2009-August 2011, \$ 658,367. **Principal Investigator** - 20% effort.

National Textile Center (NTC) TAC Project F10-NS01 - “Hierarchical 3-D Textile Architecture for Tissue Engineering Scaffolds Using Bioactivated Nanofibers, Multi-grooved Microfibers and Porous Spacer Knit Fabrics”. May 2010-April 2012. \$ 120,000. **Co-Principal Investigator**- 5% effort.

### **Pending Grants:**

NIH/ National Institutes of Environmental Health Sciences. U19-Cooperative Agreement Grant: Engineered Nanomaterials: Linking Physical and Chemical Properties to Biology. "Properties Influencing Cellular Uptake and In Vivo Disposition of Nanomaterials". October 1, 2010- September 30, 2015, \$ 5,613,192. **Principal Investigator** - 15 % effort.

NIH/ National Institutes of Health. Argentum Cidal Electrics (ACE), Inc., Phase 1 STTR- "Examining the Biological Properties of Electrically Stimulated Silver". April 1, 2011- March 31, 2012. \$50,000. **Principal Investigator** - 15 % effort.

NIH/ National Institutes of Health. "An Investigation of the Toxicity and Bactericidal Nature of Silver Ions". May 15, 2011- December 15, 2012, \$335, 250. **Co- Principal Investigator**- 10% effort.

NIH/ National Institutes of Health. "Gene Delivery Array Patch Applicator", April 4, 2011- May 31, 2013, \$381,876. **Co- Principal Investigator**- 10% effort.

MARS, Inc. "Alternative methods for Ingredient Safety Evaluation", February 1, 2011- December 31, 2013, \$ 3,216,386. **Co- Principal Investigator**- 20% effort.

National Science Foundation (NSF). "Define and characterize the factors governing the selectivity of biomolecules in the nanoparticle-protein corona formation process". Co-Investigator  
**Electronic Media/Educational Material for Distribution:**

In Vitro and In Vivo Assessment of Cutaneous Toxicity; Biological Considerations in Model Selection. Audio Cassette 012PM98, National Society of Toxicology 1998.

Sun Safety and Sunscreens: Reduction of Irritation by a Non-Corticosteroid Topical Agent. Audio Cassette 99HD-12, Human Skin Disease Education Foundation 1999.

Cutaneous Toxicity-Current Methods and Concepts in Safety Evaluation and Relevance to Human Exposure, Continuing Education Course, 42<sup>nd</sup> Annual Meeting of the Society of Toxicology, Salt Lake City, Utah. 2003.

Homo Toxicus-a film produced by Carole Poliquin on the toxic substances in the environment. ISCA, Les Productions, Montreal, QC, 2008.

## **PATENTS:**

Iontophoretic Electrode, **U.S. Patent #5,540,654 issued 7/30/96.** (JE Riviere, RA Rogers, and **NA Monteiro-Riviere**); NCSU File 94-80.

Method and Apparatus for Determining a Molecular Descriptor of Absorption for a Candidate Compound. U.S. Patent # 60/361,926, filed 3/5/2002, **US Patent # 7,517,693 B2 issued on April 14, 2009.** (JE Riviere, X Xia, R Baynes, **NA Monteiro-Riviere**); NCSU File 02-82.

Transdermal Nanoparticles Skin Therapeutics (**NA Monteiro-Riviere, JE Riviere**)  
Filed Feb 7, 2008.

Invention Disclosure: A Chromatographic Method for Assessing Skin Absorption. NCSU File No. 02-83.

Invention Disclosure: Live-Cell Microdialysis. NCSU File No. 02-79.

Invention Disclosure: Antimicrobial Microneedles. NCSU File No. 11050 Filed December 2010.

Other:

Isolated Perfused Porcine Skin Flap (IPPSF) model selected for inclusion into the evaluated database of in vitro techniques maintained by the European Centre for the Validation of Alternative Methods (ECVAM) of the European Commission.

## **PUBLICATIONS, MANUSCRIPTS, AND BOOK CHAPTERS:**

1. Stromberg MW, Hwang YC, **Monteiro-Riviere NA**: Interfollicular smooth muscle in the skin of the domestic pig (*Sus scrofa*). Anatomical Record 201:455-462, 1981. PMID: 7305026
2. **Monteiro-Riviere NA**, Hwang YC, Stromberg MW: Light microscopic morphology of low resistance skin points in the guinea pig. American Journal of Chinese Medicine 9:155-163, 1981. PMID: 7345920
3. **Monteiro-Riviere NA**, Popp JA: Ultrastructural characterization of the nasal respiratory epithelium in the rat. American Journal of Anatomy 169:31-43, 1984. PMID: 6720609
4. Popp JA, **Monteiro-Riviere NA**: Ultrastructural studies of the Rat Nasal Mucosa. CIIT Activities 4: 1-4, 1984.
5. **Monteiro-Riviere NA**, Stromberg MW: Ultrastructure of the integument of the domestic pig (*Sus scrofa*) from one through fourteen weeks of age. Anatomia, Histologia, Embryologia C- Journal of Veterinary Medicine 14:97-115, 1985. PMID: 3161419
6. Popp JA, **Monteiro-Riviere NA**: Macroscopic, Microscopic and Ultrastructural Anatomy of the Rat Nasal Cavity. In Monographs on Pathology of Laboratory Animals. (Eds. TC Jones, U Mohr, and RD Hunt). Springer-Verlag pp. 1-10, 1985.
7. Carver MP, **Monteiro-Riviere NA**, Brown T, Riviere JE: Dose response studies of gentamicin nephrotoxicity in rats with experimental renal dysfunction. II Polyvinyl alcohol glomerulopathy. Toxicology and Applied Pharmacology 80:264-273, 1985. PMID: 4024116
8. **Monteiro-Riviere NA**, Popp JA: Ultrastructural evaluation of acute nasal toxicity in the rat respiratory epithelium in response to formaldehyde gas. Fundamental and Applied Toxicology 6:251-262, 1986. PMID: 3699315
9. Popp JA, **Monteiro-Riviere NA**: Ultrastructure of the Rat Nasal Mucosa. In Toxicology of the Nasal Passages, (Ed. CS Barrow). Hemisphere Publishing Corporation pp. 37-49, 1986.
10. Riviere JE, Bowman KF, **Monteiro-Riviere NA**: The isolated perfused porcine skin flap: A novel *in vitro* animal model system for drug and xenobiotic percutaneous absorption. Proceedings of the Fifth Annual Chemical Defense Bioscience Review, Columbia, MD. USAMRICD-Report #SP 85-051, pp. A-911-926, 1985.

11. Bowman KF, **Monteiro-Riviere NA**, Riviere JE: Development of surgical techniques for in-vitro isolated perfused skin flaps for percutaneous absorption studies. Proceedings of the Fifth Annual Chemical Defense Bioscience Review, Columbia, MD. USAMRICD-Report #SP 85-051, pp. A-927-939, 1985.
12. Riviere JE, Bowman KF, **Monteiro-Riviere NA**: Development of in vitro isolated perfused porcine skin flaps for study of percutaneous absorption of xenobiotics. DAMD17-84-C-4103, NTIS, ADA 183580, pp. 1-32, 1985.
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14. Riviere JE, Bowman KF, **Monteiro-Riviere NA**: The Isolated Perfused Porcine Skin Flap. A Novel Animal for Cutaneous Toxicologic Research. In Swine in Biomedical Research (Ed. ME Tumbleson). Plenum Publishing Corporation. Vol. 1. pp. 657-666, 1986.
15. **Monteiro-Riviere NA**, Jiang XZ: Use of mixed glycosidase for the removal of mucus from the rat nasal epithelium in SEM studies. Journal of Electron Microscopy Technique 3:407-411, 1986.
16. Riviere JE, Bowman KF, **Monteiro-Riviere NA**, Dix LP, Carver MP: The isolated perfused porcine skin flap (IPPSF). A novel in vitro model for percutaneous absorption and cutaneous toxicology studies. Fundamental and Applied Toxicology 7:444-453, 1986. PMID: 3781134
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#### **Poster Presentations: (Non-published)**

**Monteiro-Riviere NA**, Popp JA: Ultrastructural evaluation of nasal toxicity in response to formaldehyde. N.C. Society of Toxicology. Research Triangle Park, NC. Feb. 4, 1984.

Carver MP, Brown TT, **Monteiro-Riviere NA**, Riviere JE: Gentamicin nephrotoxicity in rats with prior renal insufficiency. N.C. Society of Toxicology, Research Triangle Park, NC. Feb. 2, 1985.

Rogers RA, **Monteiro-Riviere NA**, Bowman KF, Dix LP, Riviere JE: Development of in vitro isolated perfused skin flaps for the study of percutaneous absorption of xenobiotics. N.C. Society of Toxicology, Research Triangle Park, NC. Feb. 2, 1985.

Carver MP, Bowman KF, **Monteiro-Riviere NA**, Riviere JE: The isolated perfused porcine skin flap as a model for investigating the percutaneous absorption of xenobiotics. Symposium on Recent Advances in the Study of Xenobiotic Metabolism. Raleigh, N.C. Oct. 15, 1985, and N.C. Society of Toxicology Research Triangle Park, N.C. Feb. 1, 1986. (**Recipient of graduate student best Poster Award**).

Grissom JR RE, **Monteiro-Riviere NA**, Guthrie FE: In vivo and in vitro dermal penetration of hydrophilic and lipophilic pesticides in mice. N.C. Society of Toxicology. Research Triangle Park, N.C. Feb. 1, 1986.

Carver MP, **Monteiro-Riviere NA**, Rogers RA, Bowman KF, Riviere JE: Percutaneous absorption kinetics of organophosphates, steroids, caffeine and benzoic acid in the isolated perfused porcine skin flap (IPPSF). N.C. Society of Toxicology. Research Triangle Park, N.C. Jan. 31, 1987. (**Recipient of graduate student best Poster Award**).

**Monteiro-Riviere NA, Smart RC:** Morphological changes induced by 12-o-tetradecanoylphorbol-13-acetate (TPA) and sn-1,2- didecanoylglycerol (DIC<sub>10</sub>) on CD-1 mouse skin in vivo. N.C. Society of Toxicology, Research Triangle Park, N.C., Jan. 30, 1988.

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**Monteiro-Riviere NA**, Banks YB, Birnbaum LS: Laser Doppler measurements of cutaneous blood flow in ageing mice and rats. N.C. Society of Toxicology, Research Triangle Park, N.C. Jan. 20, 1990.

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**Monteiro-Riviere NA**, King JR, Manning TO: In vitro evaluation of bis-2-chloroethyl sulfide induced vesication in perfused porcine skin. N.C. Society of Toxicology, Research Triangle Park, N.C. Feb. 9, 1991.

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Srikrishna V, **Monteiro-Riviere NA:** Effects of paraquat on isolated perfused porcine skin. N.C. Society of Toxicology, Research Triangle Park, N.C. Feb. 9, 1991.

**Monteiro-Riviere NA, King JR:** *In vitro* evaluation of bis-2-chloroethyl sulfide induced vesication in perfused porcine skin. NCSU, Burroughs-Wellcome Symposium on Recent Advances in Drug and Toxicant Resistance, p.22, 1991. N.C. Society of Toxicology, Research Triangle Park, N.C. Feb. 9, 1991.

King JR, **Monteiro-Riviere NA:** A dose-response study on the toxicity of the vesicant arsenical, lewisite, in the isolated perfused porcine skin flap. NCSU, Burroughs-Wellcome Symposium on Recent Advances in Drug and Toxicant Resistance, p.23, 1991. N.C. Society of Toxicology, Research Triangle Park, N.C. Feb. 9, 1991.

Srikrishna V, **Monteiro-Riviere NA:** Effects of paraquat on isolated perfused porcine skin. NCSU, Burroughs-Wellcome Symposium on Recent Advances in Drug and Toxicant Resistance. p. 23, 1991. N.C. Society of Toxicology, Research Triangle Park, N.C. Feb. 9, 1991.

Williams PL, Brooks JD, Inman AO, **Monteiro-Riviere NA, Riviere JE:** A biophysically- based pharmacokinetic model of percutaneous penetration and absorption. Gordon Research Conference, Barrier Properties of Mammalian Skin Plymouth, N.H. August 18, 1993.

Inman AO, **Monteiro-Riviere NA:** Morphological Characterization of Ultraviolet B Phototoxicity in the Isolated Perfused Porcine Skin Flap. N. C. Society of Toxicology, Research Triangle Park, N.C. February, 19, 1994.

Zhang Z, Peters BP, **Monteiro-Riviere NA:** Sulfur mustard alkylates laminin by cross linking. N.C. Society of Toxicology, Research Triangle Park, N.C. February 19, 1994.

Zhang Z, Peters BP, **Monteiro-Riviere NA:** Assessment of the Cutaneous Basement Membrane in Sulfur Mustard-Induced Toxicity. International Symposium on Epidermolysis Bullosa, The University of North Carolina at Chapel Hill, April 26, 1994.

Zhang Z, Riviere JE, **Monteiro-Riviere NA:** Protective effects of sodium thiosulfate, cysteine, niacinamide, and indomethacin on sulfur mustard treated isolated perfused porcine skin. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, April 21, 1995.

Zhang Z, **Monteiro-Riviere NA:** Immunohistochemical comparison of integrin subunits  $\alpha 2, \alpha 3$ , and  $\beta 4$  expression in human skin, pig skin and isolated perfused porcine skin flap. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, March 22, 1996.

**Monteiro-Riviere NA, Zhang Z, Inman AO, Brooks JD, Riviere JE:** Molecular pathogenesis of sulfur mustard vesication in skin. Chemical Industry Institute of Toxicology Conference, Duke University, Durham N.C. April 29, 1996.

Allen DG, Potts RO, Tamada JE, Lee S, **Monteiro-Riviere NA:** Enzyme histochemical evaluation of transdermal iontophoretic delivery of saline in pig skin. Gordon Research Conference on "Barrier Function of Mammalian Skin", Tilton, NH, August 13, 1997.

Allen DG, **Monteiro-Riviere NA**: Epidermal protein modifications following transdermal lidocaine hydrochloride iontophoresis. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, April 25, 1998.

Scott KP, Darr D, **Monteiro-Riviere NA**: The reduction of UV phototoxicity by vitamin c formulations in porcine skin. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, April 25, 1998. **Awarded 2<sup>nd</sup> place for best poster.**

Allen DG, **Monteiro-Riviere NA**, Riviere JE: Keratinocytes produce inflammatory cytokines in response to exposure to Jet A, JP-8, and JP-8 (100) jet fuels. North Carolina State University, Toxicology Symposium, Raleigh, NC, March 25, 2000.

Allen DG, **Monteiro-Riviere NA**, Riviere JE: Identification of early biomarkers of inflammation produced by keratinocytes exposed to jet fuels Jet A, JP-8, JP-8 (100). North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, April 14, 2000.

Chou CC, **Monteiro-Riviere NA**, Riviere JE: Assessment of cytotoxicity to human epidermal keratinocytes after exposure to aliphatic and aromatic hydrocarbons. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 8, 2002. Also presented at the 2002 Carolina Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting, Raleigh, NC, April 25-27, 2002.

Xia XR, Baynes RB, **Monteiro-Riviere NA**, Leidy RB, Riviere JE: A novel technique to study percutaneous absorption by using a silastic membrane coated fiber. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 8, 2002. Also presented at the 2002 Carolina Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting, Raleigh, NC, April 25-27, 2002.

Udomkusonsri P, **Monteiro-Riviere NA**, Noga, EJ: Pathogenesis of the skin ulceration response in hybrid striped bass. The Annual North Carolina State International Research Exposition, Raleigh, NC, March 2002.

**Monteiro-Riviere NA**, Inman AO, Baynes RE, Riviere JE: Pyridostigmine bromide suppresses IL-8 in human epidermal keratinocytes and in isolated perfused skin exposed to DEET and permethrin. Presented at the 2002 Carolina Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting, Raleigh, NC, April 25-27, 2002.

Riviere JE, Brooks JD, Baynes RB, **Monteiro-Riviere NA**: Lack of effects of sulfur mustard and JP-8 jet fuel on percutaneous absorption of simultaneously administered topical permethrin and DEET. Presented at the 2002 Carolina Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting, Raleigh, NC, April 25-27, 2002.

Muhammad F, Baynes RE, **Monteiro-Riviere NA**, Xia XR, Riviere JE: Absorption through porcine skin exposed to various doses of jet fuel marker components determined with GC-FID using head space SPME fiber. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, April 11, 2003.

Mc Cord MG, Cormier D, Harrysson O, **Monteiro-Riviere NA**: Creating tissue scaffolds using 3-D ink jet printer. North Carolina Tissue Engineering Meeting, Research Triangle Park, NC, June 20, 2003.

Hill L, Bradford J, Mc Cord M, **Monteiro-Riviere NA**: Novel Construction of Blood Vessels. North Carolina Tissue Engineering Meeting, Research Triangle Park, NC, June 20, 2003.

Muhammad F, **Monteiro-Riviere NA**, Riviere JE: Topical hydrocarbon absorption in porcine skin previously exposed to JP-8 jet fuel. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 26, 2004.

Van der Merwe D, Riviere JE, Gehring R, Baynes RE, **Monteiro-Riviere NA**: A physiologically based pharmacokinetic model of fenthion absorption through porcine skin in a flow-through cell. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 18, 2005.

Rouse JG, Barron AR, Yang J, **Monteiro-Riviere NA**: Fullerene-based amino acid (BAA) interactions in human epidermal keratinocytes. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 17, 2006. **(Awarded 3<sup>rd</sup> place for best poster presentation)**

Zhang L, Zeng L, Yang J, Barron AR, **Monteiro-Riviere NA**: Biological interaction of functionalized single-wall carbon nanotubes in human keratinocytes. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 9, 2007.

Rouse, JG, Ryman-Rasmussen JP, Yang J, Barron AR, **Monteiro-Riviere NA**: Effects of mechanical flexion on the penetration of amino acid-derivatized nanoparticles in skin. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 9, 2007. **(Awarded 1st place for best poster)**

Rouse, JG, Ryman-Rasmussen JP, Yang J, Barron AR, **Monteiro-Riviere NA**: Effects of mechanical flexion on the penetration of amino acid-derivatized nanoparticles in skin. North Carolina State University, Biomedical Engineering Research Forum, Raleigh, NC, April 13, 2007. **(Awarded 1st place for best presentation)**

Zhang LW, Yu WW, Colvin VL, **Monteiro-Riviere NA**: Biological Interactions of quantum dot nanoparticles in skin and in human epidermal keratinocytes. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 7, 2008.

Samberg ME, Siekkinen AR, Oldenburg SJ, **Monteiro-Riviere NA**. Assessment of silver nanoparticles in human epidermal keratinocytes and in vivo pig skin. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 6, 2009.

Zhang LW, **Monteiro-Riviere NA**. Mechanisms of quantum dot nanoparticle uptake in a human cell line. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 6, 2009.

Samberg ME, Orndorff PE, **Monteiro-Riviere NA**. Silver nanoparticle toxicity in skin cells and efficacy in bacteria. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 12, 2010.

Zhang LW, **Monteiro-Riviere NA**. Lectins modulate multi-walled carbon nanotubes cellular uptake in human epidermal keratinocytes. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 12, 2010.

Samberg ME, Loba EG, **Monteiro-Riviere NA**. Toxicity, cellular uptake, and differentiation of human adult stem cells exposed to silver nanoparticles. North Carolina State University, College of Veterinary Medicine, Annual Research Forum, Raleigh, NC, March 11, 2011.

### **Meetings and Workshops Attended:**

Conference of Research Workers in Animal Disease, Chicago, IL, 1977-1983.

Scientific Writing Workshop, Purdue University, 1978.

Supraspinal Motor System, University Medical Center, St.Louis, MO, 1979.

Midwest Anatomists Association, St. Louis, MO, 1979; Toledo, OH, 1981.

International Conference on Veterinary Pharmacology, Therapeutics and Toxicology, Cambridge University, England, 1980.

North Carolina Society of Toxicology, R T P, NC, 1982-2000.

Formaldehyde Toxicology Conference, Washington, DC, 1982.

Complications of Viral and Mycoplasmal Infections in Rodents to Toxicology Research and Testing, Raleigh, NC, 1983.

American Society for Pharmacology and Experimental Therapeutics, 1983, 1985.

Life Science Institute; Respiratory System of Laboratory Animals, Histopathology Seminar, Harvard Medical School, June 26-28, 1984. (Harvard Travel Scholarship)

Toxicology of the Nasal Passages, Raleigh, NC, 1984.

Second International Symposium on Nephrotoxicity, University of Surrey, Guildford, Surrey, England, August 6-9, 1984.

U.S. Army Medical Research and Development Command. Fifth Annual Chemical Defense Bioscience Review, Johns Hopkins University Applied Physics Laboratory, Columbia, MD, May 29-31, 1985.

Swine in Biomedical Research Conference, University of Maryland, College Park, MD, June 17-21, 1985.

N.C. Society for Electron Microscopy/Microbeam Analysis, Chapel Hill, November 10, 1985.

National Society of Toxicology, New Orleans, LA, March 3-7, 1986.

Electron Microscopy Society of America, Baltimore, MD, August 2-4, 1987.

U.S. ARMY Medical Research and Development Command. Sixth Annual Chemical Defense Bioscience Review, Columbia, MD, August 5-7, 1987.

National Society of Toxicology, Dallas, TX, February 15-19, 1988.

North Carolina State University Toxicology Program, Burroughs-Wellcome Symposium, Raleigh, NC, March 1, 1988.

Toxicologic Pathology of the Upper Respiratory System, Durham, NC, September 15-16, 1988.

The 6th Symposium on Cutaneous Toxicity, American Academy of Dermatology, Washington, DC, September 27-28, 1988.

National Society of Toxicology, Atlanta, GA, February 27-March 3, 1989.

U.S. ARMY Medical Research and Development Command. Seventh Annual Chemical Defense Bioscience Review, Columbia, MD, August 15-17, 1989.

First World Congress of Veterinary Dermatology, Dijon, France, September 27-30, 1989.

National Society of Toxicology, Miami Beach, FL, February 12-16, 1990.

North Carolina State University, Burroughs-Wellcome Symposium on Oxygen Radicals and Aging. Raleigh, NC, March 28, 1990.

American Association of Pharmaceutical Scientists. Las Vegas, November 4-8, 1990.

National Society of Toxicology, Dallas, TX, February 25-March 1, 1991.

North Carolina State University, Burroughs-Wellcome Symposium on Recent Advances in Drug and Toxicant Resistance. Raleigh, NC, April 15, 1991.

DNA In Situ Hybridization in Molecular Pathology, Duke University, Durham, NC, July 19, 1991.

U.S. Army Medical Research and Development Command, Medical Defense Bioscience Review, Edgewood, MD August 7-9, 1991.

Gordon Research Conference "Barrier function of skin", Plymouth, NH, August 13-16, 1991.

American Association of Pharmaceutical Scientists, Washington, D.C., November 17-21, 1991.

International Symposium on Cell Proliferation and Chemical Carcinogenesis, National Institute of Environmental Health Sciences, Research Triangle Park, NC, January 14-16, 1992.

Sixteenth Hawaii Dermatology Seminar, Maui, Hawaii, February 14-19, 1992.

American Association of Pharmaceutical Scientists, San Antonio, TX, November 15-20, 1992.

National Society of Toxicology, New Orleans, LA, March 14-18, 1993.

U.S. Army Medical Research and Development Command, Medical Defense Bioscience Review, Baltimore, MD. May 10 -13, 1993.

Gordon Research Conference "Barrier Properties of Mammalian Skin", Plymouth, NH, August 15-20, 1993.

Pharm Tech Conference, Atlantic City, NJ, September 20-22, 1993.

American Association of Pharmaceutical Scientists, Orlando, FL., November 14-18, 1993.

National Society of Toxicology, Dallas, TX, March 13-17, 1994.

International Symposium on Epidermolysis Bullosa, Chapel Hill, NC, April 25-26, 1994.

In Vitro Toxicology, Correlation to In Vivo Models, Bethesda, MD, April 28-29, 1994.

American Association of Pharmaceutical Scientists, San Diego, CA, November 6-10, 1994

National Society of Toxicology, Baltimore, MD, March 5-9, 1995

International Symposium on Cytokines in Dermatology, San Francisco, CA, May 31-June 2, 1995.

American Veterinary Medical Association, Pittsburgh, PA. July, 1995.

American Chemical Society Meeting, Conference on Formulations and Drug Delivery, Boston, MA, October 10-13, 1995.

International Symposium on Swine in Biomedical Research, College Park, MD, October 22-25, 1995.

National Society of Toxicology, Anaheim, CA, March 9-14, 1996.

U.S. Army Medical Research and Development Command, Medical Defense Bioscience Review, Baltimore, MD. May 12 -16, 1996.

Gordon Research Conference on "Bioelectrochemistry", Newport, R.I., July 21-26, 1996.

Symposium on "The Toxicology of Nitric Oxide", Duke University Medical Center, Durham, N.C., October 14, 1996.

National Society of Toxicology, Cincinnati, Ohio, March 9-13, 1997.

Fifth International Conference in Perspectives in Percutaneous Penetration, La Grande-Motte, France, April 3, 1997.

European Association for Veterinary Pharmacology and Toxicology International Congress, Madrid, Spain, July 6-10, 1997.

Gordon Research Conference "Barrier Function of Skin", Tilton, NH, August 11-16, 1997.

North American Contact Dermatitis Group at the American Academy of Dermatology, Orlando, FL, February 25, 1998.

National Society of Toxicology, Seattle, WA, March 1-5, 1998.

United States Army Medical Research and Development Command, Medical Defense Bioscience Review, United States Army Medical Research Institute of Chemical Defense (USAMRICD), Aberdeen Proving Ground, MD, May 31-June 4, 1998.

American Association of Veterinary Pharmacology and Therapeutics, Monterey Bay, CA June 14-18, 1998.

American Veterinary Medical Association, Baltimore, MD, July 25-29, 1998.

23<sup>rd</sup> Annual Hawaii Dermatology Seminar, Maui, HI, February 15-20, 1999.

National Society of Toxicology, New Orleans, LA, March 14-18, 1999.

The 12<sup>th</sup> International Contact Dermatitis Symposium, San Francisco, CA, October 14-18, 1999.

American Association of Pharmaceutical Scientists, New Orleans, LA, November 14-18, 1999.

National Society of Toxicology, Philadelphia, PA, March 19-23, 2000.

8<sup>th</sup> International Congress of the European Association for Veterinary Pharmacology and Toxicology, Jerusalem, Israel, July 30-August 3, 2000.

Conference on Illnesses Among Gulf War Veterans: A Decade of Scientific Research, Washington, DC, January 24-26, 2001.

National Society of Toxicology, San Francisco, CA, March 25-29, 2001.

Nominations Committee, National Society of Toxicology, Rockville, MD, September 11, 2001.

Chemical Warfare Agent Toxicogenomics Conference, United States Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD November 9, 2001.

National Society of Toxicology, Nashville, TN, March 17-21, 2002.

Society of Environmental Toxicology and Chemistry (SETAC) Carolina Annual Meeting, Raleigh, NC, April 25-27, 2002.

International Conference on Antimicrobial Agents in Veterinary Medicine, Helsinki, Finland, August 4-8, 2002.

AFOSR JP-8 Jet Fuel Toxicokinetic Workshop, Raleigh, NC. November 21, 2002.

Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), Arlington, Virginia, December 5, 2002.

National Society of Toxicology, Salt Lake City, Utah, March 9-13, 2003.

Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), Bethesda, MD, March 10-11, 2004.

National Society of Toxicology, Baltimore, MD, March 21-25, 2004.

United States Environmental Protection Agency (EPA), Federal Insecticide, Fungicide and Rodenticide Act, Scientific Advisory Panel (FIFRA SAP), Arlington, Virginia, May 4-6, 2004

HESI, ILSI Health and Environmental Sciences Institute. Nanomaterial Safety Committee, Washington, D.C., June 9, 2004.

National Society of Toxicology Board of Publications, EPA, Research Triangle Park, NC, June 25, 2004.

National Academies Keck *Futures Initiative Designing Nanostructures* Pre-Conference. Washington, DC, September 18-19, 2004.



National Institutes of Health Superfund Review Panel, Research Triangle, Park, NC, October 4-7, 2004.

Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), Research Triangle Park, NC. October 20, 2004

Developing Experimental Approaches for Evaluation of Toxicological Interactions of Nanoscale Materials, Gainesville, FL, November 3-4, 2004

The 2nd Annual National Academies Keck *Futures Initiative Conference Designing Nanostructures at the Interface between Biomedical and Physical Systems*. Arnold and Mabel Beckman Center of the National Academies, Irvine, CA. November 18-21, 2004.

International Life Sciences Institute (ILSI) Risk Science Institute, Nanomaterial Toxicity Screening Working Group, February 23-25, 2005.

National Society of Toxicology, New Orleans, LA, March 6-10, 2005.

229<sup>th</sup> American Chemical Society National Meeting, San Diego, CA, March 13-17, 2005.

First Annual Meeting of the American Academy of Nanomedicine, Johns Hopkins Medical Center, Baltimore, MD, August 15-16, 2005.

Center for Biological and Environmental Nanotechnology 4<sup>th</sup> Annual Associated Nanotechnology Congress, Rice University, Houston, TX, October 10-11, 2005.

Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), Alexandria, VA, December 12, 2005.

The Franco- American Workshop for Nanotechnologies for a Suitable Environment, Rice University, Houston, TX, December 15-16, 2005.

The First International Conference on Nanotoxicology: Biomedical Aspects, Miami, FL, January 29-February 1, 2006.

The 45<sup>th</sup> Annual Meeting of the National Society of Toxicology, San Diego, March 5-9, 2006.

Woodrow Wilson International Center for Scholars. Working Conference on Engineered Nanomaterials and Human Health. Panel Member on Emerging Nanotechnologies. April 6-7, 2006.

Connetics, Center for Skin Biology, Palo Alto, CA, April 17-19, 2006.

Nanotechnology Applications in Environmental Health: Biog Plans for Little Particles, Research Triangle Park, NC, April 20, 2006.

University of North Carolina at Chapel Hill and North Carolina State Biomedical Engineering Research Review, Research Triangle Park, NC, April 22, 2006

Overcoming Obstacles to Effective Research Design in Nanotoxicology, Cambridge, MA, April 24-25, 2006.

The Second Annual Meeting of the American Academy of Nanomedicine, National Academy of Sciences, Washington, DC. September 9-10, 2006.

The 10<sup>th</sup> International Congress of the European Association for Veterinary Pharmacology and Toxicology, Torino, Italy. September 17-22, 2006.

Nanotechnology Conference on The Promise of Tomorrow and The Business of Nanotechnology, Dallas TX, September 27, 2006.

The 27<sup>th</sup> Annual Meeting of the American College of Toxicology, Indian Wells, CA, November 8, 2006.

United States Environmental Protection Agency, Arlington, VA, November 13, 2006.

International Conference on Nanotechnology Occupational and Environmental Health and Safety (NOEHS), Cincinnati, Ohio, December 7, 2006.

The 46<sup>th</sup> Annual Meeting of the National Society of Toxicology, Charlotte, NC, March, 25-29, 2007.

The 2<sup>nd</sup> Nanotoxicology Conference on-Overcoming Obstacles to Effective Research Design in Nanotoxicology. Venice, Italy, April 19-21, 2007. (**Program Committee Organizer, Session Chair**).

Experimental Biology 2007 Meeting- ASPET Section, **Organizer** April 29, 2007

International Council on Nanotechnology (ICON)- International Nanomaterial Environmental Health and Safety (NanoEHS) Research Needs Assessment. Swiss Reinsurance Company Center Global Dialogue Council in Ruschlikon, Switzerland. (June 5-7, 2007).

International Congress of Toxicology, Montreal, Canada, July 19, 2007.

The Gordon Research Conferences on the Barrier Function of Mammalian Skin, August 5-10, Newport, Rhode Island, 2007.

Trailblazing the Skin Frontier: evidence base, opportunities and training. George Washington University, Washington, DC, August 11-13, 2007.

US EPA Interagency Workshop on the Environmental Implications of Nanotechnology. Washington, DC, September 5-7, 2007.

Wake Forest University Medical Center, Winston-Salem, NC, September 27, 2007.

The Environmental Mutagen Society 38<sup>th</sup> Annual Meeting, Atlanta, Georgia. October 21, 2007.

HESI/ ILSI Health and Environmental Sciences Institute, Nanomaterial Environmental Health Project Committee. November 7, 2007.

The 7<sup>th</sup> International Conference and Workshop on Biological Barriers and Nanomedicine- Advanced Drug Delivery and Predictive non in vivo Testing Technologies. University of Saarland, Saarbruecken, Germany. February 20, 2008.

BASF- The Chemical Company, Ludwigshafen, Germany. February 22, 2008.

The 47<sup>th</sup> Annual Meeting of the National Society of Toxicology, Seattle, Washington. March 16-20, 2008.

The National Academies, National Research Council Committee for Review of the Federal Strategy to Address Environmental, health, and Safety Research Needs for Engineered Nanoscale Materials. Washington, DC. March 31- April 1, 2008.

University of Connecticut- Toxicology Scholars Colloquium at U Conn, Storrs, Ct, April 21, 2008.

NATO Advanced Research Workshop on Nanomaterials. Faro, Portugal, April 28, 2008.

Institute for Molecular and Nanoscale Innovation, Brown University, RI, May 7, 2008.

National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC, June 5, 2008.

Skin Forum, University of London, School of Pharmacy, London, England, June 26, 2008.

The Fourth International Conference on Antimicrobial Agents in Veterinary Medicine (AAVM), Prague, Czech Republic, August 24-28, 2008.

The 2<sup>nd</sup> International Conference on Nanotoxicology, Zurich, Switzerland, September 8-10, 2008.

Workshop on Enabling Standards for Nanomaterial Characterization, National Institute of Standards and Technology, Gaithersburg, MD, October 8-9, 2008.

National Taiwan University, College of Veterinary Medicine, Taipei, Taiwan. October 13-14, 2008, Center of Nanoscience and Nanotechnology, National Chung Hsing University, Taichung, Taiwan. October 15, 2008.

Chung Shan Medical University, College of Medicine, Department of Dermatology, Taichung, Taiwan. October 15, 2008.

College of Veterinary Medicine, National Chung Hsing University, Taichung, Taiwan. October 16, 2008.

National Chung Hsing University, Office of International Affairs, Taichung, Taiwan. October 15, 2008.

Animal Health Research Institute Council of Agriculture, Danshuei Township, Taiwan. October 17, 2008.

Emulsion Day Meeting, New York, NY, November 13-14, 2008.

International Life Science Institute (ILSI)-Health and Environmental Sciences Institute (HESI)- Nanomaterial Environmental, Health and Safety, Washington, DC, November 20, 2008.

Wiley Editorial Board, Hoboken, New Jersey, November 24, 2008.

Regional Workshop on the Responsible Development, Manufacture and Use of Nanomaterials. The Monterrey Technology Institute (ITESM), Tec de Monterrey, Monterrey, NL Mexico, December 9, 2008.

Mars, MSAC meeting on Nanomaterials and Food, Waldorf-Astoria, New York, NY, January 8, 2009.

The 48<sup>th</sup> Annual Meeting of the National Society of Toxicology, Baltimore, Maryland, March 15-19, 2009.

Toxicology and Risk Assessment from the Trenches, Cincinnati, Ohio. April 27-30, 2009.

The Gordon Research Conferences on the Barrier Function of Mammalian Skin, August 9-14, Waterville Valley, New Hampshire, 2009.

6<sup>th</sup> Key Symposium on Nanomedicine for the Journal of Internal Medicine, Toxicology and Risk Assessment, Grand Hotel Saltsjöbaden, Stockholm, Sweden, September 9-11, 2009.

Nanommune, 7<sup>th</sup> Framework Programme. Nanosciences, Nanotechnologies, Materials, and New Production Technologies. Hotel Skepparholmen, Stockholm, Sweden, September 12-13, 2009.

National Nanotechnology Initiative, Environmental, Health, and Safety and Technology Subcommittee of the National Science and Technology Council, Executive Office of the President. Arlington, VA, November 17-18, 2009.

The 49<sup>th</sup> Annual Meeting of the National Society of Toxicology, Salt Lake City, Utah, March 7-11, 2010.

The 8<sup>th</sup> International Conference and Workshop on Biological Barriers- Nanotoxicology and Nanomedicine, Saarland University, Saarbrücken, Germany, March 21-April 1, 2010.

The 12<sup>th</sup> International Perspectives in Percutaneous Penetration Conference, La Grande Motte, France, April 6-9, 2010.

The American Academy of Veterinary Pharmacology and Therapeutics (AAVPT) Workshop on Bioequivalence Issues in Veterinary Medicine. Potomac, Maryland, June 29, 2010.

The 37<sup>th</sup> Annual Meeting and Exposition of the Controlled Release Society. Portland, Oregon, July 10, 2010.

Nanomaterials and Worker Health Medical Surveillance, Exposure Registries and Epidemiologic Research. National Institute for Occupational Safety and Health, Keystone, Colorado, July 22, 2010.

The 3<sup>RD</sup> Millennium- A Summit of the World's Leaders in Nanofibers, Raleigh, NC, September 1, 2010.

The 7<sup>th</sup> International Seminar on Nanotechnology, Society and Environment, Rio de Janeiro, Brazil, November 11, 2010.

Purdue University, West Lafayette, Indiana, March 2-4, 2011

The 50<sup>th</sup> Annual Meeting of the National Society of Toxicology, Washington, DC, March 6-10, 2011.

June 2011