CURRICULUM VITAE

MARTIN AUGUSTINE PHILBERT

01/03/2011

PERSONAL

Present Address:	Dean and Professor of Toxicology School of Public Health The University of Michigan 1415 Washington Heights Ann Arbor, Michigan 48109-2029
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Citizenship:	--(b)(6)--

EDUCATION

--(b)(6)--B.Sc. (Honours)	Biology/Chemistry College of Arts and Technology, Cambridge, UK
--(b)(6)--Ph.D.	Biochemistry / Neurochemistry / Experimental Neuropathology London University Royal Postgraduate Medical School

ACADEMIC APPOINTMENTS

May 1988-May 1990	Postdoctoral Fellowship, Neurotoxicology Laboratories, Department of Pharmacology and Toxicology, Rutgers University, New Jersey
May 1990-Aug 1995	Research Assistant Professor (non-tenure track), Neurotoxicology Laboratories, Department of Pharmacology and Toxicology, Rutgers University, New Jersey
Sept 1995–Aug 2000	Assistant Professor of Toxicology (tenure track), Department of Environmental Health Sciences, University of Michigan School of Public Health, Michigan
Aug 2000–July 2004	Associate Professor of Toxicology, Department of Environmental Health Sciences, University of Michigan School of Public Health, Michigan
Aug 2000–Dec 2003	Associate Chair for Research and Development, Department of Environmental Health Sciences, University of Michigan School of Public Health, Michigan
Aug 2004 – Present	Professor of Toxicology, University of Michigan School of Public Health, Michigan
Jan 2004 – Mar 2010	Interim Director, Center for Risk Science and Communication, University of Michigan School of Public Health, Michigan
Jan 2004 – Dec 2010	Senior Associate Dean for Research, University of Michigan School of Public Health, Michigan
Jan 2011 – Present	Dean, University of Michigan School of Public Health, Michigan

AWARDS

1984-1987	MRC-CASE Postgraduate Fellowship, London University, UK
2001	Society of Toxicology Achievement Award
April, 2003	InVitrogen Lecturer, FASEB, San Diego, California
May, 2003	Samuel Kuna Lecturer, Joint Program in Toxicology, Rutgers, The State University of New Jersey & University of Medicine and Dentistry of New Jersey
July, 2004	CIC Academic Leadership Fellow 2004–2005, University of Michigan
March, 2009	National Cancer Institute's Star in Cancer and Nutrition
May, 2009	Mid Atlantic Society of Toxicology Ambassador

CURRENT EXTRAMURAL FUNDING

1-U01-ES-020128-01 (Philbert) 9/24/10 – 04/30/15
Source: NIH $2,070,141
Title: Modulation of Immune-GI Function by NanoAg
Role: Primary Investigator
Goals: There exists a substantial body of available literature on the effects of inhaled ultrafine materials and the ability of nanomaterials to penetrate the skin [5-8] following exposure in the workplace or to sunscreens containing microfine or nanometer-scale titanium dioxide, carbon-based nanomaterials, quantum dots and/or metal oxides. However, little or no attention has been paid to a major route of exposure: namely oral [9-21]. It is worthy of note that the vast literature on the inhalation of nanomaterials rarely acknowledges the possibility for contemporaneous swallowing of particulates in aerosols (especially in non-obligate nose breathers such as humans), preening and other cleansing behaviors in rodents, and the potential contribution of gastrointestinal absorption to the overall body burden of the chemical components of particulates, particulate matter itself or the induction/suppression of systemic inflammatory systems. The need for information on oral routes of exposure is particularly pressing given that nanomaterials, particularly silver, gold, and silicates, in various nanoscale and colloidal formulations, are currently available on the market in the form of dietary supplements with purported health benefits. Therefore, we propose in this series of studies to measure the fundamental contribution of oral exposures to the overall body burden of nanomaterials such as silver (ionic and particulate), to investigate the potential for changes in the immunologic balance in the gut (maintenance vs. inflammatory cytokines) and the potential for gross pathological change.

2RO1ES00846-08A2 (Philbert) 05/01/08 to 03/31/13
Source: NIH $2,621,805
Title: Role of Astrocyte Injury in Neuroprotection
Role: Primary Investigator
Goals: Lesions of the brainstem that involve loss of function with attendant damage have been classified as neuropathologies. This grant investigates the molecular basis of adenosine release by damaged astrocytes, ensuing neuronal silencing and ultimate sparing of function during exposure to aromatic nitrochemicals.

1R01EB007977 (Kopelman/Philbert) 09/30/07 to 08/31/11
NIH $2,616,007
Title: Nanoparticle Enabled Intraoperative Imaging and Therapy
Development of targeted, multifunctional nanoparticles designed to improve the survival of brain tumor patients by increasing surgical efficiency and mediating adjuvant photodynamic therapy. By optically imaging tumor margins, targeted multifunctional nanoparticles will enable maximal surgical resection, while minimizing adjacent tissue damage. In addition, the same nanoparticles will be used intraoperatively to mediate photodynamic therapy, thereby eradicating occult or unresectable tumor.

PREVIOUS GRANT AWARDS

1RO1CA120126-01A1 (Mendez) 04/01/07-03/31/10 (8%)
Source: NIH $450,454
Title: Modeling the Impact and Costs of Radon Policy for Lung Cancer Control
Role: Co-Investigator
Goals: The goal of this research is to elucidate the potential impact and costs of a selected set of public policies aimed at reducing the burden of radon-induced lung cancer in the US, taking into account the strong interaction between radon exposure and smoking.

1R21CA125297 (Kopelman/Philbert) 08/01/07 to 07/31/09
NIH $607,757
Title: Nanobiophotonics Enabled Tumor Surgery and Intraoperative PDT (Photodynamic Therapy)
Extension of the capabilities of biophotonic nano-devices to enable intraoperative optical delineation and photodynamic therapy (PDT). The ultimate goal is to apply advances in nanotechnology to address the challenges in the surgical and adjuvant therapy of brain tumors.

FA9550-06-01-0098 (Sastry/Philbert) 12/01/05–11/30/08 (10%)
Source: Department of Air Force $600,000
Title: Quantitative Prediction of Available Power in Mitochondrial Arrays for Compact Power Supplies.
Role: Co-Investigator
Goals: To map dynamics of mitochondrial fission and fusion, for candidate cells used in energy generation, and to interrogate the energetics of mitochondrial arrays in situ, and in controlled arrangements.

N01-CO-37123
NIH NCI-Unconventional Innovations Program (Kopelman/Philbert) 9/30/03-09/29/08 (10%)
Source: National Cancer Institute (Contract) $6,592, 923 (TDC)
Title: Cancer Diagnosis and Therapy with Dynamic NanoPlatforms
Role: Co-Principal Investigator, Team Director Task II
Goals: To develop specific nano-optochemical devices with molecular recognition elements for the advanced detection and treatment of inoperable malignancies. These devices will employ a modified photodynamic principle.

NIH ROI ES 08846-01 (Philbert) 06/01/99-03/31/07 (20%)
Source: National Institute of Environmental Health Sciences (NIEHS) $493,509 (TDC)
Years 04 – 08 funded *$1,000,000 (TDC)*
Title: Role of Astrocyte Mitochondria in Neurotoxicity
Role: Principal Investigator
Goals: To investigate the role of the mitochondrial permeability transition in toxicant induced oxidative stress and energy deprivation syndromes in the central nervous system.

The Keck Foundation, Los Angeles (Philbert/Sastry) 01/01/03–12/31/06 (20%)
Source: Biomedical Sciences & Engineering Program $ 2.25M (TDC)
Title: Nanoscale Sensing and Modeling of Intracellular Transport (Philbert/Sastry)
Role: Principal Investigator
Goals: To measure and model nano- and micro-scale transport of ions in living cells.

Fogarty Award (Robins) 09/01/96-08/31/06 (5%)
Source: NIEHS $ 765,097 TDC
Title: Research Training in Environmental and Occupational Health in South Africa
Role: Participating Investigator
Goals: The award is targeted at an integrated effort to further develop the occupational and environmental health infrastructure in South Africa with particular emphasis on improving research training opportunities.

NIH/NCI Program Project (Ross) 01/01/00–12/31/05 (20%)
Source: National Cancer Institute $ 13.7M TDC
Title: Brain Tumor Therapeutic Efficacy by Quantitative MR
Role: Project Leader, Project 4.
Goals: Development of a novel strategy for enhancement of MR images and photodynamic therapy of brain tumors.

Defense Advanced Research Projects Administration 05/01/03–04/31/04 (5%)
Source: Department of Defense $141,552
Title: Development of Magnetically-Responsive Nanoprobes
Role: Co-Principal Investigator
Goals: Develop and deploy in biological systems magnetically-responsive nanoprobes for a variety of sensing regimens.

NCI-Unconventional Innovations Program (Kopelman/Philbert) 08/01/99-07/31/03 (20%)
Source: National Cancer Institute (Contract) $ 3.2M (TDC) (Submission, April 15, 1999)
Title: Development of Targeted NanoOptical Devices for the Detection, Diagnosis and Treatment of Cancer
Role: Co-Principal Investigator
Goals: To develop specific nano-optochemical devices with molecular recognition elements for the advanced detection and treatment of inoperable malignancies. These devices will employ a modified photodynamic principle.

Center Grant I P50 ES 09589-01 (Israel/Philbert) 09/01/98-08/31/03 (10%)
Source: NIEHS $ 7, 418, 513 TDC; Core III $ 1,192,500
Title: Michigan Center for the Environment and Children's Health
Role: Co-Principal Investigator

Goals: Investigate the effects of indoor dust on cytokine production in the bronchus and relate resulting oxidative stress to alterations in cholinergic innervation of bronchial smooth muscle.

PHS-NIH Shannon Award ES08846 (Philbert) 11/01/98-10/31/00
Source: NIEHS $ 150,000 (TC)
Title: Role of Astrocyte Mitochondria in Neurotoxicity
Role: Principal Investigator
Goals: To investigate the role of the mitochondrial permeability transition in toxicant induced oxidative stress and energy deprivation syndromes in the central nervous system.

The University of Michigan Office of the Vice President for Research
Source: OVPR/OVPAA 02/01/99-01/31/00
Title: Excellence in Research Award $50,000
Role: Award Recipient
Goals: Award based on two patents submitted in 1998/1999 on nanosensor/photodynamic therapies. An undisclosed multinational commercial company is currently negotiating with the University for the license to one of the patents. The award is intended to promote further developments of these commercially-relevant applications.

PHS-NIH R29ES06103-04 (Philbert) 04/01/93-03/31/98 (50%)
Source: NIEHS $342,617 TDC + 1 Year No Cost Extension
Title: Role of Astrocytes in Regional Neurotoxicity
Role:
Goals: The P.I. is in the final year (no cost-extension) of an R29 award from NIEHS which investigates the role of astrocytes, endothelial cells and neurons in the metabolism and activation of xenobiotics which produce focal edematous lesions in the brainstem. Alterations in the ability to metabolize xenobiotics following modulation of sensory input and, hence, susceptibility to nitrocompound-induced neurotoxicity is proposed.

MDA-972-97-1-0006 (Kopelman) 02/01/97-01/31/99 (20%)
Source: DOD/DARPA Pathogen Countermeasures Program.$2.5M TDC, $300,000 TDC (sub)
Title: Acceleration of Pathogen Countermeasures by Development of Submicron Intracellular Optical Biosensors
Role: Co-Principal Investigator
Goals: The development of minimally invasive 5 - 100 nm fluorescent biochemical sensors for the detection of calcium, zinc, sodium, potassium, hydrogen, and chloride ions, nitric oxide, glucose, NAD(P)H and other sentinel biochemical indicators of intracellular pathogenesis. The investigators seek to provide facile millisecond measurements of these indicators of cellular damage following exposure of various in vitro and in vivo biological systems to biological and chemical agents.

SUPPLEMENT:

Source: National Cancer Institute (NCI) 01/01/98 - 10/30/99
Title: NanoOptoChemical Systems for Advanced Detection and Treatment of Cancer
Role: Co-Principal Investigator (with Kopelman)
Goals: Development of nanosensors and actuators for the photodynamic detection and destruction of cancer cells.

Source: National Institutes of Environmental Health Sciences (ES02558)Jan. 1995 - Dec. 1998
Principal Investigator: G. Witz $1,724,878 (TC
Title: Muconaldehyde in Relation to Benzene Hematotoxicity
Role: Consultant

Source: National Institutes of Environmental Health Sciences Sept. 1990 - Aug 1991
(Center Grant, Seed Money) I PSO; ES05022-03 $10,000 (TDC)
Title: Oxidative Stress and Regional Astrocytic Susceptibility to Dinitrobenzene
Role: Principal Investigator
Co-Investigators: M. lba, S. Ji, H.E. Lowndes, and K.R. Reuhl

Source: Sept. 1990 - Aug. 1991
Principal Investigator: Michael lba $10,000 (TDC)
Title: Inducibility of Cytochrome P450 in the Nervous System of the Rat
Role: Co-investigator
Co-investigators: Thomas, K.R. Reuhl and H.E. Lowndes

Source: National Institute of Environmental Health Sciences April 1992 - March 1995
(Program Project, Superfund Grant) Funds Requested: $ 2,555,718 (TDC)

Proposed Project Costs: $ 257,591 (TDC)
Title: Neurotoxicology of Superfund Chemicals
Subsection Title: Changes in Astrocytic Sensitivity to Monochloroacetic Acid During Postnatal Development
Role: Co-investigator w/FC Kauffman (Principal Investigators: HE Lowndes and KR Reuhl)

Source: National Institutes of Environmental Health Sciences Sept. 1992 - Aug. 1993
(Center Grant, Seed Money) 1 PSOES05022-03 $ 9,615 (TDC)
Title: Modulation of Phase I and II Metabolic Enzymes During Oncogenesis in the Brain
Role: Principal Investigator (Co-PI: KR Reuhl, M Iba, and P Thomas)

RESEARCH INTERESTS AND ACTIVITIES

- Experimental Neuropathology
- Energy Deprivation Syndromes in the Central Nervous System
- Development of microbiochemical assays and NanoOptoChemical biosensors
- Development of novel NanoOptoChemical Photodynamic platforms for the early detection and treatment of cancer.
- Risk Analysis

SERVICE TO JOURNALS

Current Reviewer:

Australian Journal of Food Science
Brain Research
Cell Biology and Toxicology
Chemico-Biological Interactions
Chemical Research in Toxicology
Environmental Health Perspectives
Fundamental and Applied Toxicology
Journal of Histochemistry and Cytochemistry
Journal of Neurochemistry
Journal of Neuroscience
NeuroToxicology
Toxicology and Applied Pharmacology

Editorial Board:

Cell Biology and Toxicology
Chemical Research in Toxicology (American Chemical Society)
International Journal of Toxicology
Nanomedicine: Nanotechnology, Biology, and Medicine (Assoc. Editor)
Neurotoxicology
Toxicology & Applied Pharmacology (Specialty Editor)
Comprehensive Toxicology, Second Edition (Volume Editor)

APPOINTMENTS AND PROFESSIONAL ACTIVITIES

May 1990 - Present	Associate Member, Environmental and Occupational Health Sciences Institute, Rutgers/UMDNJ
May 1991 - Present	Member, National Institute of Environmental Health Sciences Center of Excellence, Rutgers, UMDNJ
Jan. 1994 - Sept. 1995	Director, Core V Cellular and Enzymology Support Laboratory, National Institute of Environmental Health Sciences Center of Excellence, Rutgers/UMDNJ
Sept. 1992 - Aug. 1995	Associate Member Graduate School, Rutgers the State University of New Jersey
1995 – Present	Member, Society of Toxicology
June 1994 - Present	Member, New Jersey Cancer Institute
Jan. 1996 - Present	Member, Neuro-oncology Group, Michigan Cancer Center
July 1-3, 1996	Member, NIEHS Special Study Section
July 1996 - 2000	Member, National Institute of Environmental Health Sciences Review Committee (Study Section)
July 1996 –May 2006	Site visitor for NIEHS Centers of Excellence to Columbia University, Texas A&M University, University of Maine, University of Texas Houston Medical Center
Nov. 1997 & 1998	Member DoD Neuropathology/Neurotoxicology Study Section
Apr. 1999	Chair, NIEHS Special Study Section, Developmental Neurotoxicity of Environmental Chemicals
Feb. 2000 - June 2003	Member, NIH-ALTX-III Study Section

Feb. 2000	Reviewer, Carl C. Smith Mechanisms of Toxicology Award. Society of Toxicology
Mar. 2001	Reviewer, NIEHS Children's Environmental Health Centers Program
Oct. 2001	Reviewer, NIEHS TIPS Award Review Committee
Nov. 2001	Chair, Site Visit Committee, Harvard University, Environmental Health Sciences, NIEHS P30 application
Feb. 2002	Chair, Site Visit Committee, University of Louisville, Kentucky, NIEHS P30 Application
May 2002	Chair, Site Visit Committee, University of New Mexico, Internal Medicine, NIEHS P30 Application
Jan. 2002 – May 2006	Member, External Advisory Committee, Florida A&M University, Advanced Research Cooperation in Environmental Health Science (ARCH) Center
Jan. 2002 - Present	Member External Advisory Committee, Center of Biomedical Research Excellence, Mississippi State University, College of Veterinary Medicine
2002 - 2003	Chair, NIEHS Center and Program Project Grant Application Site Visits (Harvard University, University of New Mexico, University of Louisville, and Duke University)
2002 - 2003	Chair NIEHS-TIPS Study Section
Sept. 2003 – Jan. 2004	Chair NIEHS Special Emphasis Panel(s) in Toxicology
Dec. 2003 - Present	Member, NIEHS Directors Advisory Council
2004 – Jan. 2008	Member, NIEHS National Advisory Environmental Health Sciences (NAEHS) Council
Oct. 2004 - Co-Chair	NIEHS Review Panel – Role of P30 Centers in the Institute
June 2005 – Nov. 2006	NIEHS National Toxicology Program (NTP) Board of Scientific Counselors Nanotechnology Working Group
Aug. 2005 - Present	Elected Member, Education Committee of the American College of Toxicology
Apr. 2006	Member, External Advisory Committee, NIEHS Training Grant in Environmental Toxicology, Rutgers, the State University of New Jersey and The University of Medicine and Dentistry of New Jersey
Apr. 2006	Member, External Advisory Committee, NIEHS Training Grant in Environmental Pathology, University of Vermont College of Medicine
May 2006	Chair, Society of Toxicology Awards Committee
May 2006 - Present	Member, Executive Committee US EPA Office of Research Development (ORD) Board of Scientific Councilors
June 2006	Department of Defense Neurotoxin Exposure and Treatment Research Program
Oct. 2006	Chair, US EPA Board of Scientific Counselors National Center for Environmental Research (NCER) Evaluation Subcommittee
Feb. 2007 – May 2008	Secretary Elect, Society of Toxicology Council
May 2008 – May 2010	Secretary, Society of Toxicology Council
Mar. 2007 - Present	Member, Institute of Medicine's (IOM) Roundtable on Environmental Health Sciences, Research, and Medicine
Mar. – July, 2007	Member, US EPA Board of Scientific Counselors Children's Environmental Health Research Committee
Mar. 2007	U.S. President's Council of Advisors on Science and Technology (PCAST) Nanotechnology Technical Advisory Group
June 2007 – June 2009	Chair, US EPA Board of Scientific Councilors National Center for Environmental Research (NCER) Standing Subcommittee

July 2007 - Present	Member, The National Academies Institute of Medicine's (IOM) Food and Nutrition Board
Oct. 2007	Reviewer, Science Foundation Ireland Strategic Research Cluster Programme Dublin Site Visit
Dec. 2007 - Present	Reviewer, Oak Ridge Associate Universities (ORAU) Final Performance Reviews for Pennsylvania Department of Health
Dec. 2007 – Dec. 2008	Member, National Academies National Research Council (NRC) Committee for Review of the Federal Strategy to Address Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials
June 2008	Vice Chair, National Academies National Research Council (NRC) Committee for Review of the Federal Strategy to Address Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials
Mar. 2008	Invitee and Presenter, FDA-Alliance for NanoHealth Nanotechnology Initiative Workshop
Mar. 2008 – Dec. 2011	Member, FDA Science Board to the Food and Drug Administration
Apr. 2008 - Present	Reviewer, NIH Roadmap Nanomedicine Initiative
Apr. 2008 - Present	Member, Organizing Committee for Society of Toxicology Contemporary Concepts in Toxicology Hemangiosarcoma Workshop
Aug. 12, 2008	Invited Scientist, Science Advisory Board to the National Center for Toxicological Research public advisory meeting to the Food and Drug Administration
July 2008 – Sept 2009	Member, Superfund Basic Research Program Advisory Panel
Sept 2009 – Present	Member, Euro nanomedicine Peer Review Panel
Nov. 2009	Member, US EPA FIFRA Scientific Advisory Panel
Feb. 2010	Member, National Research Council Committee to develop a research strategy for Environmental, Health, and Safety aspects of Engineered Nanomaterials.
June 2010	Member, U.S. Department of Agriculture National Institute of Food and Agriculture, AFRI Nanotechnology For Food Safety Program Panel
Sept 2010	Member, Responsible Conduct of Research and Scholarship Committee (RCRS)

ACADEMIC COMMITTEES

1991 - 1992	Minority Concerns Committee, College of Pharmacy, Rutgers-The State University of New Jersey
1991 - 1993	Ad hoc Member, Admissions Committee, Joint Graduate Program in Toxicology, Rutgers-The State University of New Jersey
1993 -1995	Member, Education Committee, Joint Graduate Program in Toxicology, Rutgers-The State University of New Jersey
1993 - 1995	Member, Honours Program Committee (Academic Standards), College of Pharmacy, Rutgers-The State University of New Jersey
1996 - 1997	Member, Curriculum Committee, University of Michigan Department of Environmental and Industrial Health
1996 - 1997	Member, Dean's Task Force on Animal Welfare and Care, School of Public Health, The University of Michigan
1998	Member, Dean's Blue Ribbon Panel on The Future of the School of Public Health, The University of Michigan

2000	Member, Architect's Selection Committee
2000	Member, Steering Committee on Architecture of New Building. School of Public Health, The University of Michigan
2000 – 2001	Member, University of Michigan President's Commission on Undergraduate Education
2002 – 2003	Member, University of Michigan Undergraduate Education Council
2002 – 2003	Chair, Diversity and Inclusion Subcommittee of the University of Michigan Undergraduate Education Council
2003 – 2006	Member, University Committee on the Use and Care of Animals, University of Michigan
2004 – Present	Member Ex Officio, University of Michigan School of Public Health Executive Committee
2004 – Present	Chair, University of Michigan School of Public Health Research Council
2007 – Present	Member, University of Michigan Health Sciences Education Building Technology and Teaching Subgroups
August 2007	Faculty Host, University of Michigan Alumni Association Tour, Ukraine and Romania August 3-16, 2007
2008 - Present	University of Michigan Associate Provosts and Associate Deans Group
2009 – Present	Member, EHS Doctoral Committee
2009 – Present	Member, Post Doctoral Advisory Group (PAGAN)

GRADUATE STUDENT EXAMINATION COMMITTEES

--(b)(6)--

POSTDOCTORAL FELLOWS SUPERVISED

--(b)(6)—

STUDENTS SUPERVISED

Graduate Students (Candidates for Doctoral Degree in Toxicology)

--(b)(6)-- join doctoral examination committee, March 2002 – Completed, December 2003)

Other Graduate Students

--(b)(6)--

Undergraduate Honors Students
--(b)(6)

Undergraduate Students

--(b)(6)--

SOCIETY MEMBERSHIPS

American College of Toxicology	2002 - Present
International Neurotoxicology Association	1985 - Present
International Society for Free Radical Research	1989 - Present
International Society for Neurochemistry	1994 - 2006

New York Academy of Sciences	1993 - Present
Microscope Society of America	1996 - Present
Oxygen Society	1989 - Present
Society of Experimental Neuropathology	1990 - Present
Society of Toxicology	1991 - Present

PATENTS

6,143,558 November, 2000 Optical Fiberless Sensors for Analyzing Cellular Analytes. Clark, Kopelman and Philbert. U.S. Patent awarded under auspices of University of Michigan Technology Management Office, Wolverine Towers, Room 2071, 3003 South State Street Ann Arbor, Michigan 48109-1280.

6,379,955 April, 2002 Optical Fiberless Sensors and Actuators. Philbert and Kopelman. Submitted to U.S. Patent Office under auspices of University of Michigan Technology Management Office, Wolverine Towers, Room 2071, 3003 South State Street Ann Arbor, Michigan 48109-1280.

Pending: Magnetic Optical Nanosensors. Anker, Kopelman and Philbert. Submitted to US. Patent Office under auspices of University of Michigan Technology Management Office, Wolverine Towers, Room 2071, 3003 South State Street Ann Arbor, Michigan 48109-1280.

Pending: Universal Wireless, Nano-Optical Voltmeters. Philbert, Tyner, and Kopelman. Submitted to U.S. Patent Office January 2006 under auspices of University of Michigan Technology Management Office, Wolverine Towers, Room 2071, 3003 South State Street Ann Arbor, Michigan 48109-1280.

PUBLICATIONS

Full Length Peer-Reviewed Papers Published, Accepted or In-Press

83. Wenger Y, Schneider RJ 2nd, Reddy GR, Kopelman R, Jolliet O, Philbert MA. (2010) Tissue distribution and pharmacokinetics of stable polyacrylamide nanoparticles following intravenous injection in the rat. *Toxicol Appl Pharmacol*. [Epub ahead of print]
82. Jay GW, Demattos RB, Weinstein EJ, Philbert MA, Pardo ID, Brown TP. (2010) Animal Models for Neural Diseases. *Toxicol Pathol*. [Epub ahead of print]
81. Hah HJ, Kim G, Lee YE, Orringer DA, Sagher O, Philbert MA, Kopelman R. (2010) Methylene Blue-Conjugated Hydrogel Nanoparticles and Tumor-Cell Targeted Photodynamic Therapy. Macromol Biosci. 11(1):90-9 [Epub ahead of print]
80. Orringer DA, Chen T, Huang DL, Philbert M, Kopelman R, Sagher O. (2010) A technical description of the brain tumor window model: An in vivo model for the evaluation of intraoperative contrast agents. Acta Neurochir Suppl. 2011;109:259-63.
79. Orringer DA, Chent T, Huang DL, Armstead WM, Hoff BA, Koo Ye, Keep RF, Philbert MA, Kopelman R., Sagher O. (2010) The brain tumor window model: a combined cranial window and implanted glioma model for evaluating intraoperative contrast agents. *Neurosurgery*, 66(4):736-43. (PMID: 20305495)

78. Kim G, Lee YE, Xu H, Philbert MA, Kopelman R. (2010) Nanoencapsulation Method for High Selectivity Sensing of Hydrogen Peroxide inside Live Cells. *Analytical Chemistry*, 82(6):2165-9.
77. Srinivas PR, Philbert M, Vu TQ, Huang Q, Kokini JL, Saos E, Chen H, Peterson CM, Friedl KE, McDade-Ngutter C, Hubbard V, Starke-Reed P, Miller N, Betz JM, Dwyer J, Milner J, Ross SA. (2010) Nanotechnology research: application in nutritional sciences. *Journal of Nutrition*, 140(1):119-124.
76. Wu J., Xu H., Tang W., Kopelman R., Philbert M.A., and Xi C. (2009) Eradication of bacteria in suspension and biofilms using methylene blue-loaded dynamic nanoplatforms. *Antimicrobrial Agents Chemotherapy* 53(7):3042-8.
75. Orringer D.A., Koo Y.E., Chen T., Kim G., Hah H.J., Xu H., Wang S., Keep R., Philbert M.A., Kopelman R., and Sagher O. (2009) In-vitro characterization of a targeted, dye-loaded nanodevice for intraoperative tumor delineation. *Neurosurgery* 64(5):965-71.
74. Orringer D.A., Koo Y.E., Chen T., Kopelman R., Sagher O., and Philbert M.A. (2009) Small solutions for big problems: the application of nanoparticles to brain tumor diagnosis and therapy. *Clinical Phamacology Therapy* 85(5):531-4.
73. Gao, D., Kopelman, R., Xu, H., and Philbert, M. (2008) Bio-eliminable nano-hydrogels for drug delivery. *Nano Lett*. 8(10):3320-4. Epub 2008 Sep 13.
72. Tang, W., Xu, H., Park, E.J., Philbert, M.A. and Kopelman, R. (2008) Encapsulation of methylene blue in polyacrylamide nanoparticle platforms protects its photodynamic effectiveness. *Biochemical and Biophysical Research Communications* 369(2):579-583.
71. Gao, D. Xu, H. Philbert, M.A. and Kopelman, R. (2007) Ultrafine hydrogel nanoparticles: synthetic approach and therapeutic application in living cells. *Angewandte Chemie-International Edition* 46(13):2224-7.
70. Tyner, K.M., Kopelman, R. and Philbert. M.A. (2007) "Nanosized voltmeter" enables cellular-wide electric field mapping. *Biophysical Journal* 93(4):1163-74.
69. Calabrese, E.J., Bachmann, K.A., Bailer, J., Bolger, P.M., Borak, J, Cai, L, Cedergreen, et al (2007) Biological stress response terminology: Integrating the concepts of adaptive response and preconditioning stress within a hormetic dose-response framework. *Toxicology and Applied Pharmacology*, 222(1):122-8.
68. Koo, Y.-E.L., Fan, W., Hah, H., Xu, H., Orringer, D., Ross, B., Rehemtulla, A., Philbert, M.A., and Kopelman, R. (2007) Photonic explorers based on multifunctional nanoplatforms for biosensing and photodynamic therapy. *Applied Optics*, 46(10): 1924-1930.
67. Maynard, A.D., Aitken, R.J., Butz, T., Colvin, V., Donaldson, K., Oberdörster, G., Philbert, M.A., Ryan, J., Seaton, A., Stone, V., Tinkle, S.S., Tran, L., Walker, N.J., Warheit, D.B. (2006) Safe handling of nanotechnology. *Nature (Commentary)*, 444 (7117): 267-269.
66. Koo, Y.-E.L., Reddy, G.R., Bhojani, M., Schneider, R., Philbert, M.A., Rehemtulla, A., Ross, B.D., Kopelman, R. (2006) Brain cancer diagnosis and therapy with nanoplatforms. *Advanced Drug Delivery Reviews*, 58(14):1556-1577.
65. Reddy, G.R., Bhojani, M.S., McConville, P., Moody, J., Moffat, B.A., Hall, D.E., Kim, G., Koo, Y.-E.L., Woolliscroft, M.J., Sugai, J.V., Johnson, T.D., Philbert, M.A., Kopelman, R., Rehemtulla, A., Ross, B.D. (2006) Vascular targeted nanoparticles for imaging and treatment of brain tumors. *Clinical Cancer Research*, 12(22):6677-6686.
64. Gao, D., Agayan, R.R., Xu, H., Philbert, M.A., Kopelman, R. (2006) Nanoparticles for two-photon photodynamic therapy in living cells. Nano Letters, 6(11):2383-2386.
63. Phelka, A.D., Sadoff, M.M., Martin, B.P., Philbert, M.A. (2006) BCL-XL expression levels influence differential regional astrocytic susceptibility to 1,3-dinitrobenzene. *NeuroToxicology*, 27(2):192-200.

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3. Zhang, Z., Philbert, M.A., Waters, D.K. and Lowndes, H.E. Histochemical distribution of glutathione in nervous system. Toxicologist 10, 321
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<u>Technical Reports</u>

Published by Department of Defense - Sensitive
DARPA - UPC Q I Dec 1996, Development of nanosensors for the early detection of unconventional pathogens.
DARPA - UPC Q2 March 1997, Development of nanosensors for the early detection of unconventional pathogens.
DARPA - UPC Q3 June 1997, Development of nanosensors for the early detection of unconventional pathogens.
DARPA - UPC Q4 Sept 1997, Development of nanosensors for the early detection of unconventional pathogens.
DARPA - UPC Q5 Dec 1997, Development of nanosensors for the early detection of unconventional pathogens.

DARPA - UPC Q6 March 1998, Development of nanosensors for the early detection of unconventional pathogens.
DARPA - UPC Q7 June 1998, Development of nanosensors for the early detection of unconventional pathogens.
DARPA - UPC Q8 Sept 1996, Development of nanosensors for the early detection of unconventional pathogens.

Published by the National Cancer Institute

NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q1 December, 1999
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q2 March, 2000
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q3 June, 2000
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q4 September, 2000
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q5 December 2000
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NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q14 March, 2003
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NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q16 September, 2003
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q17 December, 2003
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q18 March, 2004
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q19 June, 2004
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q20 September, 2004
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q21 December, 2004
NCI-DARPA Unconventional Innovations Program (Blue Sky). Dynamic nanoplatforms for the early detection and treatment of cancer. Q22 March, 2005

INVITED LECTURES/SEMINARS/SYMPOSIA

1. Michigan Chapter Society of Toxicology October 18, 1991, Ann Arbor, MI, USA: "Heterogeneous Distribution of Phase I and 11 Metabolic Enzymes in Nervous Tissue: Implications for Regional and Cellular Sensitivity to Neurotoxicants"
2. National Institute of Environmental Health Sciences, June 24 - 25, 1993, NC, USA: Research Workshop "Pediatric Environmental Health"
3. New Jersey Department of Environmental Protection, September 15, 1993, NJ, USA: "What's New in Environmental Neurotoxicology"
4. Children's Environmental Health Network, March 18 - 19, 1994, Washington, D.C., USA: First National Symposium on Children's Environmental Health, Chair; Neurotoxicology Session "Learning and Behavioral Consequences of Pre-Natal Environmental Exposures"
5. Rotary Club of Grenada East, April 7, 1994, Grenville, Grenada, WI: "Industrial Expansion in a Developing Country: Nervous System Health and Industrial Hygiene"
6. St. George's Medical School, Faculty Development Group, April 8, 1994, St. George's, Grenada, WI: "Pathoclisis and Regional Metabolism in the Nervous System"
7. Grenada Medical Association, April 8, 1994, St. George's Hospital, St. George's, Grenada, WI: "Regional Metabolism and Neurotoxicity: Consequences for Nervous System Health in a Developing Country"
8. Parke-Davis Pharmaceutical Research Division, Ann Arbor, Michigan, August 12, 1996: "Reactive Oxygen Species in Nervous System Disease: Friend or Foe?"
9. University of Texas Houston, May 8, 1997: "Metabolic Bases for Regional and Cellular Neurotoxicity"
10. University of California at Davis, May 18, 1997: "Glutathione as a Determinant for Cellular Pathoclisis."
11. Michigan State University, East Lansing, Michigan, May 12, 1997: "Cellular and Sub-Cellular Substrates of Pathoclisis"
12. University of Cincinnati, Ohio, November 20, 1997: "Oxidative Stress, Differential Sensitivity and the Problem of Size."
13. Society of Toxicology, Seattle, Washington, March 2, 1998: "Cellular Substrates for Differential Sensitivity to Neurotoxicants."
14. University of Kansas Medical Center, Toxicology Program, Kansas City, Kansas, March 26, 1998: "Novel Technologies for the Examination of Differential Sensitivity to Neurotoxicants."
15. Texas A&M University, Toxicology Program, College Station Texas, December 2, 1998: "NanoOptoChemical Systems: The problem of small volumes and physiologic change in the CNS (size does count)."
16. DARPA Principal Investigator's Conference, Monterey, California, February 8, 1999: "Nanosensors for Detection of Intracellular Pathogenesis."
17. Advances in Molecular Labels, Signals and Detection; Enhancing Sensitivity, Accuracy and Speed (Sponsored by the National Cancer Institute) Conference, April 12, 1999: "NanoOptoChemical Systems for the Early Detection and Treatment of Cancer."
18. Millford High School, 8' and 9' Grade Music Class, Michigan, April 28, 1999. "The Effects of Music on Neural Development and Mental Health"
19. Parke-Davis, Toxicology Division, Ann Arbor, Michigan, May 13, 1999. "NanoOptoChemical Systems/Dynamic NanoPlatforms for Real-Time Physiologic Measurements in vivo."
20. Milltown District Fine Arts Teachers, Muir Middle School, Milltown, Michigan, September 21, 1999. "Neural Substrates for Learning and the Arts."

21. Milltown High School, Milltown, Michigan, September 21, 1999. "Perception and Learning: The Role of the Arts."
22. Rochester University School of Medicine, Department of Anatomy and Neuroscience, October 21 – 23, 1999. "Nanosensors and Their Application to Neurotoxicology."
23. Vanderbilt University School of Medicine, Department of Pathology and Toxicology Program, January 27 – 28, 2000. "NanoOptochemical Systems in Mechanistic Neurotoxicology."
24. Chair of Continuing Education Session, Society of Toxicology, Philadelphia, March 19, 2000. "Novel Optical Methods in Toxicology."
25. University of Arizona, College of Pharmacy and Toxicology Program, "Application of Novel Sensing Strategies to Neurotoxicology."
26. Chair, Poster Session, Society of Toxicology, Philadelphia, March 21, 2000 "Mechanisms of Neurotoxicity, Central Nervous System."
27. Northville School System, In Service Teacher Training, Michigan, August 16, 2000 "Music, Perception and Learning: Intersection between development, listening and performance."
28. BECON Conference on Nanotechnology, November, 2000, NIH, Bethesda, MD. Member of Panel on Therapeutic Strategies for Nanotechnology.
29. 6th Biennial Alternatives Symposium: Alternative Toxicology Methods for the New Millennium, Lister Hill Center, National Library of Medicine, MD. "Real-time Optical Sensors and Actuators for Use in Cell Culture Models of Toxicity."
30. NIEHS Workshop on Advanced Imaging in Environmental Health Sciences, February 1-3, 2001, NIEHS, RTP North Carolina. Member of Panel on NanoOptoChemical Imaging.
31. Conference on Toxicology of Chemical Mixtures: February 19-21, 2001, Colorado State University, "Application of NanoOptoChemical Sensors to Investigation of the Cellular Toxicity of Chemical Mixtures."
32. University of Pittsburgh School of Medicine, Department of Pathology, April 11, 2001 "Pathophysiology in Small Spaces: "NanoOptoChemical Sensors for Real-Time Intracellular Measurements."
33. Society of Toxicology, Nashville, Tennessee. March 18, 2002. "Imaging of the Mitochondrial Permeability Transition in Models of Neurotoxicity."
34. Indiana University, Indianapolis, Indiana. May 9, 2002. "Role of the Mitochondrial Permeability Transition in Regional Energy Deprivations Syndromes in the Brain."
35. Ottawa University, Institute for Molecular Biology, Ottawa, Ontario, Canada. May 22, 2002. "Chemically-Induced Energy Deprivation Syndromes and Nanosensing: A Combined Approach to Physiology in Small Spaces."
36. BECON Conference on Nanotechnology, June 24, 2002, NIH, Bethesda, MD. Member of Panel on Biosensing.
37. BECON Conference on Nanotechnology, June 25, NIH, Bethesda, MD. Member of Panel on Therapeutic Strategies for Nanotechnology "Novel Strategies for Nano-Biosensing: A Mathematical Approach."
38. BioMEMs & Biomedical Nanotech World Conference, September 8, 2002, Hilton Hotel, Columbus, OH., "Realtime Intracellular Sensing Using Optical Nanosensors."
39. American Society for Cell Biology Conference, December 14, 2002, San Francisco Conference Center, San Francisco, CA. "Probes Encapsulated By Biologically Localized Embedding (PEBBLEs): Conserved Nanosensors for Optical Chemical Imaging Inside Living Cells."
40. Program in Molecular Physiology, and the BioCurrents Research Center (NIH:NCRR), Marine Biological Laboratory, Woods Hole, MA. "Optical NanoSensors: New Approaches to Real-Time Intracellular & Vital Imaging, and Therapy."

41. Federation of American Societies of Experimental Biology (FASEB), April 14, 2003 San Diego Convention Center, San Diego, CA. "Nanodevices for Real-Time Optical Intracellular Sensing."
42. AAMI Conference and Expo, June 15, 2003, Long Beach California. "Biomedical Applications of Nanotechnology."
43. Rutgers University/University of Medicine and Dentistry of New Jersey. "Samuel Kuna Lecture"
44. International Neurotoxicology Association, Dresden, Germany: "Probes Encapsulated By Biologically-Localized Embedding (PEBBLEs.)"
45. National Cancer Institute, August 28, 2003: "Novel Technologies." Workshop on Critical Sulphydryl groups in Cancer: Diet and Environment.
46. National Science Foundation and Ministry of Education, Culture, Sports, Science and Technologies - US-Japan Symposium on Nanotechnology in Advanced Therapy and Diagnosis, "Nanoscale Sensors for Intracellular Measurement and the Early Detection and Treatment of Cancer." Yokohama Prince Hotel, Yokahama, Japan.
47. Johns Hopkins University School of Public Health, January 2004: "PEBBLEs: From Intracellular Sensing to Therapy."
48. University of Colorado, College of Pharmacy, March 5, 2004: "Dean's Distinguished Seminar."
49. California Institute for Quantitative Biomedical Research, April 17, 2004: "Molecular sensing using Optical Nanosensors."
50. Mechanisms of Toxicology, Gordon Research Conference, Colby College, ME., July 25, 2004: Session Organizer & Chair "Innovative Tools for Toxicology."
51. Mitochondrial Medicine Streams of Energy Conference, Westin Conference Center, Pittsburgh, PA., August 4, 2004, "Optical Nanosensors: Physiological Measurements in Small Spaces."
52. Department of Cell and Developmental Biology, University of Michigan School of Medicine, Ann Arbor, Michigan, September 22, 2004, "Use of Optically-Active Nanoparticles for Sensing and Therapy."
53. Department of Engineering and Nanoscience & Engineering Center, University of Pittsburgh, Pittsburgh, PA, November 19, 2004, "Use of the Optical Domain for Nanoscale Measurements in Living Cells: Modeling of Intracellular Processes."
54. Department of Cell Biology & Toxicology Program, University of Cincinnati, Cincinnati, Ohio, December 14, 2004, "Probes Encapsulated By Biologically-Localized Embedding".
55. Michigan Difference Seminars, Naples, Florida, February 22, 2005, "Nanotechnology & Public Health."
56. Michigan Difference Seminars, West Palm Beach, Florida, February 22, 2005, "Nanotechnology & Public Health."
57. Department of Biophysics, Case University, Cleveland, Ohio, February 28, 2005, "Physiology and Therapy in Small Spaces".
58. Society of Toxicology, New Orleans, Louisiana, March 6, 2005, "Nanotechnology: Where's the Toxicology?"
59. Federal Drug Administration, Bethesda, Maryland, March 24, 2005, "Nanotechnology: Pharmacokinetics, Pharmacodynamics, Toxicokinetics and Toxicodynamics."
60. National Institute of Environmental Health Sciences, Workshop, Keystone Colorado, April 7, 2004, "Role of Nanotechnology in Systems Toxicology."
61. STEP Symposium - Library of Medicine, National Institutes of Health, Bethesda, Maryland, April 26, 2005, "Nanotechnology for Real-Time Intracellular Sensing."
62. Calculation to Communication: Promoting Informed Decision-Making about Health Risks – University of Michigan School of Public Health Center for Risk Science and Communication, Inaugural Symposium, Ann Arbor, Michigan, September 15, 2005. "Sensors and Therapeutic Agents – Toxicity."

63. First International Conference on Nanotoxicology: Biomedical Aspects; Miami, FL, January 29 – February 2006, Key-Note Lecture.
64. AAAS Annual Meeting; St. Louis, MO; February 16-20, 2006, "Nanostructure –Based Imaging and Treatment of Tumors."
65. Society of Toxicology Minority Education Program, SOT 45th Annual Meeting; March 5-9, 2006; San Diego, CA; "Nanotechnology and Effectors – Where's the Toxicology?"
66. FDA Center for Devices and Radiological Health Office of Science & Engineering Laboratories, Division of Biology; White Oak, MD; March 14, 2006; Presentation on engineered nanoparticle sensors for consumer and therapeutic uses.
67. Michigan Society of Toxicology Spring Meeting; Augusta, MI; May 19, 2006; "Engineered Polymer Nanoparticles: Sensors, Diagnostics, Therapeutics and Toxicology."
68. Single Molecule Symposium, "At the Single Molecule Frontier: Integration in Biology and Nanotechnology." University of Michigan, May 18 – 19, 2006; "PEBBLE Nanosensors for Live Cell Imaging of Ions, Small Molecules and Electric Fields."
69. Louisiana State University Health Sciences Center, Graduate School Seminar Series sponsored by Department of Pharmacology, Toxicology and Neuroscience and School of Graduate Studies; Shreveport, LA; May 25, 2006; "Nano-Technology, Sensors, Diagnostics, Therapeutics & Toxicology: A Taste of the Future?"
70. Nutrigenomics and Beyond: Informing the Future; The Institute of Medicine; National Academy of Sciences, Washington, DC; June 1-2, 2006; Scientific Session III: Systems Biology; "Emerging Technologies/Nanotechnology."
71. Loma Linda University Medical School, Loma Linda, California; June 9, 2006; "Research at a Research-Intensive University."
72. Procter and Gamble Company, Cincinnati, Ohio, August 23, 2006, "Flexible Nanoparticle Design: Sensors, Imaging and Therapy."
73. EPA Nanotechnology Workshop, Chicago, Illinois; September 7, 2006, "Functional Optical Polymer Nanoparticles: Uses and Toxicology."
74. American Academy of Nanomedicine, Invited Speaker at Second Annual Meeting, Washington DC, September 9, 2006, "Optical Nanosensors for Noninvasive Intracellular Measurement."
75. University of Vermont College of Medicine, Department of Environmental Pathology and Laboratory Medicine, Invited Seminar Speaker, Burlington, Vermont, September 11, 2006, "Nanoscale Approaches to Vital Intracellular Measurements In Vivo Imaging and Therapy."
76. Colorado State University, Department of Biomedical Engineering, September 27, 2006, "Material Science, Biocompatibility and Discovery in Living Cells & Organisms."
77. Colorado State University, Cell and Molecular Biology Graduate Program, September 28, 2006, "Nano-Optical Systems: Imaging, Therapeutics & Toxicity."
78. United States Food and Drug Administration Public Workshop on Nanotechnology Materials in FDA Regulated Products, Natcher Auditorium, Bethesda, Maryland, October 10, 2006, Session 2: General Science, Policy, or Use of Nanotechnology Materials in FDA-Regulated Products, Testimony on Safety of Nanomaterials.
79. University of Kentucky College of Medicine Toxicology Seminar, Graduate Center for Toxicology; October 23, 2006, "Making Measurements in Small Spaces: Size Really Does Matter. Nanoscale Approaches to Imaging, Measurement and Therapy."
80. Institute of Electrical and Electronics Engineers (IEEE) Lasers and Electro-Optics Society (LEOS) 19th Annual Meeting, Montreal, Canada, October 31, 2006, Biophotonics III: Novel Biosensing Methods, "Optical Nanoprobes for Biosensing and Therapy."
81. American College of Toxicology Twenty-Seventh Annual Meeting, Indian Wells, California, November 5, 2006, Co-Chair, Course #5: An Overview of Idiosyncratic Drug Reactions.

82. NIOSH International Conference on Nanotechnology Occupational Health and Safety: Research to Practice, Cincinnati, Ohio; December 4, 2006, "Nanotechnology – Research to Practice."
83. Congressional Briefing, Washington DC, December 5, 2006, "Nanomaterials and Public Health Concerns."
84. Presidents Council of Advisors on Science and Technology (PCAST), Washington DC, January 9, 2007, "Nanotechnology: Risk and Benefits."
85. Wayne State University Division of Research, Nano@Wayne Lecture Series, Detroit, Michigan, January 16, 2007, "Toxicology of NanoBioMaterials."
86. US-Ireland Partnership Sensors Workshop, Dublin, Ireland, February 20, 2007, Session Four, Environmental Sensors, "Nanosensors and Nanotherapeutics."
87. University of Michigan School of Public Health Occupational Health Speaker Series, February 23, 2007, "Nanoparticles and Health: The Good, the Bad, and the Ugly."
88. National Institutes of Health Center for Scientific Review Neuroscience Open House Meeting, Bethesda, Maryland, March 2, 2007.
89. Gradient Corporation, Cambridge, Massachusetts, March 8, 2007, "Dynamic Nanoplatforms for Sensing and Therapy: Risks?"
90. Society of Toxicology 46th Annual Meeting, Charlotte, North Carolina, March 25, 2007, Undergraduate Program, "Nano-A-Nano: The Good , the Bad, and the Ugly."
91. Vanderbilt University School of Medicine, Center in Molecular Toxicology, Nashville, Tennessee, May 17, 2007, "Nanosensors and Actuators in Biology, Toxicology, and Therapeutics."
92. NanoBioNexus Nanotoxicology Seminar, San Diego, California, June 7, 2007, "Nanomaterials for Biological Sensing and Therapeutics."
93. Gordon Research Conference on Adverse Drug Reactions, Waterville, Maine, June 11, 2007, "Nanotechnology and Health: The Good, the Bad, and the Ugly."
95. Oakwood College Department of Biological Sciences Research Initiative for Scientific Advancement Program, Huntsville, Alabama, September 28, 2007, "Nanoscale Optical Sensing: From Intracellular Measurements to Early Detection and Treatment of Tumors."
96. Society of Toxicology Mid-Atlantic Chapter 2007 Fall Conference, Jersey City, New Jersey, October 11, 2007, "NanoOptical Systems: Sensing, Imaging, Therapy and Toxicology."
97. The 17th Annual Conference of the International Society of Exposure Analysis, Durham, North Carolina, October 17, 2007, "Emerging Sensor Technologies for Monitoring Personal Exposures and Early Biological Responses: Toxic Air Pollutants as a Model System."
98. American Industrial Hygiene Association and Society of Toxicology Occupational and Public Health Specialty Section Toxicology Symposium, Louisville, Kentucky, October 18, 2007, "Toxicity Assays and Results of Toxicity Testing to Date."
99. Arkansas Biosciences Institute Fall Research Symposium, Little Rock, Arkansas, October 23, 2007, Keynote Speaker.
100. University of Michigan Risk Science Center 2007 Bernstein Symposium, Ann Arbor, Michigan, October 25, 2007, "Where Do Nanoparticles Go?"
101. American College of Occupational Health Conference on Health 2007 State-of-the-Art Conference, Vancouver, British Columbia, Canada, October 27, 2007, "Medical Applications on Nanotechnology."
102. University of North Carolina Chapel Hill Superfund Basic Research Program, Tampa, Florida, February 20, 2008, "Emerging Nanotechnologies for Intracellular Chemical Imaging, Medical Imaging."
103. University of Connecticut Toxicology Scholars Colloquium, Storrs, Connecticut, March 2, 2008, "Smart Nanoparticles and Where They Go."

104. Society of Toxicology 2008 Annual Meeting, Seattle, Washington, March 16, 2008, "Nano-a-Nano, The Good, the Bad, and the Ugly."
105. Toxicology Training Program, University of Rochester Department of Environmental Medicine, Rochester, New York, May 16, 2008, "Smart Nanopolymers for Medical Imaging and Therapy: Where Do They Go?"
106. American Thoracic Society International Conference, Toronto, British Columbia, Canada, May 21, 2008, "The Use of Optical Nanosystems for Imaging and Intracellular Sensing."
107. American Industrial Association Hygiene Association AIHce'08, Minneapolis, Minnesota, June 3, 2008, "Lessons Learned From Therapeutic and Diagnostic Nanoparticles."
108. Society of Environmental Toxicology and Chemistry (SETAC) Fifth Annual World Congress, Sydney, Australia, August 5, 2008, "Smart Polymers for Intracellular Imaging, Medical Imaging and Therapy."
109. Department of Pharmacology & Toxicology, Indiana University School of Medicine, Edwin Harper Visiting Scholar Series, Indianapolis, Indiana, September 9, 2008, "Nanosensing, Medical Imaging, and Toxicological Implications of Using Nanostructures."
110. Michigan Occupational & Environmental Association in cooperation with the Michigan Association of Occupational Health Nurses, and the Michigan Industrial Hygiene Society 2008 Carey Pratt McCord Lecture, October 22, 2008, "Engineered Polymer Nanoparticle Platforms: Imaging and Safety."
111. Annual Biomedical Research Conference for Minority Students (ABRCMS), Orlando Florida, November 6, 2008, Plenary Scientific Session, "Nanomaterials and Health: The Good, the Bad, and the Ugly."
112. Advancing Science Serving Society (AAAS) Annual Meeting, Chicago, Illinois, February 14, 2009, "From Donuts to Drugs: Nano-Biotechnology Evolution or Revolution?"
113. Society of Toxicology 2009 Annual Meeting, Baltimore, Maryland, March 15, 2009, "Nano-a-Nano, The Good, the Bad, and the Ugly."
114. Experimental Biology Symposium, New Orleans, Louisiana, April 21, 2009, "Nanotechnology approaches for medical and nutrition research."
115. Northland Chapter of the Society of Toxicology Spring Meeting, St. Paul, Minnesota, April 22, 2009, "Sensing Imaging and Therapy in Small Spaces".
116. Second Annual Dartmouth Integrative Biology Symposium, Hanover, New Hampshire, April 29, 2009, "Polymer-nano-intracellular sensors, imaging agents and targeted photodynamic modules: making them safe".
117. Mid-Atlantic Chapter Society of Toxicology (MASOT), Newark, New Jersey, May 7, 2009, "Joys and Pitfalls of Interdisciplinary Research".
118. Boston University Biomolecular Seminar Series, Boston, Massachusetts, May 11, 2009, "Nanometer resolution for intracellular imaging, brain tumor imaging and therapy".
119. Academy of Toxicological Sciences Staff luncheon, Reston, VA, May 20, 2009, "Nano-101"
120. American Industrial Hygiene Association (AIHce) Conference and Expo, Toronto, Canada, June 2, 2009, "Engineered Nanoparticles: Occupational Hazard or Therapeutic Platform".
121. Diversity in Bioengineering, Oakland University, Rochester, MI, July 15, 2009, "From Nano to Medicine".
122. 6th International Key Symposium Nanomedicine, Stockholm, Sweden, September 11, 2009, "Flexible nanoplatforms for intracellular chemical imaging and early detection and treatment of brain tumors"
123. University of Illinois, Champaign, Illinois, September 29, 2009, "Flexible Polymer NanoPlatforms for Imaging, Sensing and Therapy"

124. Society of Toxicology, North California Chapter fall Symposium, Oakland, California, October 8, 2009, "Engineered Nanoparticles: Occupational hazard or therapeutic platform".
125. National Nanotechnology Initiative (NNI) Workshop, Washington, DC, November 17, 2009, "Biological *in vivo* interactions of engineered nanomaterials".
126. EPA OPP Seminar, Arlington, VA, November 19, 2009, "Biological in vivo Interactions of Engineered Nanomaterials: Lessons learned from designing the *perfect biomedical imaging agent"*
127. Nanomedicine Grant Meeting, Minneapolis, MN, January 21, 2010, "Status of Nanomedicine Research in Human Beings"
128. Society of Toxicology 2010 Annual Meeting, Salt Lake City, Utah, March 7, 2010, Undergraduate Program, "Optical Nanotechologies for Imaging of Cellular Processes and Neurosurgery".
129. Allegheny – Erie Chapter Society of Toxicology 24th Annual Fall Meeting, Pittsburgh, PA, April 30, 2010, "Toxicology as the basis for smart design of nanoimaging and nanotherapeutic agents".
130. Nanotoxicology 2010, June 4, 2010, "Integrated approach to the early development of nanomaterials for the detection and treatment of brain tumors", Keynote Speaker.
131. STP/IFSTP 2010 Joint Neuropathology Symposium, June 23, 2010, Chicago, IL, "Toxicant-Induced Neurodegeneration"
132. Toyota Technical Center, October 14, 2010, Ann Arbor, MI, "Nanomaterials: Promise and Potential Problems"
133. Grand Rounds Columbia University, New York, NY, December 8, 2010, "Scaling the Problem: From genes to public health"

FUNDRAISING AND LOBBYING ACTIVITIES

- July 21, 2009 Met with Congressman David Wu and staff. Value of Toxicology in the evaluation of new technologies such as nano.
- March 5, 2009 Met with Linda Birnbaum (NIEHS). Articulate value of closer collaboration between NIEHS and the Society of Toxicology.
- June, 2005 Charles and Rita Gelman Endowed Professorship in Risk Science ($2.9M). Additional Gift ($100,000/year for each of 3 years)
- October, 2004 Wrote NCRR Facilities Grant for new construction project ($3.7M awarded, Sept, 2005)
- April 3- 5, 2005 Met with John Graham (OMB) and Michigan Congressional Delegation. Lobbied for inclusion of mark-up language for establishment of Risk Science Centers at the National Institute of Environmental Health Sciences. ($15 M). Language included April 6, 2005.
- Currently: Working with various industries to develop endowments for scholarships, internships, professorships, centers, and academic programs.

COMMUNITY SERVICE COMMITTEES

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