

# GRACE MARTHA FURMAN, PhD DABT

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## ***PROFESSIONAL EXPERIENCE***

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### **Paracelsus, Inc. President/ CEO**

**2007-present**

Independent consultant providing comprehensive professional toxicology services to the pharmaceutical industry.

### **Pfizer Global R&D - La Jolla Laboratories Worldwide Safety Sciences (WWSS) Senior Director, Regulatory Safety Assessment**

**2003-2006**

Senior management position entailing dual roles of WWSS Leadership Team member and Senior Director/Regulatory Safety Assessment. As WWSS Leadership Team member, provided strategic and operational leadership to WWSS global line and to WWSS La Jolla site business unit. As Senior Director, managed and directed the WWSS La Jolla Regulatory Safety Assessment department in a manner consistent with regulatory requirements and in conformance with expected business practices. Responsible for delivery of high quality, globally acceptable nonclinical regulatory strategies and supporting documentation ensuring early entrance into clinical testing and earliest possible registration of pharmaceutical products in target markets. Prepared and coordinated nonclinical safety contributions to worldwide regulatory submissions (e.g., CTD, IND, CTA/CTX, Investigator Brochures, IND/NDA Annual Reports, PSURs, product labeling, etc.). Included oversight of submission timelines, coordination of document reviews and assurance of overall technical quality (including submission-ready format and compliance to international standards). Provided regulatory post marketing and lifecycle management support (tracking/documentation of Phase IV commitments; CDS; SmPC, labeling supplements). Coordinated, prepared, and reviewed responses to queries from global health authorities concerning nonclinical information. As appropriate, represented Company during interactions with global health authorities. Catalyzed and managed functional interface between site WWSS and Worldwide Regulatory Affairs & Quality Assurance (WRAQA) business units to ensure appropriate alignment of nonclinical safety and regulatory strategies across four therapeutic area portfolios (oncology, antivirals, ophthalmology, diabetes/obesity). Supported regulatory, legal and Corporate compliance of La Jolla WWSS business unit through ensuring understanding of and compliance with relevant corporate and global regulatory policies, perspectives, guidances, and initiatives. Provided nonclinical safety consultation and expertise to internal stakeholder business units. Provided leadership in divisional and global line business initiatives. Recruited, managed and developed subordinates to their full scientific and career potentials.

**Pfizer Global R&D - La Jolla Laboratories  
Worldwide Safety Sciences  
Toxicologist/Manager (1999-2000)  
Assistant Director, Regulatory Safety Assessment (2000-2003)**

**1999-2003**

Successive positions of increasing responsibility entailing dual management and cross-functional project team member roles. As Manager/Assistant Director, served as point of contact/point of accountability for coordination and critical review of all regulatory documentation produced across projects by the site Safety Sciences business unit. Authored toxicology contributions to regulatory submissions and other scientific documents. As appropriate, represented Company during interactions with regulatory authorities. Served as departmental resource for contemporary advice on relevant corporate and global regulatory policies, perspectives, guidances, and initiatives. Maintained departmental archives of GLP study reports and summary documents intended for or included in regulatory submissions. Recruited, managed and developed associates. As cross-functional project team representative, assumed a leadership role in the drug development process through the planning, budgeting, design, monitoring and interpretation of *in vitro* and *in vivo* preclinical studies to assess the safety of proprietary small molecule development candidates. Provided nonclinical drug safety expertise and strategy to teams in support of early/full development programs. Prepared associated scientific summary documents, timelines, budgets, and technical presentations.

**Preclinical Development Consultant**

**1998-1999**

Independent consultant providing preclinical development expertise in the areas of toxicology, pharmacology, and regulatory/technical report writing to the pharmaceutical industry.

**DepoTech Corporation  
Senior Scientist/Toxicologist, Preclinical Development  
San Diego, CA**

**1994-1998**

Responsible for providing expertise in the area of toxicology/preclinical development to multiple projects in development. Primary responsibilities included: design, execution, and interpretation of non-GLP (in-house) and GLP (contract) pre-clinical toxicology, efficacy, pharmacokinetic and pharmacodynamic protocols; delivery of preclinical study reports and other documentation for global regulatory submissions; representation of functional area (Preclinical Development) on internal project development teams; liaison function between Preclinical Development and other internal departments and/or academic collaborators for coordination of preclinical aspects of feasibility-stage/research projects. Administrative responsibilities included: management of Preclinical Studies Manager and Preclinical Research Associate; establishment and chair of corporate Institutional Animal Care and Use Committee (IACUC); establishment, negotiation and maintenance of contracts with commercial vivarium facilities; development of annual departmental budget.

**The Procter & Gamble Company  
Divisional Toxicologist  
Regulatory & Clinical Development  
Toxicology & Environmental Safety Department  
Respiratory Care and Analgesics Category**

**1992-1994**

Primarily responsible for the design, conduct, evaluation, and finalization of GLP preclinical safety studies to support Company product development efforts. Toxicology support provided for currently-marketed OTC Respiratory Care Brands and for proprietary product development technology. Other project responsibilities included safety assessment of new products during human testing and management of toxicological issues concerning currently marketed products. Non-project related responsibilities included function as divisional Proposition 65 toxicologist and implementation/management of divisional Proposition 65 product compliance database.

International responsibilities included safety clearances, informational requests, and scientific review to support worldwide product development and marketed Brands.

## ***APPOINTMENTS***

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**University of California San Diego Extension** **2005-present**  
**Instructor**

As instructor for the "Toxicology in Drug Discovery and Development" course offered through the Drug Discovery and Development and ADMET Certificate Programs, responsible for initial design of course content/format, syllabus development, course materials development, and delivery of classroom and distance learning (on-line) lectures. In this course, the basic principles of toxicology are presented as they relate to the assessment of drug safety from the initial selection of a drug for development through the registration of a drug for human use and post-marketing surveillance.

**Assay Depot - San Diego, CA** **2008-present**  
**Scientific Advisory Board Member**

**BioTox Sciences, Inc. - San Diego, CA** **2008-present**  
**Scientific Advisory Board Member**

**Neurocore, LLC - San Diego, CA** **2010-present**  
**Scientific Advisory Board Member**

**Ruga Corporation - Palo Alto, CA** **2010-present**  
**Scientific Advisory Board Member**

## ***EDUCATION/CERTIFICATIONS***

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### **Diplomate, American Board of Toxicology**

Initial certification 2000

Successful recertifications for 2006-2010 and 2011-2015

### **Ph.D. Biomedical Sciences - Specialization in Toxicology (1992)**

College of Pharmacy and Allied Health Professions

Northeastern University

Boston, MA

Thesis: Toluene-Induced Alterations in Pulmonary and Hepatic Cytochrome P450 and Associated Mixed-Function Oxidases in the Sprague-Dawley Rat.

### **B.S. Toxicology (1986)**

College of Pharmacy and Allied Health Professions

Northeastern University

Boston, MA

## ***FULL LENGTH PUBLICATIONS***

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Burns-Naas LA, Zorbas M, Jessen B, Evering W, Stevens G, Ivett JL, Ryan TE, Cook JC, Capen CC, Chen M, Furman GM, Theiss J, Webber S, Wu E, Shetty B, Gasser R, and McClain RM. Increase In Thyroid Follicular Cell Tumors In Nelfinavir-Treated Rats Observed in a 2-Year Carcinogenicity Study is Consistent With a Rat-Specific Mechanism of Thyroid Neoplasia. *Human and Experimental Toxicology* 2005 24(12):643-654.

Burns-Naas LA, Stump DG, Webber S, Holson JF, Masarjian L, Furman G, Zorbas M. Absence of Reproductive and Developmental Toxicity in Rats Following Oral Dosing with Nelfinavir. *Regul Toxicol Pharmacol*. 2003 Dec; 38(3):304-16.

Huh J, Chen JC, Furman GM, Malki C, King B, Kafie F, Wilson SE. Local Treatment of Prosthetic Vascular Graft Infection with Multivesicular Liposome-Encapsulated Amikacin. *J Surg Res*. 1998 Jan; 74(1):54-8.

Furman GM, Silverman DM, Schatz RA. Inhibition of Rat Lung Mixed-Function Oxidase Activity Following Repeated Low-Level Toluene Inhalation: Possible Role of Toluene Metabolites. *J Toxicol Environ Health A*. 1998 Aug 21; 54(8):633-45.

Furman, G.M. Toluene-Induced Alterations in Pulmonary and Hepatic Cytochrome P450 and Associated Mixed-Function Oxidases in the Sprague-Dawley Rat. Doctoral Dissertation Submitted to the Graduate School of Pharmacy and Allied Health Professions of Northeastern University in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Biomedical Sciences with Specialization in Toxicology. Academic Advisor: R.A. Schatz, Ph.D. August 1992, Boston, MA. 1992.

Furman GM, Silverman DM, Schatz RA. The Effect of Toluene on Rat Lung Benzo[a]pyrene Metabolism and Microsomal Membrane Lipids. *Toxicology*. 1991; 68(1):75-87.

Carl GF, Smith ML, Furman GM, Eto I, Schatz RA, Krumdieck CL. Phenytoin Treatment and Folate Supplementation Affect Folate Concentrations and Methylation Capacity in Rats. *J Nutr*. 1991 Aug; 121(8):1214-21.

## ***INVITED PRESENTATIONS***

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**FDA Pre-IND Meetings: Why, When and How.** *San Diego Preclinical Discussion Group*. San Diego, CA. 03 October 2011.

**Building Confidence in Cardiovascular Safety: What Sponsors Need to Know (and When).** *ChanTest Corporation*. Cleveland, OH. 15 July 2011.

**Nonclinical Evaluation of Novel Oncology Agents.** *Guest Seminar, Memorial Sloan-Kettering Cancer Center, Molecular Pharmacology & Chemistry Program*. New York, NY. 02 June 2011

**Building Confidence in Cardiac Safety During Lead Optimization.** *Cyprotex 7<sup>th</sup> North American Drug Discovery Workshop*. La Jolla, CA. 06 April 2011.

**Outsourcing From a Consultant's Point of View.** *IALSN Life Science Networking Group Symposium: The Power of Outsourcing in Early Through Preclinical Development*. La Jolla, CA. 09 September 2010.

**Risk:Benefit Analysis for Small Molecule Therapeutics: Preparing for First-in-Human Clinical Trials.** *14<sup>th</sup> Annual International Spinal Muscular Atrophy Research Group Meeting*. Santa Clara, CA. 26 June 2010

**SUCCESSFUL INDs: Regulatory Best Practices for First-Time Filers and Early Stage Companies** (Panelist). *Oklahoma Bioscience Association's ACCELRATE Workshop Series*, Oklahoma City, OK. 01 October 2009

**Choosing the Right Toxicology CRO for your Program.** *Non-Stop: IP to IND – Balancing Speed, Quality and Cost*. San Diego, CA. 03 April 2009.

**Genotoxicity Testing for Pharmaceuticals: Current and Emerging Practices.** *Vertex Pharmaceuticals, Inc.*, San Diego, CA. 17 March 2009.

**Nonclinical Safety Evaluation of Reformulated Drug Products and Products Intended for Administration by Alternate Routes.** *Pharmaceutical Safety Evaluation and Regulation: Methodological Advances Impacting on Drug Registration.* Melbourne, Australia. 01-03 September 2008.

**Nonclinical Safety Evaluation of Drug or Biologic Combinations.** *Pharmaceutical Safety Evaluation and Regulation: Methodological Advances Impacting on Drug Registration.* Melbourne, Australia. 01-03 September 2008.

**Optimizing Candidate Progression from Discovery to Clinical Evaluation – Convention vs. Innovation at the Discovery/Early Development Interface.** *Pharmaceutical Safety Evaluation and Regulation: Methodological Advances Impacting on Drug Registration.* Melbourne, Australia. 01-03 September 2008.

**Toxicology in Oncology Drug Development.** *University of California San Diego Moores Cancer Center*, San Diego, CA. 25 April 2008.

**Genotoxicity Testing for Pharmaceuticals – Current and Emerging Practices.** *PTEK-U Seminar Series*, San Diego, CA. 17 April 2008

**Optimizing Candidate Progression from Discovery to Clinical Evaluation - Convention vs. Innovation at the Discovery/Early Development Interface.** *Alcon Laboratories, Inc.*, Fort Worth, TX. 23 May 2007.

**Consulting: The Other Career Option.** *Sino-American Biotechnology and Pharmaceutical Professionals Association, Professional and Personal Development Skills Series: Developing Your Career*, San Diego, CA. 12 May 2007.

**The Exploratory IND – A New Tool in the Drug Development Toolbox** (session of the Continuing Education course “US FDA Critical Path Initiative: Building a New Toolkit to Transform Drug Development”). *American College of Toxicology 2006 Annual Meeting*, Indian Wells, CA. 05 November 2006.

**Optimizing Candidate Progression from Discovery to Clinical Evaluation - Convention vs. Innovation at the Discovery/Early Development Interface.** *Honeycomb Worldwide Monthly Web Meeting*, 21 October 2005.

**The Screening IND - Then and Now.** *47<sup>th</sup> Annual International Industrial Pharmaceutical Research and Development Conference*, Merrimac, WI. 6-10 June 2005

**Optimizing Candidate Progression from Discovery to Clinical Evaluation - Convention vs. Innovation at the Discovery/Early Development Interface.** *Cambridge Healthtech Institute Molecular Medicine Tri-conference/Integrative Approach to Preclinical Development: In Vivo Validation Conference*, San Francisco, CA. 20-22 April 2005

**Innovative Nonclinical Strategies - Optimizing Candidate Progression from Discovery to Clinical Evaluation.** *IBC Life Sciences/SCRIP Phase I Clinical Trials Conference*, Philadelphia, PA. 15-17 November 2004.

## ***ABSTRACTS AND PRESENTATIONS***

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R.G. Nath, B. Myhr, F.Q. Luo, C. Hall and G. Furman. Dependence of 14C-Benzo[1]pyrene Binding to Human Peripheral Blood Lymphocyte DNA on Heat Treatment. *Environmental Mutagen Society Meeting*, Anchorage, Alaska. April/May 2002

K. Albright, L. Garcia, K. Moorehead, G. Furman, B. Gualdoni, M. Flores, and W. Liaw. Characterization and evaluation of multivesicular lipid-based particle (MLP) encapsulated amikacin formulations for sustained release antibiotic treatment. *AAPS Annual Meeting and Exposition*, Boston, Massachusetts. November 1997.

J.C. Chen, J. Huh, G.M. Furman, and S.E. Wilson. Local application of multivesicular liposomal amikacin prevents development of vascular graft infection. *23<sup>rd</sup> World Congress International Society for Cardiovascular Surgery*, London, England. September 1997.

J. Huh, J.C. Chen, G.M. Furman, C. Malki, B. King, F. Kafie, and S.E. Wilson. Local treatment of prosthetic vascular graft infection with multivesicular liposome encapsulated amikacin. *Twenty First Annual Association of Veterans Administration Surgeons*, Louisville, KY. May 1997.

J. Huh, J.C. Chen, F. Kafie, G.M. Furman, J. C. Milliken, and S.E. Wilson. A multivesicular liposomal amikacin formulation in the treatment of prosthetic vascular graft infection. *Southwestern Surgical Congress 1997 Annual Meeting*, Rancho Mirage, CA. April 1997.

Furman, G.M., Silverman, D.M. and Schatz, R.A. (1993). Alterations in pulmonary cytochrome P450 isozymes following toluene exposure: *in vivo* and *in vitro* correlates of altered BaP metabolism in the rat. *The Toxicologist* 13(1):364.

Schnepper, P.M., Furman, G.M., and Schatz, R.A. (1993). Effects of low-level sub-acute toluene inhalation on rat synaptosomal membrane fluidity. *The Toxicologist* 13(1):363.

Furman, G.M., Silverman, D.M. and Schatz, R.A. Modulation of microsomal cytochrome P450-mediated enzyme activities in rat lung and liver by subacute low-level inhalation of toluene: *in vivo* and *in vitro* correlates of functional alterations. *New England Pharmacologists 21st Annual Meeting*. Portland, ME. February 1992.

Furman, G.M., Silverman, D.M. and Schatz, R.A. (1992). Differential effects on cytochrome P450 isozymes in rat lung and liver after toluene inhalation. *The Toxicologist* 12: 403.

Schatz, R.A., Gawron, J., Edelstein, J., Caleb, B., Furman, G.M. and Silverman, D. (1991). The effect of xylenes on rat renal microsomal membrane structure and mixed function oxidase activity. *The Toxicologist* 11: 318.

Furman, G.M., AuCoin, T. and Schatz, R.A. (1991). o-Xylene alters rat pulmonary glutathione utilization and synthesis. *The Toxicologist* 11: 317.

Furman, G.M., Silverman, D.M. and Schatz, R.A. Differential effects on cytochrome P450 isozymes in rat lung and liver after toluene inhalation. *Northeast Regional Chapter, Society of Toxicology, Annual Meeting*. Sturbridge, MA. October 1991.

Furman, G.M., Silverman, D. and Schatz, R.A. Effect of toluene on isozyme-specific cytochrome P450 activities in rat lung: Role in altered BaP metabolism. *New England Pharmacologists 20th Annual Meeting*. Meriden, CT. February 1991.

Furman, G.M., Silverman, D.M. and Schatz, R.A. (1990). Toluene alters membrane function but not composition in rat pulmonary microsomes. *The Toxicologist* 10: 122.

Zewdie, T., Furman, G.M., Roberts, A.E., Silverman, D.M. and Schatz, R.A. (1990). Structure activity relationship of toluene, p-xylene, p-nitrotoluene and p-chlorotoluene on rat lung and liver microsomal function and composition. *The Toxicologist* 10: 120.

Furman, G.M., Silverman, D. and Schatz, R.A. Effect of toluene on isozyme-specific cytochrome P450 activities in rat lung: Role in altered BaP metabolism. *Northeast Regional Chapter, Society of Toxicology, semi-annual meeting*. Worcester, MA. November 1990.

Furman, G.M., Gawron, J., Edelstein, J., Caleb, B., Silverman, D.M. and Schatz, R.A. The effect of xylene isomers on rat renal microsomal membrane structure and mixed function oxidase activity. *Northeast Regional Chapter, Society of Toxicology, semi-annual meeting*. Weston, MA. June 1990.

Furman, G.M., Silverman, D.M. and Schatz, R.A. Toluene alters membrane function but not composition in rat pulmonary microsomes. *New England Pharmacologists 19th Annual Meeting*. Newport, RI. February 1990.

Zewdie, T., Furman, G.M., Roberts, A.E., Silverman, D.M. and Schatz, R.A. Structure activity relationship of toluene, p-xylene, p-nitrotoluene and p-chlorotoluene on rat lung and liver microsomal function and composition. *New England Pharmacologists 19th Annual Meeting*. Newport, RI. February 1990.

Furman, G.M., Stickney, J.A. and Schatz, R.A. (1989). Organic solvent toxicity in rat pulmonary microsomes: Role of metabolic aldehyde formation *in vivo*. *The Toxicologist* 9: 251.

Zewdie, T., Furman, G.M., Roberts, A.E., Silverman, D.M. and Schatz, R.A. Structure activity relationship of toluene, p-xylene, p-nitrotoluene and p-chlorotoluene on rat lung and liver microsomal function and composition. *Northeast Regional Chapter, Society of Toxicology, Semi-Annual Meeting*, Sturbridge, MA. October 1989.

Furman, G.M., Silverman, D.M. and Schatz, R.A. Toluene alters membrane function but not composition in rat pulmonary microsomes. *Northeast Regional Chapter, Society of Toxicology, Semi-Annual Meeting*, Boston, MA. June 1989.

Furman, G.M., Stickney, J.A. and Schatz, R.A. Organic solvent toxicity in rat pulmonary microsomes: Role of metabolic aldehyde formation *in vivo*. *New England Pharmacologists 18th Annual Meeting*. Boston, MA. February 1989.

Furman, G.M., Applegate, C. and Schatz, R.A. (1988). Altered membrane composition and fluidity in seizure-resistant, seizure-susceptible and kindled mice. *Society for Neuroscience Abstracts* 14(2): 1018.

AuCoin, T.G., Furman, G.M., LeBel, C.P., Roberts, A.E. and Schatz, R.A. (1988). Effects of xylene isomers on rat brain microsomal membranes and glutathione levels. *The Toxicologist* 8: 211.

Furman, G.M., Stickney, J.A. and Schatz, R.A. Organic solvent toxicity in rat pulmonary microsomes. Role of metabolic aldehyde formation *in vivo*. *New England Membrane Enzyme Group, Sixth Annual Meeting*. Falmouth, MA. November 1988.

Furman, G.M., Stickney, J.A. and Schatz, R.A. Organic solvent toxicity in rat pulmonary microsomes. Role of metabolic aldehyde formation *in vivo*. *Northeast Regional Chapter, Society of Toxicology, Semi-Annual Meeting*. Sturbridge, MA. October 1988.

Furman, G.M., AuCoin, T., LeBel, C., Roberts, A.E. and Schatz, R.A. Alterations in rat brain microsomal membranes and glutathione levels in response to xylene isomers. *New England Pharmacologists 17th Annual Meeting*. Providence, RI. January 1988.

LeBel, C.P., Furman, G.M., and Schatz, R.A. Effects of benzodiazepines on mouse brain phospholipid-N-methyltransferase. *Northeast Regional Chapter, Society of Toxicology, Semi-Annual Meeting*. Groton, CT. October 1986.

LeBel, C.P., Furman, G.M., Gill, M.W. and Schatz, R.A. Convulsant and anticonvulsant effects on cerebral methylation. *Mechanisms of Epileptogenesis Meeting*, University of Pennsylvania, Philadelphia, PA. September 1986.

LeBel, C.P., Furman, G.M., and Schatz, R.A. Effects of benzodiazepines on mouse brain phospholipid-N-methyltransferase. *Northeast Regional Chapter, Society of Toxicology, Semi-Annual Meeting*, Boston, MA. June 1986.

### ***PROFESSIONAL AFFILIATIONS***

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American Board of Toxicology – Diplomate

Society of Toxicology - Associate Member

American College of Toxicology - Full Member  
Nominating Committee 2008  
Councilor 2009-2011

Southern California Chapter of the Society of Toxicology  
Councilor/Past President 2001-2002  
President 2000-2001  
Vice-President Elect 1999-2000  
Councilor 1997-1998

Drug Information Association - Regular Member

San Diego Biotechnology Discussion Group – Chairperson emeritus

### ***CONTINUING EDUCATION COURSES, PROFESSIONAL MEETINGS and WORKSHOPS***

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2011 XenoTech Webinar: Enzyme Induction: Gauging the Victim/Perpetrator potential of a compound from regulatory guidelines to data interpretation (on-line)

2011 American College of Toxicology Webinar: Evaluation of Carcinogenicity in Rodents (on-line)

2011 Ricerca Webinar: Current Trends and Advances in Developmental and Reproductive Toxicology Testing (on-line)

2011 ChanTest Webinar: Stem Cell-Derived Human Cardiomyocytes: Utility for Risk Evaluation and Determining Complex Mechanisms of Drug Action (on-line)

2010 RNAi - An Opportunity For a New Class of Drugs?  
IALSN Life Science Networking Group Symposium  
San Diego, CA

- 2010 American College of Toxicology 31<sup>st</sup> Annual Meeting  
Baltimore, MD
- 2010 American College of Toxicology 31<sup>st</sup> Annual Meeting  
Continuing Education: Drug Development 101  
Baltimore, MD
- 2010 American College of Toxicology 31<sup>st</sup> Annual Meeting  
Continuing Education: Adrenal Toxicity  
Baltimore, MD
- 2010 Charles River Preclinical Services Webinar: Immunohistochemistry-Based  
Biodistribution Studies (on-line)
- 2010 Southern California Chapter of the Society of Toxicology  
Advancing the Science of Carcinogenic Risk Assessment  
Los Angeles, CA
- 2010 DSI Webinar: Telemetry in Regulatory Toxicology Settings (on-line)
- 2010 American College of Toxicology Webinar: Photosafety Assessment in Drug  
Development: Current Regulatory Guidelines and Strategies for Testing (on-line)
- 2010 Charles River Preclinical Services Presents Webinar: The Incorporation of Safety  
Pharmacology and Reproductive End Points into Chronic Toxicology Studies (on-line)
- 2010 Aperio Webinar: Quantification of Oncology Biomarkers Using Image Analysis & Pattern  
Recognition Approaches (on-line)
- 2010 Charles River Discovery and Imaging Presents Webinar: Effective Use of Translational  
Imaging for Early Indication of Treatment Response (on-line)
- 2010 American College of Toxicology Webinar: Cardiovascular Assessment: The Preceding,  
Contemporary and Prospective Viewpoint (on-line)
- 2010 PTEK-U Seminar Series: Regulatory Intelligence: What is it and How can it Accelerate  
your Company's Drug Development?  
San Diego, CA
- 2010 Pharsight Corporation Training Workshop  
An Introduction to the Design, Role and Utility of Pharmacokinetics and  
Pharmacodynamics in Drug Discovery and Development  
San Francisco, CA
- 2009 American College of Toxicology 30<sup>th</sup> Annual Meeting  
Palm Springs, CA
- 2009 American College of Toxicology 30<sup>th</sup> Annual Meeting  
Continuing Education: Drug Abuse and Dependence Assessment: Application of  
Neurobehavioral Sciences to Address Drug Safety Evaluation and Drug Control Policy  
Palm Springs, CA
- 2009 American College of Toxicology 30<sup>th</sup> Annual Meeting  
Continuing Education: Consulting in Toxicology  
Palm Springs, CA

- 2009 Charles River Preclinical Presents Webinar: Juvenile Toxicity Testing for Pharmaceuticals and Biopharmaceuticals (on-line)
- 2009 Charles River Preclinical Presents Webinar: Cardiac Safety – When Drugs Have Heart Attacks (on-line)
- 2009 Charles River Preclinical Presents Webinar: Understanding Incurred Sample Reanalysis (on-line)
- 2009 Charles River Preclinical Presents Webinar: Immunotoxicity Evaluation for Biologic Products (on-line)
- 2009 Non-Stop: IP to IND – Balancing Speed, Quality and Cost  
San Diego, CA
- 2009 Charles River Preclinical Presents Webinar: The Cardiovascular System and Drug Development (on-line)
- 2009 PTEK-U Seminar Series: Considerations of Oral Bioavailability in Drug Development  
San Diego, CA
- 2008 American College of Toxicology 29<sup>th</sup> Annual Meeting  
Tucson, AZ
- 2008 American College of Toxicology 29<sup>th</sup> Annual Meeting  
Continuing Education: Bone Marrow and Hematology Evaluation and Interpretation in Immunotoxicology Studies  
Tucson, AZ
- 2008 American College of Toxicology 29<sup>th</sup> Annual Meeting  
Continuing Education: Anti-Cancer Drug Development Overview: Advancing Our Understanding of Targeted Approaches to Anti-Cancer Therapies  
Tucson, AZ
- 2008 BioReliance Toxicology Technical Seminar: Safety Testing of Drugs for Genotoxicity and Carcinogenicity  
Tucson, AZ
- 2008 Southern California Chapter of the Society of Toxicology  
Cardiotoxicity: A Mounting Concern for Novel Therapeutics  
San Diego, CA
- 2008 Society of Toxicology 47<sup>th</sup> Annual Meeting  
Seattle, WA
- 2008 Society of Toxicology 47<sup>th</sup> Annual Meeting Continuing Education: The Use of Transgenic Animal Technology in Toxicological Research  
Seattle, WA
- 2008 Society of Toxicology 47<sup>th</sup> Annual Meeting  
Continuing Education: Introduction to Pathology for Toxicologists and Study Directors  
Seattle, WA
- 2007 Society of Toxicology 46<sup>th</sup> Annual Meeting  
Charlotte, NC

- 2007 Society of Toxicology 46<sup>th</sup> Annual Meeting  
Continuing Education: Concepts, Methods and Applications of Discovery and Investigative Toxicology  
Charlotte, NC
- 2006 American College of Toxicology 27<sup>th</sup> Annual Meeting  
Indian Wells, CA
- 2006 American College of Toxicology 27<sup>th</sup> Annual Meeting  
Continuing Education: US FDA Critical Path Initiative: Building a New Toolkit to Transform Drug Development  
Indian Wells, CA
- 2006 Southern California Chapter of the Society of Toxicology  
Innovative Technologies in Nonclinical Toxicology: Markers and Models  
Irvine, CA
- 2006 Drug Information Association: eSUBs and eCTD Basics  
Webinar (on-line)
- 2006 Society of Toxicology 45<sup>th</sup> Annual Meeting  
San Diego, CA
- 2006 Society of Toxicology 45<sup>th</sup> Annual Meeting  
Continuing Education: Targeted Therapeutic Approach to Anti-Cancer Drug Development  
San Diego, CA
- 2005 Society of Toxicology 44<sup>th</sup> Annual Meeting  
New Orleans, LA
- 2005 Society of Toxicology 44<sup>th</sup> Annual Meeting  
Continuing Education: Phototoxicity: Current Concepts, Experimental Designs, and Regulatory Expectations  
New Orleans, LA
- 2005 Society of Toxicology 44<sup>th</sup> Annual Meeting  
Continuing Education: International Harmonization of Technical Requirements for Conducting Non-Clinical Safety Studies of Human Pharmaceuticals: Guidelines, Case Studies, and Challenges.  
New Orleans, LA
- 2004 Southern California Chapter of the Society of Toxicology  
Reproductive & Developmental Toxicology: Pharmaceutical, Environmental, and Legal Considerations  
San Diego, CA
- 2004 Society of Toxicology 43<sup>rd</sup> Annual Meeting  
Baltimore, MD
- 2003 Society of Toxicology 42<sup>nd</sup> Annual Meeting  
Salt Lake City, UT

- 2003 Southern California Chapter of the Society of Toxicology  
Current Concepts in Immunotoxicology  
Irvine, CA
- 2003 Institute for International Research  
4<sup>th</sup> Annual Faster and More Efficient Phase I Clinical Trials  
Washington, DC
- 2002 Society of Toxicology 41<sup>st</sup> Annual Meeting  
Nashville, TN
- 2002 Southern California Chapter of the Society of Toxicology  
Drug Development of Biological Products  
Thousand Oaks, CA
- 2002 Southern California Chapter of the Society of Toxicology  
Joint Southern California/Mountain West SOT Regional Chapter Meeting  
Children's Health Issues  
Treasure Island, Las Vegas, NV
- 2002 Selected Topics in Pharmacokinetics and Toxicokinetics  
Del Mar, CA
- 2002 Pfizer Research University  
Essentials of Management  
La Jolla, CA
- 2001 Pfizer Research University  
R2D2 Process Communication Program Workshop  
La Jolla, CA
- 2001 Drug Information Association  
ECGs in Clinical R&D: Proving the Compound is Safe  
Arlington, VA
- 2001 Society of Toxicology 40<sup>th</sup> Annual Meeting  
San Francisco, CA
- 2001 Drug Information Association  
ICH 2001: Understanding the Common Technical Document  
Bethesda, MD
- 2001 Southern California Chapter of the Society of Toxicology  
Continuing Education: Current Concepts in Safety Pharmacology  
Irvine, CA
- 2001 Southern California Chapter of the Society of Toxicology  
Application of Panomics to Toxicology  
La Jolla, CA
- 2001 Successfully Writing, Compiling and Submitting an IND Application  
San Diego, CA
- 2000 PhRMA Preclinical Drug Safety Steering Committee Annual Meeting  
Topic: Safety Pharmacology  
Washington, DC

- 2000 Society of Toxicology 39<sup>th</sup> Annual Meeting  
Philadelphia, PA
- 2000 Society of Toxicology 39<sup>th</sup> Annual Meeting  
Continuing Education: Metabonomics - A New Approach to Drug Toxicity  
Screening Using NMR Spectroscopy, Pattern Recognition and Expert Systems  
Philadelphia, PA
- 2000 Society of Toxicology 39<sup>th</sup> Annual Meeting  
Continuing Education: Safety Pharmacology and Risk Assessment  
Philadelphia, PA
- 2000 American College of Toxicology 21<sup>st</sup> Annual Meeting  
San Diego, CA
- 2000 American College of Toxicology 21<sup>st</sup> Annual Meeting  
Continuing Education: Safety Pharmacology  
San Diego, CA
- 2000 Southern California Chapter of the Society of Toxicology  
Combinatorial Chemistry and Technologies in Drug Discovery  
Irvine, CA
- 2000 Southern California Chapter of the Society of Toxicology  
New Perspectives in Environmental Toxicology  
San Diego, CA
- 1999 Session Chair  
Sierra Biomedical, Inc. 7<sup>th</sup> Annual Biotechnology Symposium  
Coronado, CA
- 1999 BioReliance 13<sup>th</sup> Annual Genetic and Molecular Toxicology Workshop  
Rockville, MD
- 1999 Society of Toxicology 38<sup>th</sup> Annual Meeting  
New Orleans, LA
- 1999 Society of Toxicology 38<sup>th</sup> Annual Meeting  
Continuing Education: Telemetry, Toxicology, and Safety Assessment  
New Orleans, LA
- 1999 Society of Toxicology 38<sup>th</sup> Annual Meeting  
Continuing Education: Application of Transgenic Models in Toxicology  
New Orleans, LA
- 1999 Southern California Chapter of the Society of Toxicology  
Hot Issues in Risk Assessment  
Irvine, CA
- 1999 Southern California Chapter of the Society of Toxicology  
10<sup>th</sup> Annual Fall Meeting  
San Diego, CA
- 1998 Southern California Chapter of the Society of Toxicology  
*In Vitro* Approaches and Methods for Biological Testing  
Carlsbad, CA

- 1998 Society of Toxicology 37<sup>th</sup> Annual Meeting  
Seattle, WA
- 1997 Southern California Chapter of the Society of Toxicology  
Southern California Graduate Student Research Symposium  
Newport Beach, CA
- 1997 Southern California Chapter of the Society of Toxicology  
Behavioral Pharmacology and Toxicology  
Newport Beach, CA
- 1997 Society of Toxicology 36<sup>th</sup> Annual Meeting  
Cincinnati, OH
- 1997 Woodall & Associates  
Project Leadership Training Program  
San Diego, CA
- 1997 Pharmaceutical Education & Research Institute  
Basic Training Course on Drug Development  
San Diego, CA
- 1996 Southern California Chapter of the Society of Toxicology  
Amgen: A Look into Product Manufacturing, Environmental Health and Safety, and  
Toxicology  
Thousand Oaks, CA
- 1996 Zodiac Business Training  
DepoTech Corporation  
San Diego, CA
- 1996 Management Forum Ltd.  
The Toxicological Expert Report  
London, England
- 1996 Society of Toxicology 35<sup>th</sup> Annual Meeting  
Anaheim, CA
- 1996 Society of Toxicology 35<sup>th</sup> Annual Meeting  
Continuing Education: Advanced Topics in Toxicokinetics  
Anaheim, CA
- 1995 Southern California Chapter of the Society of Toxicology  
Magnetic Resonance Imaging: Applications in Toxicology  
Newport Beach, CA
- 1995 Southern California Chapter of the Society of Toxicology  
Development and Application of Biomarkers of Human Exposure to Carcinogens and  
Mutagens  
San Diego, CA
- 1995 Southern California Chapter of the Society of Toxicology  
Hormone-Mediated Toxicity  
Irvine, CA

- 1995 Corning Hazleton  
West Coast Biopharmaceutical Workshop  
San Diego, CA
- 1995 Zenger-Miller, Inc.  
FrontLine Leadership Training System  
San Diego, CA
- 1994 Southern California Chapter of the Society of Toxicology  
Toxicology of New Biotechnology-Based Pharmaceuticals  
Irvine, CA
- 1994 Society of Toxicology 33<sup>rd</sup> Annual Meeting  
Dallas, TX
- 1994 ESA, Inc.  
The ESA Microdialysis School  
Boston, MA
- 1993 Quality Assurance/Risk Assessment (QARA) Services  
Good Laboratory Practices (GLP) Workshop  
Cincinnati, OH
- 1993 The Procter & Gamble Company  
Interpersonal Managing Skills Workshop  
Cincinnati, OH
- 1993 The Procter & Gamble Company  
Corporate Skin Sensitization Training Workshop  
Cincinnati, OH
- 1993 American Health Foundation/Synthelabo Recherche (L.E.R.S.)  
International Short Course on Non-Clinical Drug Safety  
Tarrytown, NY
- 1993 The Procter & Gamble Company  
College I for New Management Hires  
Cincinnati, OH
- 1993 The Procter & Gamble Company  
Corporate NDA Training Seminar  
Cincinnati, OH
- 1993 Society of Toxicology 32<sup>nd</sup> Annual Meeting  
New Orleans, LA
- 1993 Society of Toxicology 32<sup>nd</sup> Annual Meeting  
Continuing Education: Immunology of Chemical Hypersensitivity  
New Orleans, LA
- 1992 The Procter & Gamble Company  
Workshop on Implementing Total Quality  
Cincinnati, OH

- 1992 The Procter & Gamble Company  
Corporate Animal Welfare Training Workshop  
Cincinnati, OH
- 1992 The Procter & Gamble Company  
Human & Environmental Safety Division Corporate Risk Assessment Workshop  
Cincinnati, OH
- 1992 The Procter & Gamble Company  
Human & Environmental Safety Division Corporate Genetox Workshop  
Cincinnati, OH
- 1992 Hill Top Research/The Procter & Gamble Company  
Joint Symposium on Patch Testing  
Cincinnati, OH
- 1992 Society of Toxicology 31<sup>st</sup> Annual Meeting  
Continuing Education: Molecular Control of Cell Proliferation  
Seattle, WA