

CURRICULUM VITAE

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EDUCATION AND TRAINING

Undergraduate

1974-1978 North Carolina State University, Raleigh, NC BS, 1978 Zoology

Graduate

1980-1984 Duke University, Durham, NC Ph.D., 1985 Pharmacology

Post-Graduate

1984-1988 Duke University, Durham, NC Fellowship Toxicology Training Program, Richard Whorton, Ph.D.

APPOINTMENTS AND POSITIONS

ACADEMIC:

2010- Professor Department of Environmental and Occupational Health, Graduate School of Public Health, University of Pittsburgh
2010- Professor (secondary) Department of Pharmacology and Chemical Biology, School of Medicine, University of Pittsburgh
2011- Faculty Vascular Medicine Institute, University of Pittsburgh
2003-2010 Associate Professor Department of Environmental and Occupational Health, Graduate School of Public Health, University of Pittsburgh
2005- Associate Professor (secondary) Department of Pharmacology and Chemical Biology, School of Medicine, University of Pittsburgh
1998-2003 Associate Professor Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH

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|-----------|---------------------------------|--|
| 1991-1998 | Assistant Professor | Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH |
| 1988-1991 | Research Assistant Professor | Division of Clinical Pharmacology, Thomas Jefferson Medical School, Philadelphia, PA |
| 1988-1991 | Assistant Professor (secondary) | Department of Pharmacology, Thomas Jefferson Medical School, Philadelphia, PA |
| 1988 | Medical Research Associate | Department of Medicine, Duke University, Durham, NC |

NON-ACADEMIC

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| 2014-2017 | Councilor | Society of Toxicology |
| 2012-2014 | Member, External Advisory Committee | Superfund Research Program, University of Arizona |
| 2002-2008 | Member, External Advisory Committee | Center for Environmental Sciences, University of Montana-Missoula |
| 2005-2008 | Chair, External Advisory Committee | Center for Environmental Sciences, University of Montana-Missoula |
| 2000-2002 | Chair | Radiation Safety Committee, Dartmouth College. |
| 2000-2003 | Head, Molecular Biology Core | Center for Environmental Health Sciences, Dartmouth College, Hanover, NH. |
| 1991-2003 | Member, Molecular Therapeutics Program | Norris Cotton Cancer Center, Dartmouth Medical School, Hanover, NH. |
| 1991-1994 | Clinical Trial Design Consultant | Hoechst Marion Roussel (Marion Merrell Dow), Kansas City, MO. |
| 1988-1991 | Head, Laboratory for Investigative Medicine | Division of Clinical Pharmacology, Thomas Jefferson University, Philadelphia, PA |
| 1988-1991 | Clinical Trial Design Consultant | Merck Sharp and Dohme Research Laboratories, West Point, PA. |

MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

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| 1995- present | North American Vascular Biology Organization (American Society for Investigative Pathology) |
| 2001-present | American Physiological Society |
| 1994-present | Society for Redox Biology and Medicine |
| 2001-present | Society of Toxicology (member, Education Committee 2008-2011, Metals Specialty Section President 2010-2011, member, Communications Committee 2013-2014, Councilor 2014-2017, and Allegheny-Erie Chapter, Society of Toxicology (vice president 2005-2015) |

Honors

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| 2005 | Best Paper of the Year in Toxicological Sciences, Society of Toxicology |
| 2016 | National Institute of Environmental Health Science top publication from research funded grants. |

PROFESSIONAL ACTIVITIES

1. Teaching

a. Courses Taught

University of Pittsburgh:

| Years | Course Number: Title | Hours of lecture, credits, average enrollment | Primary Instructor |
|------------|---|---|--------------------|
| 2007- | EOH 2013 Environmental Health and Disease | 10, 3, 115 | Barchowsky |
| 2009-2013 | MED 5224 MS-2 Medical Pharmacology | 6,?, 100 | Defranco |
| 2013-2016 | MED 5115 Cellular and Pathologic Basis of Disease | 3, 3, 100 | Defranco |
| 2009-2015 | MED 5217 Cardiology | 2, ?, 12 | Defranco |
| 2007-2014 | MED 5222 MS-2 Digestion and Nutrition | 2,?, 100 | Duker |
| 2009- | EOH 2180 Introduction to risk assessment | 1.5, 3, 15 | Fabisiak |
| 2008- | EOH 2022 Pathophysiology | 3, 3, 8 | St. Croix |
| 2008- | EOH 2310 Molecular Fundamentals of Environmental Health | 3, 3, 8 | Opresko |
| 2008 | EOH 2304 Biomarkers and Molecular Epidemiology. | 3,2,6 | Ragin |
| 2007-2015 | MS-2 Medical School Pharmacology Course: Neuropharmacology Workshop | 3,?, 10 | Defranco |
| 2007- | EOH 2504 Principles of Environmental Exposure | 1.5, 3, 13 | Clougherty |
| 2008- | EPI 2220 Environmental Epidemiology | 1.0, 3, 10 | Talbott |
| 2006- | EOH 2175 Principles of Toxicology (dermal toxicology) | 1,3, 12 | Fabiziak |
| 2006- | MSCMP 3750 Angiogenesis: Molecular Pathways and Physiological Functions | 6, 3, 7 | Nagarajan |
| 2004- 2007 | EOH 2012: Health, Disease, and Environment II | 6,1, 110 | Barchowsky |
| 2004- 2005 | EOH 2309 Bioorganic Toxicology | 2, 2, 6 | Pitt |
| 2005 | EOH 2308 Model Systems | 6, 2, 6 | Stripp |
| 2004, 2006 | EPI 2220: Environmental Epidemiology | 1,2,10 | Talbott |
| 2004 | PA-0101: Introduction to Public Health | 2,2,30 undergraduate | Bradford Campus: |

c. Graduate Student Essays, Theses, and Dissertations

University of Pittsburgh

Adam C. Straub, 2008, Ph.D. Environmental Health Sciences. Thesis Research: Mechanisms for arsenic-stimulated sinusoidal cell capillarization. Present position: Assistant Professor, Department of Pharmacology and Chemical Biology, University of Pittsburgh.

Antonia A. Nemeč, 2009, Ph.D. Environmental Health Sciences. Thesis Research: Signaling mechanisms of chromium regulation of protective pulmonary gene inducibility. Present position: Assistant Professor, Florida State University.

Diana Yesica Garciafigueroa, 2013, Ph.D. Environmental Health Sciences. Thesis Research: Receptor cross talk in arsenic-impaired fat metabolism. Present position: Postdoctoral Fellow, Allegheny Health System.

Shilpi Oberoi: 2014, Ph.D. Environmental Health Sciences. Thesis Research: Estimating the Global Burden of Disease caused by Arsenic in Food.

Amin Cheikhi: 2017, Ph.D. Environmental Health Sciences. Thesis Research: Power laws govern mitochondrial optimization of inheritable cellular memory and fate decisions. Present Position: Postdoctoral Fellow, Department of Physical and Rehabilitative Medicine, University of Pittsburgh.

Teresa Anguiano, 2013-, Predoctoral Fellow, Environmental Health Sciences. Thesis Research: Receptors in mediating arsenic-impaired stem cell function.

Dartmouth Medical School

Melinda D. Treadwell, 1996, Ph.D. Pharmacology. Thesis Research: Activation of vascular endothelial cells in response to mineral fibers. Present Position: Professor and Dean of Professional and Graduate Studies, Keene State College, NH.

Jennifer A. Shumilla, 1999, Ph.D. Chemistry. Thesis Research: Mechanisms for inhibition of cytokine-induced lung epithelial cell gene expression by chromium. Senior Manager, Development Sciences, Genentech, San Francisco, CA

MJR Robert R. Roussel, 2000, Ph.D. Pharmacology. Thesis Research: Dose dependent effects of sodium arsenite on NF- κ B and interleukin-8 in bronchial epithelial cells. Present Position: Deputy Commander, US Army Research Institute of Environmental Medicine.

Angeline S. Andrew, 2001, Ph.D. Pharmacology and Toxicology. Thesis Research: Mechanisms for regulation of lung epithelial cell fibrinolysis and cytokine expression by nickel. Present Position: Assistant Professor, Dartmouth Medical School, Dept of Epidemiology.

Nicole V. Soucy, 2003, Ph.D. Pharmacology and Toxicology. Thesis Research: Mechanisms of arsenite-induced vascular disease. Present Position: Advanced Toxicology Specialist, 3M Corporation, St. Paul, MN

Kimberly A. O'Hara, 2004, Ph.D. Pharmacology and Toxicology. Thesis Research: Signaling mechanisms for chromium-induced gene activation in pulmonary epithelial cells. Present Position: Lecturer, University of Manitoba, Winnipeg, Canada

d. Student Awards and Honors.

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| 1995 | Melinda D. Treadwell | Young Investigator Award, Oxygen Society |
| 1999 | Angeline S. Andrew | First Prize, Best Graduate Student Poster Award, Northeast Society of Toxicology |

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| 2000 | Angeline S. Andrew | Third Annual Karen Wetterhahn Award, Superfund Basic Research Program, National Institute of Environmental Health Sciences. |
| 2000 | Angeline S. Andrew | Outstanding Scientific Presentation Award, Oxygen Society |
| 2000 | Angeline S. Andrew | Environmental Carcinogenesis Conference Poster Award, Vermont Cancer Center |
| 2000 | Angeline S. Andrew | Travel Award - 2000 Conference on Hazardous Waste Research, National Institute of Environmental Health Sciences |
| 2001 | Nicole V. Soucy | Young Investigator Award, Oxygen Society |
| 2002 | Nicole V. Soucy | Third Place, Metals Specialty Section |
| 2005 | Nicole V. Soucy | Best Paper of the Year (2004) in <i>Toxicological Sciences</i> , Society of Toxicology |
| 2002 | Kimberley A. O'Hara | Travel Award, Society of Toxicology |
| 2002 | Kimberley A. O'Hara | Honorable Mention, Carl C. Smith Graduate Student Award, Mechanisms Specialty Section, Society of Toxicology |
| 2002 | Kimberley A. O'Hara | Young Investigator Award, Oxygen Society |
| 2003 | Kimberley A. O'Hara | Third Place, Student Abstract Award, New England Pharmacologists |
| 2003 | Kimberley A. O'Hara | Taylor & Francis Graduate Student Award, Metals Specialty Section, Society of Toxicology |
| 2004 | Kimberley A. O'Hara | Young Investigator Award, Society for Free Radical Biology and Medicine |
| 2005 - 2008 | Adam C. Straub | STAR Fellowship award, Environmental Protection Agency |
| 2006 | Antonia A Nemec | Allegheny-Erie Society of Toxicology Travel Award |
| 2006 | Adam C. Straub | Keleti Prize for Excellence in Environmental Health |
| 2006 | Adam C. Straub | Best Poster, Allegheny-Erie Regional Chapter of the Society of Toxicology annual meeting. |
| 2006 | Adam C. Straub | Outstanding student in the field of environmental public health. National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry (NCEH/ATSDR). |
| 2006 | Harina Vin | MaryAnne Stock Student Research Award, Allegheny-Erie Regional Chapter of the Society of Toxicology |
| 2008 | Adam C. Straub | First Place, Doctoral Student Award, Dean's Day, Graduate School of Public Health. University of Pittsburgh. |
| 2008 | Adam C. Straub | Rosenkranz Award for Public Health Significance of Research, Dean's Day, Graduate School of Public Health. University of Pittsburgh. |
| 2008 | Antonia A. Nemec | Keleti Award for Excellence in Environmental Health. Dean's Day, Graduate School of Public Health. University of Pittsburgh. |
| 2008 | Adam C. Straub | First Place, Society of Toxicology Metals Specialty Section Student Award. |
| 2008 | Antonia A. Nemec | Third Place, Society of Toxicology Metals Specialty Section Student Research Award. |
| 2009 | Antonia A. Nemec | Third Place, Society of Toxicology Metals Specialty Section Student Research Award. |

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| 2009 | Antonia A. Nemeč | Best Research Presentation, Allegheny & Erie Regional Chapter of the Society of Toxicology. |
| 2012 | Yesica Garciafigueroa | Mary Anne Stock Student Research Award, Allegheny-Erie Regional Chapter of the Society of Toxicology |
| 2013 | Yesica Garciafigueroa | Second Place, Society of Toxicology Metals Specialty Section Student Research Award. |
| 2013 | Shilpi Oberoi | Second Place, Dean's Day Poster Award |
| 2015 | Amin Cheikhi | First Place, Society of Toxicology Metals Specialty Section Student Award. |

e. Service on Comprehensive Examination Committees

| Dates Served | Student Population | Type of Exam/ Number of Questions |
|---------------------|---|---|
| June 11, 2004 | 1 student Infectious Diseases and Microbiology | Ph.D. Preliminary examination |
| June 30, 2006 | 2 students, 1 Molecular Toxicology, 1 Pharmacology | Ph.D. Preliminary examination, Comprehensive Exams, Dissertation Defense |
| 2007 | 2 students, Environmental and Occupational Health | Ph.D. Preliminary examinations |
| 2008-2009 | 2 students, Environmental and Occupational Health | Dissertation Defense |
| 2011-2012 | 3 students, 2 Environmental and Occupational Health, 1 Pharmacology and Chemical Biology | Ph.D. Preliminary examination, Comprehensive examination |
| 2013-2014 | 5 students, 2 Environmental and Occupational Health, 3 School of Engineering | Ph.D. Preliminary and Comprehensive Exams |
| 2014-2015 | 7 students, 2 Environmental and Occupational Health, 4 School of Engineering, 1 Pharmacology and Chemical Biology | Thesis research committees, Comprehensive examinations, Dissertation Defense. |
| 2014-2015 | 4 students, 2 Environmental and Occupational Health, 2 Infectious Disease and Microbiology | Ph.D preliminary and comprehensive examinations, MPH thesis examination |
| 2015-2016 | 7 students, 3 Environmental and Occupational Health, 4 School of Engineering | Ph.D. preliminary examination, Dissertation Defense |
| 2016-2017 | 5 students, 3 Environmental and Occupational Health, 2 School of Engineering. | Ph.D. preliminary examination, Dissertation Defense |

f. Supervision of Post-Doctoral Students, Residents, and Fellows

- 1997-2000 Karol R. Smith, Ph.D., Mechanisms of arsenite-induced signaling in endothelial cells. Present position: Clinical Nutritionist.
- 2001-2003 Jeffrey S. Shenberger. M.D. K08-HL-071905 Research Fellowship. Present position: Department of Pediatrics, Pennsylvania State University College of Medicine, Hershey, PA
- 2003- 2004 Rasilaben J. Vaghjiani, visiting Pre-doctoral Fellow. Present position: Post-doctoral fellow, Imperial College, London.
- 2005-2006 Partha Basu, F33 ES014152 sabbatical fellowship: Proteomic determination of arsenical action. Present Position: Professor and Chair, Department of Chemistry and Chemical Biology, Indiana University-Purdue University, Indianapolis, IA.
- 2011-2015 Kevin Beezhold, Ph.D. MicroRNA in arsenic regulation of cell differentiation. Research Fellow, Childrens Hospital, Pittsburgh, PA.

g. Other Teaching and Training

Dartmouth College Undergraduate Training

Undergraduate Students

- Eric W. Springer, 1993, Honors Thesis, Biology: "The effects of antioxidants on protein phosphorylation and transacting factor activation in vascular endothelial cells." Present Position: M.D.
- Leigh C. Elmore, 1996, Senior Thesis, Chemistry: "Endothelial cell gene expression as a result of arsenite exposure". Present Position: M.D.
- Benjamin M. Lannon, 1996, Senior Research, Biology, "Development of reverse transcriptase polymerase chain reaction to quantify the effects of toxins on endothelial cell urokinase-type plasminogen activator receptor." Present position: MD
- Amy L. Ulfers, 1998, Honors Thesis, Chemistry, "The effect of chronic arsenic exposure on reactive oxygen, formation and gene expression in endothelial cells." Present Position: Graduate student, Department of Pharmacology at Brown.
- Ryan J. Broderick, 1998, Honors Thesis, Chemistry, "The role of NF- κ B in chrysotile-induced interleukin-8 expression in epithelial cells." Present Position: MD
- Brian C. Richardson, 2001, Honors Thesis, Chemistry, "The effects of arsenic on nitric oxide production in vascular endothelial cells." Present Position: Graduate Student, Department of Biology, Princeton University.
- Caitlin Biedron, 2002, Center for Environmental Health Sciences Research Fellowship, "Chromium(VI)-induced signaling complexes may lead to tissue inhibitor of metalloproteinase-1 (TIMP-1) activation."

University of Pittsburgh Undergraduate/High School Training

- Harina Vin, 2006, Summer research intern, "Arsenic regulation of liver stellate cell activation." Present position, undergraduate Rice University.
- Sarabeth A. Sandel, Summer undergraduate research intern 2007, "Chromium regulation of nickel-induced metallothionein in lung epithelial cells." Present position, undergraduate, Grove City University.
- Lindsey Zubritsky 2008-2009 Environmental Health Sciences summer internship. Role of dicysteine containing motif in chromium VI activation of tyrosine kinase activity. Present Position: Medical Student, Penn State, Hershey.
- Anastasia Stolz, 2009 RMB-ERC summer internship, Cytotoxicity of magnesium alloys. Present Position: undergraduate student at Dayton, University.

Amy Goodfriend, 2010 Environmental Health Sciences summer internship. Arsenic effects on lipid metabolism. Present position: Graduate student, University of Texas.

Vania Brister, 2012, Doris Duke Fellowship, Arsenic impact on osteogenic stem cell differentiation.

Hannah Klei 2012, Summer High School Intern, Arsenic effects on chondrogenesis.

Stephanie Akaki 2015, CEBIG Summer High School Intern, Long term epigenetic change from childhood arsenic anticancer therapy.

2. Research and Training

a. Grants and Contracts Received

Active

| Years | Grant number and title | Source | Annual direct costs | Effort |
|-------------|---|--------|---------------------|--------|
| 02/16-01/21 | R01ES025529-01 Dysfunctional Muscle Remodeling and Regeneration in Environmental Disease | NIEHS | \$375,000 | 30% |
| 12/13-11/18 | 1R01ES023696-01 Mechanisms of arsenic-induced muscle morbidity and reduced regenerative capacity | NIEHS | \$300,000 | 33% |
| 05/15-04/17 | 3R01ES023696-02S1 Mechanisms of arsenic-induced muscle morbidity and reduced regenerative capacity. Research Supplement to Promote Diversity in Health-Related Research | NIEHS | \$58,792 | 0% |
| 9/14-6/19 | 1R01ES024233-01 Epigenetic and phenotypic effects of arsenic: impacts on cognition and Alzheimer's Disease (PI: Lefterov) role: co-investigator | NIEHS | \$350,000 | 5% |
| 9/08-8/16 | NSF ERC: Revolutionizing Metallic Biomaterials (Borovitz) Project ES1.8 High content analysis of metal toxicity and effects. | NSF | \$25,000 | 5% |

Past

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| 9/12-8/14 | 1R21ES021243-01 Epigenomic impact of diet and toxicant exposure in Alzheimer's disease etiology MPI: A Barchowsky, I Lefterov | NIEHS | \$135,000 | 5% |
| 12/07-12/12 | R01 ES013781-01 Mechanisms for arsenic induced vascular disease. | NIEHS | \$225,000 | 40% |
| 9/11 | R13 ES021130-01 Toxicology Education Summit | NIEHS | \$4000 | 0% |
| 7/08-6/09 | R01ES013781-01S1 Mechanisms for arsenic induced vascular disease: minority supplement. | NIEHS | \$45,000 | 0% |
| 8/01-7/07 | R01 ES10638-01 Regulation of transcriptional competence by chromium. | NIEHS | \$200,000 | 40% |

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|-------------|--|-------------------------|-----------|-----|
| 4/95-3/05 | P42 ES07373-07 Toxic Metals in the Northeast Project 1: Mechanisms for arsenic-induced vascular disease. | NIEHS | \$157,000 | 40% |
| 8/96 -7/99 | R01 HL52738-01: Molecular mechanisms for endothelial cell activation in response to asbestos. | NHLBI | \$100,000 | 60% |
| 7/92 - 6/95 | Council for Tobacco Research: Mechanism for oxidant-induced cell-cell interactions. | CTR | \$45,000 | 10% |
| 1/91-12/94 | R01 HL44454: Endothelial cell biology following oxidative stress | NHLBI | \$71,000 | 50% |
| 1992-1995 | Investigations of the effects of anticholinesterase agents in relief of Alzheimer's disease | Marion Merrell Dow, Inc | \$33,000 | 5% |
| 1989-1991 | Endothelial cell biology following oxidative stress | PhMAF | \$50,000 | 5% |

B. Invited Lectures and Major Seminars Related to Research (past 5 years):

January 2012: Harvard School of Public Health, Pathogenic receptor-mediated signaling in arsenic-stimulated vascular remodeling and metabolic disease promotion. Boston, MA.

March 2012: University of New Mexico Health Sciences Center, Arsenic and metabolic dysfunction: a mechanism for environmental disease. Albuquerque, NM.

September 2012: WHO Foodborne Disease Burden Epidemiology Reference Group (FERG); Chemical and Toxins Task Force: Arsenic risk in food. Bilthoven, Netherlands.

October 2012: University of Arizona G-coupled protein receptors in arsenic stimulated metabolic dysfunction. Tucson, AZ.

January 2013: University of Kansas Medical Center, Receptors in arsenic-induced tissue remodeling and metabolic dysfunction. Kansas City, KS

February 2013: University of Kentucky, Receptors for arsenic-induced tissue remodeling and metabolic dysfunction. Lexington, KY.

March 2013: Society of Toxicology workshop on Dietary Arsenic- Forms, Hazards, and Risks (co-chair). Non-cancer disease risk promoted by low level arsenic exposures. San Antonio, TX.

March 2013: McGowan Institute for Regenerative Medicine: Wound Healing Research Seminar Series, Environmental Arsenic Exposure: Impact and Mechanisms in Tissue Remodeling and Regeneration. Pittsburgh, PA.

September 2013: Mitochondrial, Aging, Metabolism group: Do maladaptive bioenergetic responses to environmental stressors promote metabolic disease and reduced regenerative capacity? University of Pittsburgh, PA.

October 2013: West Virginia University, Environmental Arsenic Exposure: Mechanisms for Pathogenic Tissue Remodeling and Impaired Regeneration. Morgantown, WV.

January 2014: University of Oregon, Mechanisms for pathogenic, arsenic-induced metabolic tissue remodeling. Corvallis, OR.

August 2014: 6th Symposium on Biodegradable Metals, Keynote address: Metals: Elemental Physiology and Pathogenesis. Matatea, Italy.

October 2014: Civil and Environmental Engineering, Carnegie Melon University, Arsenic in Food and Water: A Global Public Health Risk, Pittsburgh, PA.

April 2015: Vascular Medicine Institute, University of Pittsburgh, Arsenic and stem cell regeneration: novel mitochondrial mechanism for an ancient poison. Pittsburgh, PA

June 2015: 14th International Conference on Long-Term Complications of Treatment of Children and Adolescents for Cancer: Toxin-Related Endothelial Cell and Vascular Injury. Arlington, VA.

October 2015: Society of Toxicology Central State Regional Chapter 2015 Annual Meeting: Arsenic and stem cell regeneration: novel mitochondrial mechanisms for an ancient poison. Kansas City, KS.

February 2016: Society of Toxicology ToxScholar visit to Washington College: Development of a Maryland Toxicologist: Farm to Pharmacology to Environmental Health. Chestertown, MD

March 2017: University of Rochester, Environmental impact on skeletal muscle maintenance and regeneration: stem cell nature or niche, Rochester, NY.

April 2017: Columbia University, Mailman School of Public Health, Arsenic and mitochondria in epigenetic regulation of skeletal muscle stem cells and regeneration. New York, NY

PUBLICATIONS

1. Refereed Articles

1. Routledge PA, A **Barchowsky**, TD Bjornsson, BB Kitchell and DG Shand. Lidocaine plasma protein binding. *Clin Pharm Ther* 27:347-351, 1980.
2. Routledge PA, DG Shand, A **Barchowsky**, GS Wagner and WW Stargel. The relationship between α_1 -acid glycoprotein and altered lidocaine disposition in patients with myocardial infarction. *Clin Pharm Ther* 30:154-157, 1981.
3. Routledge PA, WW Stargel, BB Kitchell, A **Barchowsky**, and DG Shand. Sex related differences in the plasma binding of lignocaine and diazepam. *Brit J Clin Pharm* 11:245-250, 1981.
4. Routledge PA, WW Stargel, AL Finn, A **Barchowsky** and DG Shand. Lignocaine disposition in blood in epilepsy. *Br J Pharmacol* 12:663-666, 1981.
5. Shand DG, C Verghese, A **Barchowsky**, SC Hammill and ELC Pritchett. High performance liquid chromatographic analysis of a new anti-arrhythmic drug, pirmenol, in biological fluids. *J Chromatog Biomed Appl* 224:343-347, 1981.
6. Stargel WW, DG Shand, PA Routledge, A **Barchowsky** and GS Wagner. Clinical comparison of rapid infusion and multiple injection methods for lidocaine loading. *Am Heart J* 102:872-876, 1981.

7. Whorton AR, SL Young, JL Data, A **Barchowsky** and RS Kent. Mechanism of bradykinin-stimulated prostacyclin synthesis in porcine aortic endothelial cells. *Biochim Biophys Acta* 712:79-87, 1982.
8. **Barchowsky** A, DG Shand, WW Stargel, GS Wagner and PA Routledge. On the role of α_1 -acid glycoprotein in lignocaine accumulation following myocardial infarction. *Brit J Clin Pharm* 13:411-415, 1982.
9. **Barchowsky** A, WW Stargel, DG Shand and PA Routledge. Saliva concentrations of lidocaine and its metabolites in man. *Ther Drug Monit* 4:335-339, 1982.
10. Handel F, FA Luzzi, TL Wenger, A **Barchowsky**, DG Shand and HC Strauss. Lidocaine and its metabolites in canine plasma and myocardium. *Cardiovasc Pharmacol* 5:44-50, 1983.
11. **Barchowsky** A, JL Data and AR Whorton. Effects of prostaglandin synthesis inhibition on direct stimulation of renin release from rabbit renal cortical slices. *Prostaglandins* 27:51-68, 1984.
12. Luzzi FA, TL Wenger, JK Klinger, A **Barchowsky** and HC Straus. Simultaneous determinations of lidocaine and its metabolites in plasma and myocardium. *J Chromatog* 311:291-299, 1984
13. Routledge PA, LD Lazar, A **Barchowsky**, WW Stargel, GS Wagner and DG Shand. A free lignocaine index as a guide to unbound drug concentrations. *Br J Clin Pharmac* 20:695-698, 1985.
14. **Barchowsky** A, RS Kent and AR Whorton. Recovery of porcine aortic endothelial cell prostaglandin synthesis following inhibition by sublethal concentrations of hydrogen peroxide. *Biochim Biophys Acta* 927:372-381, 1987.
15. **Barchowsky** A, JL Data and AR Whorton. Inhibition of renin release by analogs of adenosine in rabbit renal cortical slices. *Hypertension* 9:619-625, 1987.
16. **Barchowsky** A, K Tabrizi, RS Kent and AR Whorton. Inhibition of prostaglandin synthesis following metabolism of menadione by endothelial cells. *J Clin Invest* 83:1153-1159, 1989.
17. Routledge PA, Stargel WW, **Barchowsky** A, Wagner GS, Shand DG. Factors affecting free (unbound) lignocaine concentration in suspected acute myocardial infarction. *Br. J. Clin Pharm* 28:593-597, 1989.
18. Buckley BJ, A **Barchowsky**, RJ Dolor, and AR Whorton. Regulation of arachidonic acid release in vascular endothelium: calcium-dependent and independent pathways. *Biochem J* 280:281-287, 1991.
19. Benz CC, SB Iyer, H Asagari, SA Martin, FR Aronson, and A **Barchowsky**. Gossypol effects on endothelial cells and tumor blood flow. *Life Sciences* 49:PL67-PL72, 1991.
20. Goldberg MR, W Tanaka, A **Barchowsky**, TE Bradstreet, J McCrea, MW Lo, EJ McWilliams, and TD Bjornsson. Losartan, a non-peptide angiotensin antagonist: effects on blood pressure, PRA and angiotensin II levels. *Hypertension* 21:704-713, 1993.
21. **Barchowsky** A, ME Williams, CC Benz, KP Chepenik. Oxidant-sensitive protein phosphorylation in endothelial cells. *Free Rad Biol Med* 16:771-777, 1994.
22. Rochelle LG, H Kruszyna, R Kruszyna, A **Barchowsky**, DE Wilcox, and RP Smith. Bioactivation of nitroprusside by porcine endothelial cells. *Toxicol Appl Pharmacol* 128:123-128, 1994.
23. Sramek, JJ., GA Block, SA Reims, SF Sawin, A **Barchowsky**, and NR Cutler. A multiple-dose safety trial of heptastigmine in Alzheimer's disease, with pharmacodynamic observations of red blood cell cholinesterase. *Life Sciences* 56:319-326, 1995.
24. Janssen, YMW, A **Barchowsky**, MD Treadwell, KE Driscoll, and BT Mossman. Asbestos induces NF- κ B DNA binding activity and NF- κ B dependent gene expression in tracheal epithelial cells. *Proc Nat Acad Sci* 92:8458-8462, 1995.

25. Cutler, NR, RD Seifert, MM Schleman, JJ Sramek, OJ Szylleyko, DR Howard, A **Barchowsky**, TS Wardle, EP Brass. Acetylcholinesterase inhibition by zifosilone: pharmacokinetics and pharmacodynamics. *Clin Pharm Ther* 58:54-61, 1995.
26. **Barchowsky**, A, SR Munro, SJ Morana, MP Vincenti, and MD Treadwell. Oxidant-sensitive and phosphorylation-dependent activation of NF- κ B and AP-1 in endothelial cells. *Am J Physiol* 269:L829-L836, 1995.
27. Vincenti, MP, CI Coon, LA White, A **Barchowsky**, and CE Brinckerhoff. Src-related tyrosine kinases regulate transcriptional activation of the interstitial collagenase gene, MMP-1, in interleukin-1-stimulated synovial fibroblasts. *Arthritis and Rheumatism* 39(4):574-582, 1996.
28. Treadwell, MD, BT Mossman, and A **Barchowsky**. Induction of neutrophil adherence to endothelial cells following exposure to chrysotile asbestos. *Toxicol Appl Pharmacol* 139:62-70, 1996.
29. **Barchowsky**, A, EJ Dudek, MD Treadwell, and KE Wetterhahn. Arsenic induces oxidant stress and NF- κ B activation in cultured aortic endothelial cells. *Free Radic Biol Med* 21:783-790, 1996.
30. Janssen, YMW, KE Driscoll, B Howard, TR Quinlan, MD Treadwell, A **Barchowsky**, and BT Mossman. Asbestos causes translocation of p65 protein and NF- κ B DNA binding in rat lung epithelial and pleural mesothelial cells. *Am J Pathol* 151:389-401, 1997.
31. **Barchowsky**, A, BM Lannon, LC Elmore, and MD Treadwell. Increased focal adhesion kinase- and urokinase-type plasminogen activator receptor-associated cell signaling in endothelial cells exposed to asbestos. *Environ Health Perspect* Volume 105, Supp 5, pp. 1131-1137, 1997.
32. Mossman, BT, S. Faux, Y Janssen, LA Jimenez, C Timblin, C Zanella, J Goldberg, E Walsh, A **Barchowsky**, and K Driscoll. Cell Signaling pathways elicited by asbestos. *Environ Health Perspect* Volume 105, Supp 5, pp. 1121-1125, 1997.
33. Shumilla, JA, KE Wetterhahn, and A **Barchowsky**. Inhibition of NF- κ B DNA binding by chromium, cadmium, mercury, zinc, and arsenite in vitro: evidence of a thiol-dependent mechanism *Arch. Biochem. Biophys.* 349:356-362, 1998.
34. Suh, N, T Honda, HJ Finlay, A **Barchowsky**, C. Williams, NE Benoit, Q Xie, GW Gribble, and MB Sporn. Novel tritepenoids suppress inducible nitric oxide synthase (iNOS) and inducible cyclooxygenase (COX-2) in mouse macrophages. *Cancer Res*, 58:717-723, 1998.
35. **Barchowsky**, A, RR Roussel, RJ Krieser, BT Mossman, MD Treadwell. Expression and activity of urokinase and its receptor in endothelial and pulmonary epithelial cells exposed to asbestos. *Toxicol Appl Pharmacol* 152:388-396, 1998.
36. Shumilla, JA and A **Barchowsky**. Inhibition of protein synthesis and by chromium(VI) differentially affects expression of urokinase and its receptor in human type II pneumocytes. *Toxicol Appl Pharmacol* 158:288-295, 1999.
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3. Reviews/Proceedings

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2. Prozialeck, WC, JR Edwards, DW Nebert, JM Woods, **A Barchowsky**, and WD Atchison. The Vascular System as a Target of Metal Toxicity. *Toxicol Sci* 102:207-218, 2008.
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4. Mossman, BT, M Lippman, TW Hesterberg, KT Kelsey, **A Barchowsky**, and JC Bonner. Pulmonary endpoints (lung carcinomas and asbestosis) following inhalation exposure to asbestos. *J Toxicol Environ Health B Crit Rev*. 14:76-121, 2011. PMID: 21534086
5. States, JC, **A Barchowsky**, IL Cartwright, JF Reichard, BW Futscher, RC Lantz. Arsenic Toxicology: Translating between Experimental Models and Human Pathology. *Environ Health Perspect*. 119:1356-63, 2011. PMID:21684831
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8. Book Chapters

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2. **Barchowsky A** Metals in Environmental Cardiovascular Disease. In: Issues in Toxicology 8: Environmental Cardiology, Pollution and Heart Disease. A Bhatnagar ed. pp 272-300 The Royal Society of Chemistry Cambridge, UK 2011.

3. **Barchowsky A** and JC States. Arsenic-induced cardiovascular disease. In: Arsenic, Exposure Sources, Health Risks, and Mechanisms of Toxicity. JC States ed. Pp 453-468 John Wiley & Sons, Inc, Hoboken, USA. 2015

5. Published Abstracts (past 5 years)

1. Klei, LR and **A Barchowsky**. Dysfunctional regulation of metabolic and mitochondrial gene expression following arsenic exposures. Abstract 1438 *The Toxicologist* 126: 310, 2012.
2. Ambrosio, F, B. Goodpaster, L. Niedernhofer, B. Van Houten, G. Distefano, E. H. Brown¹ and **A. Barchowsky**. Cellular, metabolic, and histological evidence for arsenic-induced myopathy. Abstract 2069 *The Toxicologist* 126: 446, 2012.
3. **Barchowsky A**, S. H. Safe, C. W. Sulentic, M. Genter and G. Carlson. (session chair) The future of toxicology education: outcomes of the toxicology educational summit. Abstract 2184 *The Toxicologist* 126: 471, 2012.
4. **Barchowsky A**. Noncancer Disease Risk Promoted by Low Level Arsenic Exposures. Abstract 1644 *The Toxicologist* 132: 351, 2013.
5. Beezhold K, L R Klei, Y Garciafigueroa and **A Barchowsky**. The Role of miRNA-29B in Dysregulation of Mesenchymal Stem Cell Differentiation to Adipocytes by Low-Dose Arsenic Exposure. Abstract 2304 *The Toxicologist* 132: 492, 2013.
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8. Oberoi S, **A Barchowsky** and F Wu. The Global Burden of Disease Caused by Arsenic in Food. Abstract 2344 *The Toxicologist* 132: 501, 2013.
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10. Zhang C, R Ferrari, E Brown, K Stearns, **A Barchowsky** and F. Ambrosio. Arsenic Exposure Affects Muscle Extracellular Matrix Composition and Inhibits Muscle Regeneration after Injury. Abstract 919 *The Toxicologist* 144: 194-195, 2015.
11. Beezhold, K and **A Barchowsky** Regulation of Cyclin D1 by Arsenic and miRNA Inhibits Adipogenesis. Abstract 1105 *The Toxicologist* 144: 235, 2015.
12. Cheikhi A, F Ambrosio and A Barchowsky. Remodeling of Mitochondrial Network Topology Defines Myogenesis Progression: Insights from Low-Dose Arsenite Exposure. Abstract 1976 *The Toxicologist* 144: 423, 2015.
13. Cheikhi A, F Ambrosio and A Barchowsky. Low Level Arsenic Exposure Reveals Mitochondrial Dynamics Regulation of Self-Renewal. Abstract 1250 *The Toxicologist* 150: 58, 2016.

3. Service (Professionally Related)

a. University/Institute of Higher Learning

University of Pittsburgh

| Years | Committee | Position |
|-------|-----------|----------|
|-------|-----------|----------|

| Years | Committee | Position |
|----------------|--|-----------------|
| 2016-2017 | EOH Search Committee for Department Chair | appointed |
| 2016-2017 | GSPH Faculty Appointments, Promotions and Tenure Committee | appointed |
| 2016 | IDM Search Committee for Assistant Professor (OTS) | appointed |
| 2016-2019 | GSPH Faculty Appointments, Promotions and Tenure Committee | appointed |
| 2015-2015 | GSPH MPH/Core Curriculum Committee | appointed |
| 2014 | EOH Search Committee for Research Assistant Professor | appointed |
| 2014 | HUGEN Search Committee for Open Rank Professor, outside of tenure stream | appointed |
| 2014 | IDM Search Committee for Assistant Professor | appointed |
| 2013-2016 | GSPH Faculty Appointments, Promotions and Tenure Committee | appointed |
| 2012 | EOH Search Committee for Research Instructor | appointed |
| 2009 | EOH Search Committee for tenure stream Assistant/Associate Professors. | appointed |
| 2007-2004-2014 | Director, Environmental Health Sciences Training Program | appointed |
| 2003-2004-2006 | GSPH Core Curriculum Committee | appointed |
| 2005-2004 | EOH Promotions and Appointments Committee | appointed |
| 2005-2004 | GSPH Reaccreditation Committee | appointed |
| 2005-2004 | EOH Search Committee for Research Faculty | appointed |
| 2004 | GSPH Molecular Biology Retreat Planning Group | Appointed |

Other

| Years | Committee | Position |
|--------------|---|-----------------|
| 2002-2008 | External Advisory Committee, University of Montana Center for Environmental Health | appointed |
| 2005-2008 | Chair, External Advisory Committee, University of Montana Center for Environmental Health | elected |
| 2012- | Scientific Advisory Board, University of Arizona Superfund Basic Research program. | appointed |

b. Editorial Boards, Editorships

| Date | Position | Organization |
|-------------|---------------------------|-----------------------------------|
| 2013- | Editorial Board | Environmental Health Perspectives |
| 2007- | Associate Managing Editor | Toxicological Sciences |
| 2003-2010 | Associate Editor | Cardiovascular Toxicology |
| 2003- | Associate Editor | Journal of Cellular Physiology |

c. Manuscript and Other Document/Publication Review

| Dates | Journal Title |
|----------------------|--|
| Continual since 1988 | American Journal of Physiology, Lung Cellular and Molecular Physiology American Journal of Pathology Arteriosclerosis, Thrombosis and Vascular Biology Cancer Research Cardiovascular Toxicology Chemical Research in Toxicology Environmental Health Perspectives (Editorial Board) Environmental Science and Technology Free Radical Biology and Medicine Molecular and Cellular Biochemistry Journal of Cellular Physiology (Associate Editor) Journal of Experimental Pharmacology and Therapeutics PlosOne Toxicology and Applied Pharmacology. Toxicological Sciences (Associate Editor) |

d. Study Sections, Review Panels, and Related Advisory Boards (selected and past 5 years)

| Date | Position | Organization and Nature of Activity |
|-------------|-----------------|---|
| 2016-2019 | Member | Department of Veterans Affairs Joint Biomedical Laboratory Research and Development and Clinical Science Research and Development Services Scientific Review Board: Subcommittee on Gulf War Veterans' Illnesses. |
| 2016 | Member | NIH CSR Special Emphasis Panel ZRG1 DKUS-L 04 M |
| 2013 | Ad-hoc | NIEHS Board of Scientific Councilors review of the Laboratory of Toxicology and Pharmacology. |
| 2011-2015 | Member | NIH Xenobiotic and Nutrient Disposition and Action Study Section |
| 2010-2016 | Member | College of CSR Reviewers |
| 2009 | member | NIEHS Superfund Basic Research Program review panel |
| 2009 | member | Nanosafety Review special emphasis panel, NIEHS |
| 2009 | member | Outstanding New Environmental Scientists special emphasis panel, NIEHS |
| 2009-2010 | member | NIEHS Outstanding New Environmental Scientists special emphasis panel |
| 2008-2009 | member | NIH special emphasis panel: Systemic Injury from Environmental Exposures. |

e. Leadership in Professional Organizations and Honorary Societies.

| Date | Position | Organization |
|-------------|------------------------|--|
| 2017-2018 | Vice President | Allegheny-Erie Chapter Society of Toxicology (elected) |
| 2014-2017 | Member | Council of the Society of Toxicology (elected) |
| 2013-2014 | Member | Society of Toxicology Communications Committee |
| 2011 | Chair | Educational Summit Organizing Team, Society of Toxicology. |
| 2010-2011 | President | Metals Specialty Section, Society of Toxicology |
| 2009-2011 | Chair | Society of Toxicology Education Committee |
| 2009-2010 | Vice President | Metals Specialty Section, Society of Toxicology |
| 2008-2009 | Vice President (elect) | Metals Specialty Section, Society of Toxicology |
| 2007-2011 | Member | Society of Toxicology Education Committee |
| 2005 - | Vice President | Allegheny-Erie Chapter Society of Toxicology |

f. Service to Governmental and Other Public Organizations

| Date | Position | Organization and Nature of Activity |
|-------------|-----------------|--|
| 2015-2017 | Chair | National Research Council, Committee on Inorganic Arsenic. |
| 2013-2017 | Member | National Research Council, Committee on Inorganic Arsenic. |
| 2012-2015 | Member | World Health Organization, Chemicals and Toxins Task Force of FERG |
| 2006-2011 | Member | Advisory Board, University of Pittsburgh Academic Consortium for Excellence in Environmental Public Health Tracking (UPACE-EHPT) |
| 2005-2009 | Member | US Environmental Protection Agency Scientific Advisory Board Arsenic Special Emphasis Panel |
| 2002 | Member | National Academies of Science, Committee on the framework for evaluating the safety of dietary supplements; Chromium Picolinate I Working Group. |
| 1996-2003 | Member | American Heart Association, Northeast Affiliate, Research Committee |

g. Consultantships

| Date | Name of Consultantship |
|-------------|--|
| 2005-2010 | EPA special government employee, Arsenic Advisory Panel |
| 1991-1994 | Clinical Trial Design Consultant, Hoechst Marion Roussel (Marion Merrell Dow), Kansas City, MO |
| 1988-1991 | Clinical Trial Design Consultant, Merck Sharp and Dohme Research Laboratories, West Point, PA. |

4. Service (Community Related)

Service to Community-Based Organizations

| Year | Position and Organization | Type of Service |
|-------------|--|--|
| 2011 | Riverquest | Scientific program review |
| 2005 | Environmental Integrity Project | Consultant |
| 2005 | Clean Water Action | Consultant |
| 2005 | Clean Air Task Force | Consultant |
| 2002 | Montshire Museum of Science, Environmental Detectives Summer Teacher Institute | Consultant and lecturer in a course designed to educate middle school teachers |

Other Related Service and Volunteer Activities.

| Year | Position and Organization | Type of Service |
|-------------|---|---|
| 2007 | Pittsburgh Environmental Health Sciences Program | Created community outreach core to support a NIEHS Superfund Basic Research Program grant. Target communities surrounding the abandoned American Zinc and Chemical Company smelter, northern Washington County, PA. |
| 2005 | Informed resource for Forward Township residents coping with fly ash slide. | Attended town meetings to answer health concerns and connect residents to government agencies. Phone and email resource. |
| 2001- 2003 | Upper Valley Lightning Soccer Association | Youth soccer coach, board member |
| 1996 - 2001 | Hanover, NH Recreation Department, | Youth soccer coach, |