Curriculum Vitae

Andrew M. Dahlem, D.V.M. (*h.c.*), Ph.D.

Senior Research Professor of Medicine and
Chief, Division of Clinical Pharmacology
Indiana University School of Medicine

Current Responsibilities

Advancing the science of clinical pharmacology, translational medicine and therapeutics through education and training of new scientists for leadership careers in academia, pharmaceutical industry, biotechnology and drug regulatory settings. Leading a department of world class experts in conduct of ground breaking basic, translational and clinical research and discovery designed to improve the understanding and prediction of therapeutic drug action, therapeutic efficacy, and safety in humans to aid in personalizing drug therapy. Providing clinical pharmacology and pharmaceutical expertise to enhance the rational use of medicines across the medical centers at the university and beyond.

Previous Responsibilities at Eli Lilly and Company

Vice President and Chief Operating Officer of Lilly Research Laboratories (LRL) and Lilly Research Laboratories in Europe and reported to the President of Lilly Research Laboratories. Member of Lilly Senior Management. Responsibilities included linking business with scientific and portfolio needs and financial and operational processes to enable Lilly Research and to advance the Lilly Research portfolio. Responsible for shared scientific oversight of portfolio entry decisions, IND and NDA review of drug disposition and toxicology submissions since 1994. Led the Lilly Research Operations Group with responsibilities for compliance, external outsourcing, business development, facilities, competitive intelligence, portfolio enablement, strategic business process improvement, Six Sigma productivity improvement, and global research management. Worked directly with the President of Lilly Research Laboratories to allocate research and development investments. Vice-chair of Lilly's Portfolio Management Team with responsibility for scientific and preclinical review and decision making for projects in the research and development portfolio and external acquisition of molecules and technologies. Responsible for mentoring and developing high potential scientific and technical leaders for Lilly Research. Led business process integration efforts for strategic acquisitions and divestitures. Built a research center in Shanghai, China. Served as liaison to strategic partners in academia and business for Lilly. Responsible for strategy and integration of operations of Lilly Research Laboratories in Europe (Belgium, England, Germany, Spain). Served as President, Hypnion Corporation which was a Lilly acquisition of science and technology.

Education and Degrees Granted

Purdue University College of Veterinary Medicine West Lafayette, IN	DVM *(h.c)*	Veterinary Medicine	2014
University of Illinois College of Veterinary Medicine Urbana, IL	PhD	Toxicology	1989
The Ohio State University College of Animal Sciences Columbus, OH	BS	Biology	1982

Additional Education

Harvard Business School Executive Education Program, Transforming Pharmaceutical R&D	2007
Harvard Business School Executive Education Program, Eli Lilly Leadership Program	2006
MIT Sloan School Executive Series of Management, Innovation & Technology, Managing Technical Professionals & Organizations	2003

Licenses/Certifications

Registered Animal Health Technician, State of Ohio (inactive)

Previous Academic Appointments

Adjunct Professor, University of Illinois at Urbana-Champaign
Department of Veterinary Biosciences

Adjunct Professor, Purdue University, Department of Veterinary Pathobiology

Adjunct Professor, The Ohio State University
Department of Veterinary Biosciences

The Ohio State University College of Pharmacy Corporate Council, 2008-

Employment History

Lilly Research Laboratories A Division of Eli Lilly and Company Indianapolis, IN	Vice President, Chief Operating Officer and LRL Europe	2007-2017
Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN/Indianapolis, IN	Vice President, Toxicology, Drug Disposition, Pharmacokinetics, and LRL Europe	2003-2006

Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN/Indianapolis, IN	Vice President, Drug Disposition, Pharmaco- kinetics, Discovery Operations, and Lilly Research Laboratories in Europe	2001-2002
Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN/Indianapolis, IN	Executive Director, Toxicology, Drug Disposition, Pharmaco-kinetics, Discovery Operations, and Lilly Research Laboratories in Europe	1999-2001
Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN/Indianapolis, IN	Executive Director, Toxicology and Drug Disposition	1998-1999
Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN/Indianapolis, IN	Director, Drug Disposition and Investigative Toxicology	1997-1998
Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN/Indianapolis, IN	Director, Drug Disposition and Biochemical Toxicology	1994-1997
Lilly Research Laboratories A Division of Eli Lilly and Company Greenfield, IN	Head, Biochemical Toxicology	1992-1994
Lilly Research Laboratories A Division of Eli Lilly and Company Indianapolis, IN	Senior Pharmacologist, Drug Metabolism and Disposition	1990-1992
Marion Merrell Dow Research Institute Marion Merrell Dow Pharmaceuticals, Inc. Cincinnati, OH	Senior Research Chemist, Drug Metabolism and Disposition	1989-1990
University of Illinois Urbana, IL	Graduate Research Assistant, Department of Veterinary Biosciences	1985-1989
	Analytical Toxicologist, Department of Veterinary Biosciences	1984-1985
Toxicology Associates Incorporated Columbus, OH	Analytical Toxicologist	1982-1984
Ohio Department of Health Columbus, OH	Laboratory Technician II, Vector-Borne Disease Unit	Summers of 1980, 1981, 1982, 1983
Ohio State University Columbus, OH	Library Assistant, Veterinary Medicine Library	1980-1982

Old Troy Pike Veterinary Clinic, Inc. Dayton, OH	Registered Animal Health Technician	1975-1980

Professional Memberships
American Association of Pharmaceutical Scientists
American Association for the Advancement of Science
American Society of Clinical Pharmacology and Experimental Therapeutics
International Society for the Study of Xenobiotics
Society of Toxicology

Professional Activities
Ohio State University Center for Clinical and Translational Science External Advisory Board, 2012
Purdue University Discovery Park Advisory Council, 2012-2016
Institute of Medicine Forum on Drug Discovery, Development and Translation, 2011-2017
Illinois Professional Science Master's Board, 2009-2016
Ohio State University College of Pharmacy Corporate Council, 2008-present
PhRMA Preclinical Safety Leadership Committee (Formally DruSafe), Chair, 2007, Vice Chair 2006, Member since 2001
National Association for Biomedical Research Board of Directors, 2007-2008
Product Quality Research Institute, Co-Chair, 2002-2003
Indianapolis/Cincinnati Discussion Group of the American Association of Pharmaceutical Scientists: Program Chairman, 1990-1991; President Elect, 1991-1992; President, 1992-1993
Ohio Veterinary Medical Association: Registered Animal Health Technician
Committee on Undergraduate Education Affairs of the American Association of Pharmaceutical Scientists: Pharmacokinetics, Pharmacodynamics Subsection

Awards/Honors/Citations
Joseph O Alberts Award
Sigma Xi Honor Society
Lilly Research Laboratories President's Award for Diversity
University of Illinois Dr. Erwin Small Distinguished Alumni Award

Board Appointments
Indigo Biosystems Inc. Advisory Board (2006-current) Founder
National Association for Biomedical Research (2008-2015)
YourEncore Board of Advisors (2008-2015)
Indiana State Museum Foundation Board (2006-current)
Scienteur, Inc. Senior Advisory Board (2004-2008)

Lilly Transformation Activities
Leader of Diagnosis and Design of Program Team phase of Drug Discovery and Development under our Quality, Speed, Value Initiative (1995-1996)
Design Leader of Research Governance Redesign in Research Transformation Effort (2007-2008)

Leadership V – Participant in Senior Leadership Development Program which designed the Lilly Accelerator Group which led to the creation of the companies: YourEncore, InnoCentive, Scienteur, and the Lilly Internal Development Process called "Chorus". (2000)

Publications

Swanson SP, Dahlem AM, Rood Jr HD., Cote L-M, Yoshizawa T, Buck WB. 1986. Gas chromatographic analysis of deoxynivalenol and its metabolite DOM-1 in milk. J Assoc Official Analytical Chemists 69. 1:41-43.

Cote L-M, Dahlem AM, Yoshizawa T, Swanson SP, Buck WB. 1986. Excretion of deoxynivalenol and its metabolite DOM-1 in milk, urine and feces of lactating dairy cows. J Dairy Sci 69:2416-2423.

Dahlem AM, Swanson SP, Cote L-M, Yoshizawa T, Buck WB. 1986. Quantitation of deoxynivalenol and its metabolite DOM-1 in bovine urine and feces by gas chromatography with electron capture detection. J Chrom-Biomed Appl 378. 1:226-231.

Harada K-I, Suzuki M, Dahlem AM, Beasley VR, Carmichael WW, Rinehart KL. 1988. Improved method for purification of toxic peptides produced by cyanobacteria. Toxicon 26. 5:433-439.

Cook WO, Beasley VR, Dahlem AM, Dellinger JA, Harlin KS, Carmichael WW. 1988. Comparison of effects of anatoxin-a(s) and paraoxon, physostigmine and pyridostigmine on mouse brain cholinesterase activity. Toxicon 26. 8:750-753.

Harada K-I, Matsuura K, Suzuki M, Watanabe MF, Oishi S, Dahlem AM, Beasley VR, Carmichael WW. 1988. Analysis and purification of toxic peptides from cyanobacteria by reversed-phase high-performance liquid chromatography. J Chrom 448:275-283.

Rinehart KL, Harada K-I, Namikoshi M, Chen C, Harvis CA, Munro MHG, Blunt JW, Mulligan PE, Beasley VR, Dahlem AM, Carmichael WW. 1988. Nodularin, microcystin and the configuration of Adda. J Amer Chem Soc 110:8557-8558.

Dahlem AM, Hassan AS, Swanson SP, Carmichael WW, Beasley VR. 1989. A model system for studying the bioavailability of microcystin-LR, a hepatotoxic peptide from the cyanobacterium *Microcystis aeruginosa*. Pharmacol Toxicol 64:177-181.

Beasley VR, Dahlem AM, Cook WO, Valentine WM, Lovell RA, Hooser SB, Harada K-I, Suzuki M, Carmichael WW. 1989. Diagnostic and clinically important aspects of cyanobacterial (blue-green algae) toxicoses. J Vet Diagn Invest 1:359-365.

Namikoshi M, Rinehart KL, Dahlem AM, Beasley VR, Carmichael WW. 1989. Total synthesis of ADDA, the unique C20 amino acid of cyanobacterial hepatotoxins. Tetra Let 30:4349- 4352.

Sivonen K, Kononen K, Carmichael WW, Dahlem AM, Rinehart KL, Kiviranta J, Niemela SI. 1989. Occurrence of the hepatotoxic cyanobacterium. *Nodularia spumigena* in the Baltic Sea and the structure of the toxin. Appl Environ Microbiol 55:1990-1995.

Beasley VR, Cook WO, Dahlem AM, Hooser SB, Lovell RA, Valentine WM. 1989. Algae intoxication in livestock and waterfowl. Veterinary Clinics of North American Food Animal Practice. 5:345-361.

Lovell RA, Schaeffer DJ, Hooser SB, Dahlem AM, Carmichael WW, Beasley VR. 1989. Toxicity of intraperitoneal of microcystin-LR in two strains of male mice. J Environ Pathol Toxicol Oncol 9:221-238.

Cook WO, Dellinger JA, Singh SS, Dahlem AM, Carmichael WW, Beasley VR. 1989. Regional brain cholinesterase activity in rats injected intraperitoneally with anatoxins a(s) or paraoxon. Toxicol Let 49:29-34.

Cook WO, Dahlem AM, Lovell RA, Hooser SB, Beasley VR. 1989. Consistent inhibition of peripheral cholinesterase by neurotoxins from the freshwater cyanobacterium. *Anabaene flos-aquae*; studies of ducks, swine, mice and a steer. Environ Toxicol Chem.8:915-922.

Harada K-I, Kimura Y, Ogawa L, Suzuki M, Dahlem AM, Beasley VR, Carmichael WW. 1989. A new procedure for the analysis and purification of naturally occurring anatoxin-a from the blue-gree algae. *Anabaena flos-aqua*. Toxicon 27:1289-1296.

Harada K-I, Matsuura K, Suzuki M, Watanabe MF, Oishi S, Dahlem AM, Beasley VR, Carmichael WW. 1990. Isolation and characterization of the minor components associated with microcystins LR and RR in the cyanobacterium (blue-green algae). Toxicon 28:55-64.

Meriluoto JAO, Eriksson JE, Harada K-I, Dahlem AM, Sivonen K, Carmichael WW. 1990. Internal surface reversed-phase high-performance liquid chromatographic separation of the cyanobacterial peptide toxins microcystin-LA, LR, YR, RR and nodularin. J Chromatography 509:390-395.

Sivonen K, Carmichael WW, Namikoshi M, Rinehart KL, Dahlem AM, Niemela SI. 1990. Isolation and characterization of hepatotoxic microcystin homologs from the filamentous freshwater cyanobacterium *Nostoc* sp. strain 152. Applied and Environmental Microbiology 56. 9:2650-2657.

Meriluoto JAO, Nygard SE, Dahlem AM, Eriksson JE. 1990. Synthesis, organotropism and hepatocellular uptake of two tritium-labeled epimers of dihydromicrocystin-LR, a cyanobacterial peptide toxin analog. Toxicon 28. 12:1439-1445.

Cook WO, Dahlem AM, Harlin KS, Beasley VR, Hooser SB, Haschek WM, Carmichael WW. 1990. Reversal of cholinesterase inhibition and clinical signs and the postmortum findings in the mice after intraperitoneal administration of anatoxin-a(s). Paroxon or Pyridostigmine. Vet Hum Toxicol 33(1):1-4.

Beasley VR, Lovell RA, Dahlem AM, Haschek WM, Hooser SB. 1991. Cyclic peptide hepatotoxins from cyanobacteria in: toxicology of plant and fungal compounds. Keeler RF, Tu AF, editors. Marcel Dekker. 22:459-495.

Hooser SB, Kuhlenschmidt MS, Dahlem AM, Beasley VR, Carmichael WW, Haschek WM. 1991. Uptake and subcellular localization of tritiated dihydro-microcystin-LR in rat liver. Toxicon 29. 6:589-601.

Namikoshi M, Rinehart KL, Sakai R, Stotts RR, Dahlem AM, Beasley VR, Carmichael WW, Evans WR. 1992. Identification of 12 hepatotoxins from a homer lake bloom of the cyanobacteria microcystis aeruginose, microcystis viridis, and microcystis wesenbergii: nine new microcystins. J Organic Chem 57:866-872.

Stotts RR, Namikoshi M, Haschek WM, Rinehard KL, Carmichael WW, Dahlem AM, Beasley VR. 1993. Structural modifications imparting reduced toxicity in microcystins from microcystis SPP. Toxicom 31(6):783-789.

Dahlem AM, Allerheiligen SRB, Vodicnik MJ. Concomitant Toxicokinetics: Techniques for and Interpretation of Exposure Data Obtained During the Conduct of Toxicology Studies. Toxicol.Pathol. Mar-Apr 1995, 23(2): 170-8.

Wagner JA, Dahlem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, DeFeo C, Austin CP. 2017. Application of a Dynamic Map for Learning, Communicating, Navigating, and Improving Therapeutic Development. Clinical and Translational Science. 11(2):1-17. https://doi.org/10.1111/cts.12531.

Wagner J, Dahlem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, DeFeo C, Austin CP. 2018. A Dynamic Map for Learning, Communicating, Navigating and Improving Therapeutic Development. Nature Reviews Drug Discovery. 17(2):150. https://doi.org/10.1038/nrd.2017.217.

Abstracts/Presentations

Dahlem AM, Swanson SP, Cote L-M, Yoshizawa T, Buck WB. 1985. Quantitation of deoxynivalenol and its metabolite DOM-1 in bovine milk, urine, and feces. Chicago, IL. Midwest Regional Meeting of the Association of Official Analytical Chemists.

Cote L-M, Dahlem AM, Yoshizawa T, Swanson SP, Buck WB. 1986. Excretion of deoxynivalenol and its metabolite, DOM-1 in milk, urine, and feces of lactating dairy cows. Dublin, Ireland. 14th World Congress on Cattle Diseases.

Dahlem AM, Harada K-I, Harvis CA, Rinehart KL, Munro MHG, Blunt JW, Mulligan PE, Beasley VR. 1987. Structure/toxicity relationships of the dehydroamino acid from a cyclic peptide hepatotoxin produced by blue-green algae. Washington DC. 26th Annual Meeting Society of Toxicology.

Harada K-I, Suzuki M, Oka H, Dahlem AM, Beasley VR, Carmichael WW, Rinehart KL. 1987. Development of isolation and analysis methods for cyclic peptides produced by cyanobacteria. Plymouth NH. Gordon Research Conference on Mycotoxins and Phycotoxins.

Dahlem AM, Hassan AS, Swanson SP, Carmichael WW, Beasley VR. 1988. A model system for studying the intestinal absorption of microcystin-LR, a hepatotoxic peptide from the cyanobacterium *Microcystis aeruginosa*. in the rat. Dallas, TX. 27th Annual Meeting Society of Toxicology. Portions also presented at Gordon Research Conference on Mycotoxins and Phycotoxins, Plymouth NH. 1987.

Harada K-I, Kimura Y, Suzuki M, Dahlem AM, Beasley VR, Carmichael WW. 1988. Structural studies on a neurotoxin, anatoxin-a(s) produced by a toxic blue-green algae (I)-Development of an isolation method. Hiroshima, Japan. Annual Meeting Pharmaceutical Society of Japan.

Harada K-I, Matsuura K, Suzuki M, Watanabe MF, Dahlem AM, Beasley VR, Carmichael WW. 1988. Toxic peptides from four different microcystis strains. Kyoto, Japan. 16th International Symposium of the Chemistry of Natural Products.

Lovell RA, Holmes KR, Schaeffer DJ, Valentine WM, Dahlem AM, Carmichael WW, Beasley VR. 1988. Hemodynamics, hepatic and renal perfusion, and selected clinical parameters in swine administered microcystin-LR intravenously. Copper Mountain, CO. FASEB Summer Research Conference on Trichothecene, Blue-green Algal and Marine Toxins:Mechanisms, Detection and Therapy.

Dahlem AM, Beasley VR, Harada K-I., Matsuura K, Suzuki M, Harvis CA, Rinehart KL, Carmichael WW. 1988. The structure/toxicity relationships of unsaturated amino acids in microcystin-LR and modularin, two monocyclic peptide hepatotoxins from cyanobacteria. Copper Mountain, CO FASEB. Summer Research Conference on Trichothecene, Blue-green Algal and Marine Toxins:Mechanisms, Detection and Therapy.

Valentine WM, Behrens JC, Amos RA, Duquette PH, Dahlem AM, Beasley VR. 1988. Effect of configuration on lethality and in vivo effects on the neuromuscular junction of anatoxin-a. Stillwater, OK. International Society of Toxicology-9th World Congress on Animal, Plant, and Microbial Toxins.

Cook WO, Dahlem AM, Hooser SB, Haschek-Hock WM, Harlin KS, Carmichael WW, Beasley VR. 1988. Reversal of cholinesterase inhibition in plasma, red blood cells, and diaphragm; clinical signs and postmortem findings in mice after introperitoneal injection of anatoxin-a(s) and paraoxon, or pyridostigmine. Stillwater, OK. International Society of Toxinology-9th World Congress on Animal, Plant, and Microbial Toxins.

Dahlem AM, Hassan AS, Waite LL, Carmichael WW, Beasley VR. 1988. Evidence for a role of glutathione in the toxicity of microcystin-LR, a toxin from the cyanobacterium *Microcystis aeruginosa*. Stillwater, OK. International Society of Toxinology-9th World Congress on Animal, Plant, and Microbial Toxins.

Harada K-I, Matsuura K, Kimura Y, Ogawa L, Suzuki M, Watanabe MF, Dahlem AM, Beasley VR, Carmichael WW. 1988. Chemical analysis methods of toxic compounds produced by cyanobacteria. Nagoya, Japan. Eighth Symposium on Analytical Chemistry of Biological Substances.

Beasley VR, Lovell RA, Holmes KR, Schaeffer DJ, Valentine WW, Dahlem AM, Hooser SB, Carmichael WW. 1989. Effects of microcystin-LR (MCLR) on intravenously dosed swine. Atlanta, GA. Society of Toxicology, 28th Annual Meeting.

Dahlem AM, Beasley VR, Harada K-I, Matsuura K, Suzuki M, Harvis CA, Rinehart KL, Carmichael WW. 1989. The role of (a,ß) unsaturated amino acid in the toxicity of microcystin-LR and nodularin, two hepatotoxins from cyanobacteria. Atlanta, GA. Society of Toxicology, 28th Annual Meeting.

Dahlem AM. 1989. Structure/toxicity relationships in cyclic peptide hepatotoxins from cyanobacteria. Plymouth, NH. Gordon Summer Research Conference on Mycotoxins and Phycotoxins in Human and Animal Health.

Dahlem AM. 1989. Reversed phase high performance liquid chromatography (HPLC) analysis of monocyclic peptide hepatotoxins from cyanobacterial (blue-green algae). Miami Beach, FL. Symposium on the Applications of Capillary Chromatography. 198th National Meeting American Chemical Society.

Dahlem AM. 1990. Toxicology of cyanobacterial cyclic peptides. Lucca, Italy. European Science Foundation and the Commission of the European Communities: European Research Conference on Mechanisms in Toxicity: Elucidation and Application.

Eckstein JA, Schreiner KM, Kasher JS, Wrighton SA, Kaldor SW, Dahlem AM. 1991. Pharmacokinetics, pharmacodynamics and in vitro metabolism of the HIV protease inhibitor LY289612. Indianapolis, IN. Lilly Lab Expo.

Dahlem AM, Eckstein JA. 1992. Disposition of the novel NMDA Antagonist, LY235959, in rats, dogs, and monkeys. San Antonio, TX. American Association of Pharmaceutical Scientists.

Dahlem AM. 1992. Use of preclinical animal metabolism and distribution studies to evaluate potential drug/drug interactions. Chicago, IL. American Association of Pharmaceutical Scientists Midwest Regional Meeting.

Dahlem AM. 1993. Environmental Toxicology. Indianapolis, IN. Indiana Veterinary Research Session.

Eckstein JA, Swanson SP, Dahlem AM. 1994. Disposition of the novel AMPA antagonist, LY293558, in rats and dogs following intravenous administration. San Diego, CA. American Association of Pharmaceutical Scientists.

Wheeler WJ, Huff BE, Ornstein PL, Arnold MB, Eckstein JA, Swanson SP, Dahlem AM. 2006. The synthesis of tritiated (3S, 4aR, 6R, 8aR) – Decahydro-6-[2-(1H-tetrazol-5-yl)ethyl]-3- isoquinolinecarboxylic acid and its use in disposition studies in laboratory animals. 9th International Symposium on the Synthesis and Use of Isotopically Labeled Compounds, Edinburgh, Scotland, United Kingdom.

Selected Invited Lectures

Drug Disposition and Bioanalytical Support for Drug Discovery and Development, University of Illinois Urbana-Champaign, February 1996.

Drug Discovery and Development Research, Multinational Pharmaceutical Companies, Purdue University, February 24, 1997.

Industrial Toxicology and Pathology, University of Illinois Urbana-Champaign, May 19, 1997.

Drug Disposition and Bioanalytical Support for Drug Discovery and Development, University of Illinois Urbana-Champaign, May 10, 2000.

Bioanalytical Chemistry, Envirovet Lecture, University of Illinois Urbana-Champaign, July 25, 2001.

The Shared Responsibility of Academia and Industry in the Development of Scientific Leaders with Integrity, Institute of Medicine Lecture, Washington, DC, October 10, 2002.

The Future of Toxicology, ADME, and Pharmacokinetics in Pharmaceutical Research and Development, University of Washington, April 29, 2003.

Quality of Data Lecture, University of Illinois Urbana-Champaign, September 23, 2003.

How to Become a Pharmaceutical Scientist in Two Easy Lessons, University of Illinois Urbana-Champaign, October 17, 2003.

Where Do Drugs Come From: The Facts About Pharmaceutical Innovation, R&D Directions Drug Development Summit, Phoenix, AR, February 9, 2004.

Toxicology and Drug Disposition: General Overview of Drug Development, Mayo Clinic, Rochester, MN, February 25, 2005.

Role of ADME in Drug Discovery and Development and the Effective use of Toxicology in Drug Development. Center for Drug Evaluation (CDE), Beijing China. Drug Nonclinical Safety Assessment Symposium, April 9, 2005.

Quality of Data Lecture at University of Illinois Urbana-Champaign, September 6, 2005.

Pharmaceutical Discovery and Development: How scientists in pharmaceutical companies discover and develop medicines in the modern world, The Ohio State University, Columbus, OH, November 8, 2005.

Bench to Bedside: How new medicines are discovered and developed, The Ohio State University College of Pharmacy, Columbus, OH, October 26, 2006.

Quantitative Pharmacology: A Transformational Paradigm, Eli Lilly and Company Quantitative Pharmacology Summit, Indianapolis, IN, April 17, 2007.

1000 Days to the Patient: From the Bench to the Bedside, Lilly Scientific Expo 2007, Indianapolis, IN, April 24, 2007.

Transformation of the Pharmaceutical Industry: The Role of Critical Path, American College of Clinical Pharmacology Annual Meeting, San Francisco, CA, September 10, 2007.

Quality of Data, University of Illinois at Urbana-Champaign, College of Veterinary Biosciences, Urbana-Champaign, IL, October 2, 2007.

Strategic Partnerships and Value Creation, Association of Clinical Research Organizations, 2008 Clinical Outsourcing Leader Summit, Washington, DC, November 13, 2008.

Drug Discovery and Development: Why does it take so long and cost so much to bring medicines to patients in need? Ohio State University, Columbus, OH, January 22, 2009.

Outsourcing Partnerships and Practices, Tufts Center for the Study of Drug Development Leadership Forum, Boston, MA, May 14, 2009.

Strategic Partnering to Improve R&D Productivity, International Conference on Drug Development, Austin, TX, February 22, 2010.

Strategic Sourcing of Discovery and Development in Pharma: Past, Present and Future, Indiana/Ohio Discussion Group, Indianapolis, IN, March 11, 2010.

Strategic Sourcing of Discovery and Development in Pharma, Future of Clinical Trials Conference, Indianapolis, IN, September 16, 2010.

Strategic Sourcing of Pharmaceutical Research and Development: The Next Generation, The Safety Pharmacology Society Meeting, Boston, MA, September 23, 2010.

Industry Perspective on Regulatory Science, Institute of Medicine Forum, Washington, DC, September 20, 2011.

Open Innovation Networks and Strategic Partnerships in Drug Discovery and Development, US-Russia Scientific Forum Meeting, Moscow, Russia, November 16, 2011.

Future of Drug Discovery and Development: Critical Role of International Partnerships, Mind Scientific Symposium, Moscow, Russia, November 18, 2011.

Drug Discovery and Development: New Opportunities for Industry/Academic Collaborations, University of Kentucky, Lexington, KY, April 9, 2012.

The Future of Drug Innovation, The Ohio State University, Columbus, OH, May 17, 2012

The Future of Drug Innovation, University of Cincinnati, Cincinnati, OH, July 23, 2012.

Transformations in the Pharma Industry, Indiana Clinical and Translational Sciences Institute, Indianapolis, IN, August 31, 2012.

Transformations in the Pharma Industry, University of Iowa, Iowa City, IA, November 28, 2012.

Why Drugs Fail and What We Can Do About it, American Society for Clinical Pharmacology and Therapeutics, Indianapolis, IN, March 7, 2013.

Transformations in the Pharma Industry, The Ohio State University Wexner Medical Center, Columbus, OH, August 30, 2013.

The Strategic Importance of Biobanking to the Discovery and Development of New Medicines, Leaders in Biobanking Congress, Indianapolis, IN, November 4, 2013.

Transformations in Pharmaceutical Research: New Opportunities for Collaboration, The Ohio State University, Columbus, OH, May 15, 2014.

Pharmaceutical Research at Lilly Research Laboratories and New Opportunities for Collaboration, Mayo Clinic, Rochester, MN, August 18, 2014.

The Evolution of Pharmaceutical Research at the Interface of Academia and Industry, Penn State University, College Station, PA, October 7, 2015.

A Perspective on External Innovation, The Ohio State University College of Pharmacy, Columbus, OH, August 23, 2017.

Activating Men as Allies Session, Integrating Woman Leaders Foundation, Inc., (IWLF) Women's Leadership Conference, Indianapolis, IN, August 31, 2017.

Overview of Lilly, 6th Annual TVM Capital Life Science Autumn Conference, Montreal, Canada, September 18, 2017.

Overview of Lilly, Abingworth's Annual Meeting, London, UK, September 21, 2017.

Future Challenges for Industry-Funded Research, Clinical Research Forum, Washington D.C., September 25, 2017.

The Evolution of Pharmaceutical Research at the Interface of Academia and Industry, The Ohio State University Center for Clinical & Translational Science, Columbus, OH, October 9, 2017.

Strategy for Lilly Research Laboratories, Crane Division of the Naval Surface Warfare Center, Lilly Corporate Center, Indianapolis, IN, October 11, 2017.