

## CURRICULUM VITAE

**NAME:** Errol Zeiger

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**DATE & PLACE OF BIRTH:** December 11, 1939, New York, New York

**CITIZENSHIP:** United States

### EDUCATION:

- B.S. 1960 City College of New York.  
Major: Biology; Minors: Chemistry, Philosophy
- M.S. 1969 George Washington University, Department of Microbiology.  
Thesis title: The Absence of Teichoic Acids in Mycobacteria
- Ph.D. 1973 George Washington University, Department of Microbiology.  
Dissertation title: Effect of Metabolism of *N*-Nitrosamines on their Mutagenicity for  
*Salmonella typhimurium* in the Host-Mediated Assay
- J.D. 1991 North Carolina Central University, School of Law  
Admitted to the N.C. Bar, Sept., 1991 (Transferred to inactive status, Oct., 2005)

**CHRONOLOGY OF EMPLOYMENT:**

- 3/61-9/61: Biochemistry Research Assistant, Isaac Albert Research Institute, Brooklyn, NY
- 9/61-2/62: Laboratory Assistant (part-time), Department of Biology, City College of New York
- 1/63-2/63: Biochemistry Research Assistant, Isaac Albert Research Institute, Brooklyn, NY
- 5/63-2/65: Laboratory Sciences Assistant (active duty, U.S. Army), Walter Reed Army Institute of Research, Washington, DC
- 4/65-9/66: Biologist, Laboratory of Parasitic Diseases, NIAID, NIH, Bethesda, MD
- 6/65-6/67: Clinical Laboratory Technician, U.S. Army Reserve Hospital, Rockville, MD
- 9/66-7/69: Predoctoral Fellow, Department of Microbiology, George Washington University School of Medicine, Washington, DC
- 7/69-6/76: Research Microbiologist, Genetic Toxicity Branch, Division of Toxicology, FDA, Washington, DC
- 6/76-5/78: Research Microbiologist and Head, Microbial Genetics Section, Laboratory of Environmental Mutagenesis, NIEHS, Research Triangle Park, NC
- 5/78-4/80: Research Microbiologist and Acting Head, Environmental Mutagenesis Test Development Program, LEM (later, Laboratory of Molecular Genetics), NIEHS, Research Triangle Park, NC
- 10/78-pres.: Guest Lecturer, Department of Toxicology, North Carolina State University, Raleigh, NC
- 4/80-10/92: Supervisory Research Microbiologist and Head, Environmental Mutagenesis Group, Cellular and Genetic Toxicology Branch (later, Experimental Mutagenesis and Carcinogenesis Branch), NIEHS, Research Triangle Park, NC
- 11/92-3/99: Supervisory Research Microbiologist and Head, Chemical Nomination Office, Environmental Toxicology Program, NIEHS, Research Triangle Park, NC
- 3/99-6/00: Consultant, Environmental Health and Safety Division, Organization for Economic Co-operation and Development (OECD), Paris, France
- 7/00-12/00: Research Microbiologist, Alternative Models Group, Toxicology Operations Branch, Environmental Toxicology Program, NIEHS, Research Triangle Park, NC
  
- 1/01- pres.: Errol Zeiger Consulting, Chapel Hill, NC  
Selected consultancies:
- 1/01- pres.: Various private clients, including chemical, pharmaceutical, and personal care product producers, contract testing laboratories, other consultant organizations, government agencies, and law firms.
- 1/01- pres.: Guest Worker, Environmental Toxicology Program, NIEHS, Research Triangle Park, NC
- 1/01- 9/07: Consultant, NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) support, Integrated Laboratory Systems, Research Triangle Park, NC
- 1/01-1/07: Air Force Office for Scientific Research, Arlington, VA
- 11/01-7/02: Environmental Health and Safety Division, Organization for Economic Co-operation and  
6/07-3/08: Development (OECD), Paris, France
- 3/03-8/05: Senior Toxicologist and Project Manager, Development of Toxicological Health/Risk Assessment (Integrated Risk Information System; IRIS), Alpha-Gamma Technologies, Inc., Raleigh, NC
- 4/07- 10/10: Air Force Research Laboratory, Wright-Patterson Air Force Base, Ohio
- 10/12- pres.: Toxicology Department, Agencia Nacional de Vigilancia Sanitaria (ANVISA). Brasilia, Brazil

**PROFESSIONAL ACTIVITIES:**

- 1974 Member, DHEW Subcommittee on Environmental Mutagenesis, Committee on Structure-Activity Relationships
- 1974-1977 Member, DHEW Subcommittee on Environmental Mutagenesis, Working Group on Mutagenicity Testing
- 1975- pres. Editorial Board, *Mutation Research*
- 1975-1979 Member, National Cancer Institute, NIH, Division of Cancer Cause and Prevention's Mutagenesis Advisory Group
- 1975-1978 Councilor, Environmental Mutagen Society (EMS)
- 1976-1977 Chair, EMS Methods Committee
- 1976-1981 Editorial Board, *Journal of Environmental Sciences and Health*, Part C. Environmental Health Sciences
- 1977-1978 Member, EMS Executive Board
- 1978-pres. Adjunct lecturer, NC State University Dept. of Toxicology
- 1978 Member, U.S. EPA Scientific Advisory Panel for Diesel Emission Health Effects Research
- 1978-1981 Member, U.S. EPA Gene-Tox Workgroup on Repair-Deficient Bacteria
- 1979-1981 Member, National Academy of Sciences/National Research Council, Committee on Amines
- 1980-1981 Chair, EMS Committee on Certification
- 1981-1993 Editorial Board, *Environmental Mutagenesis* (later *Environmental and Molecular Mutagenesis*)
- 1981-1997 Editorial Advisory Board, *Environmental Health Perspectives*
- 1983-1985 Member, National Toxicology Program (NTP) Toxicology Design Committee
- 1983-1986 Member, A.S.T.M. Task Force on the Ames Assay
- 1983-1986 Member, Genotoxicity and Environmental Mutagen Society (GEMS) Board of Directors
- 1983-2005 Member, U.S. EPA. Phase III Salmonella Gene-Tox Panel
- 1984-1987 Chair, EMS Finance Committee
- 1985-1986 Member, International Agency for Research on Cancer (IARC) Working Group on the Evaluation of Carcinogenic Risk of Chemicals to Humans, Lyon France
- 1986 Member, IARC Working Group to Update Supplement 4 to the IARC Monographs, Lyon France
- 1987 Chair, EMS Journal Contract Committee
- 1989 Invited participant, National Research Council/NAS workshop "Research to Improve Predictions of Long-Term Chemical Toxicity." (work group rapporteur)
- 1990 Member, DHHS/Public Health Service Interagency Sodium Fluoride Risk Workgroup
- 1991-1992 Chair, Environmental Mutagen Society (EMS) Publisher Search Committee
- 1991-1994 Councilor, EMS
- 1991-2002 Chair, EMS Bylaws Committee
- 1991-1995 Member, EPA-Toxic Substances Control Act (TSCA) Interagency Testing Committee
- 1992 Member, NIEHS Division of Toxicology Research and Testing, Study Design Committee
- 1993 Member, OECD working group on "International Workshop on Standardization of Genotoxicity Test Procedures"
- 1993-1994 Vice-Chair, EPA-Toxic Substances Control Act (TSCA) Interagency Testing Committee
- 1994-1995 Chair, EPA-TSCA Interagency Testing Committee
- 1994-1996 Member, NIEHS *ad hoc* Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM). Chair, Method Validation Workgroup
- 1994-1998 Editor-in-Chief, *Environmental and Molecular Mutagenesis*
- 1994-2000 Member, Management Committee, Environmental Toxicology Program, NIEHS
- 1995 Chair, Workshop on Testing and Screening Technologies for the Review of Chemicals in Commerce. Office of Technology Assessment, Washington, DC.
- 1995-1996 Member, National Science and Technology Council/OSTP Interagency Oxygenated Fuels Assessment Committee
- 1996 Invited participant, OECD Workshop on "Harmonization and Acceptance Criteria for Alternative Toxicological Test Methods," Solna, Sweden
- 1996-2000 Member, NIEHS Interagency Coordinating Committee on the Validation of Alternative Methods
- 1998-1999 Co-Chair, Developmental Toxicology Working Group, Interagency Coordinating Committee on the Validation of Alternative Methods

- 1998 Member, IARC Workshop to Establish Priorities of Agents to be Evaluated in Future IARC Monographs on the Evaluation of Carcinogenic Effects to Humans, Lyon France
- 1998-1999 Chair, Subcommittee on Legal Education for Scientists. Section of Science and Technology, Committee on the Regulation of Research, of the American Bar Association
- 1999- pres. Editorial Board, *Environmental and Molecular Mutagenesis*
- 1999 Member, OECD Validation Management Committee for the Screening and Testing of Endocrine Disrupting Substances - Mammalian Effects
- 1999.2000 Member, International Life Sciences Institute (ILSI) Risk Science Institute Steering Committee for Developmental Neurotoxicity
- 2000 Member, IARC Working Group to Evaluate Some Thyrotropic Agents, Lyon France
- 2000-2003 Member, ILSI Health and Environmental Sciences Institute (HESI) Structure-Activity Relationship Database Subcommittee
- 2002-2003 Program Committee, ABA-sponsored, 2003 Genetics Conference “Working at the Frontiers of Law and Science: Applications of the Human Applications of the Human Genome.”
- 2004 Reviewer, NIEHS Center Grants
- 2004 Invited participant, National Cancer Institute Workshop to Evaluate Genotoxicity Assays for Possible Inclusion in the Chemical Carcinogenesis Research Information System (CCRIS) Data Bank
- 2004-2008 Board of Directors, Genetics and Environmental Mutagen Society (GEMS)
- 2005 Invited participant, 4th International Workshop on Genotoxicity Testing. San Francisco, Calif.
- 2005-2006 Councilor, Ethical, Legal, and Social Issues Specialty Section of the Society of Toxicology
- 2005-2014 Member ILSI-HESI Subcommittee on Biological Significance of DNA Adducts
- 2006 Member, NIEHS Special Emphasis Panel/Scientific Review Group
- 2006 Expert Consultant. OECD Expert Meeting for the Revision of DRP No. 31 on Cell Transformation Assays, Washington, DC
- 2007 Member, NIEHS Study Section; Disease Investigation Through Specialized Clinically Oriented Ventures in Environmental Research (DISCOVER)
- 2008 Chair, EMS Journal Contract Committee
- 2008- 2014 Member, ILSI-HESI Committee on the Relevance and Follow-up of Positive Results in In Vitro Genetic Toxicity (IVGT) Testing
- 2008 Expert Panelist; WHO Technical Consultation on the Safety of Quinacrine
- 2012- pres. Member, ILSI-HESI Genetic Toxicology Technical Committee (GTTC)
- 2012- pres. Co-chair, Framework for Adoption of New Test Methods Subcommittee, of the ILSI-HESI GTTC
- 2013 Chair, Environmental Mutagenesis and Genomics Society (EMGS) Journal Contract Committee
- 2013 Co-chair, EU Workshop “Can in vitro mammalian cell genotoxicity test results be used to complement positive results in the Ames test and help predict carcinogenic or in vivo genotoxic activity?”
- 2015-pres. Co-chair, EMGS Publication Policy Committee
- 2015 Chair, EMGS Journal Editor Search Committee
- 2015 Co-chair, EMGS Association Management Company Search Committee

**AWARDS AND HONORS:**

1971 FDA Award of Merit (to Genetic Toxicology Branch)  
1982 Superior Performance Award, U. S. Department of Health & Human Services  
1982 Co-Recipient, The American Statistical Association, George W. Snedecor Memorial Award for best publication in Biometry for 1981  
1986 Co-Recipient, The American Statistical Association W.J. Youden Award in Interlaboratory Testing  
1987 Recognition Award, The Environmental Mutagen Society  
1987 Recognition Award, U.S. Department of Health and Human Services  
1989 Merit Award, National Institutes of Health  
1992 Special Recognition Award, U.S. Public Health Service  
1999 Service Award, The Environmental Mutagen Society  
2000 Lifetime Achievement Award, Genetics and Environmental Mutagen Society  
2010 Elected as a Fellow of the Academy of Toxicological Sciences (A.T.S.)

**ORGANIZATION MEMBERSHIPS:**

Environmental Mutagen Society  
Society of Toxicology  
North Carolina Society of Toxicology  
American College of Toxicology  
Genetics and Environmental Mutagen Society (Charter member)  
Roundtable of Toxicology Consultants  
Academy of Toxicological Sciences

**PUBLICATIONS:**

1. Shadomy, S., Ginsberg, M.K., LaConte, M., Zeiger, E. (1965) Evaluation of a patient isolator system. I. Evaluations of subsystems and procedures for sterilization and concurrent sanitization. Arch. Environ. Health 11: 183-190.
2. Shadomy, S., Ginsberg, M.K., Zeiger, E. (1965) Evaluation of a patient isolator system. II. Distribution profiles of patient microflora during prolonged isolator confinement. Arch. Environ. Health 11: 191-200.
3. Shadomy, S., Ginsberg, M.K., Zeiger, E. (1965) Evaluation of a patient isolator system. III. Microbial contamination of the isolator interior. Arch. Environ. Health 11: 652-661.
4. Shadomy, S., Zeiger, E. (1966) Demonstration of a hemorrhagic vascular factor in sera from stressed animals. Amer. J. Physiol. 210: 838-846.
5. Wassom, J.W., Zeiger, E., Malling, H.V. (1970) A bibliography on the mutagenicity of nitroso compounds and related chemicals. EMIC Pamphlet No. 5.
6. Zeiger, E., Legator, M.S. (1971) Mutagenicity of N-nitrosomorpholine in the host mediated assay. Mutat. Res. 12: 469-471.
7. Zeiger, E., Brusick, D.B. (1971) The host mediated assay--A protocol for *Salmonella* and *Saccharomyces*. Environmental Mutagen Society Newsletter No. 5: 32-34.
8. Brusick, D.B., Zeiger, E. (1972) A comparison of chemically induced reversion patterns of *Salmonella typhimurium* and *Saccharomyces cerevisiae* mutants using in vitro plate tests. Mutat. Res. 14: 271-275.
9. Zeiger, E., Legator, M.S., Lijinsky, W. (1972) The mutagenicity of N-nitrosopiperazines for *Salmonella typhimurium* in the host mediated assay. Cancer Res. 32: 1598-1599.
10. Zeiger, E. (1973) Some factors affecting the host mediated assay response. Environ. Health Perspect. 6: 101-109.
11. Zeiger, E. (1975) Dietary modifications affecting the mutagenicity of N-nitroso compounds in the host mediated assay. Cancer Res. 35: 1813-1818.
12. Green, S., Zeiger, E., Palmer, K.A., Springer, J.A., Legator, M.S. (1976) Protocols for the dominant lethal, host mediated assay, and in vitro cytogenetic tests utilized in the FDA GRAS review program. J. Toxicol. Environ. Health 1: 921-928.
13. Flamm, W.G., Valcovic, L.R., deSerres, F.J., D'Aguanno, W., Fishbein, L., Green, S., Malling, H.V., Mayer, V., Prival, M., Wolff, G., Zeiger, E. (1977) Approaches to determining the mutagenic properties of chemicals: Risk to future generations. J. Environ. Pathol. Toxicol. 1: 301-352.
14. Zeiger, E., Sheldon, A.T. (1978) The mutagenicity of heterocyclic N-nitrosamines for *Salmonella typhimurium*. Mutat. Res. 57: 1-10.
15. Zeiger, E., Sheldon, A.T. (1978) The mutagenicity of N-nitrosopiperidines for *Salmonella typhimurium*. Mutat. Res. 57: 85-89.
16. Bronzetti, G., Zeiger, E., Frezza, D. (1978) Genetic effects of trichloroethylene in yeast. J. Environ. Pathol. Toxicol. 1: 411-418.

17. Newberne, P.M., Zeiger, E. (1978). Nutrition, carcinogenesis, and mutagenesis. *In* Adv. Modern Toxicol., Vol. 5, Mutagenesis. Eds. Flamm, W.G., Mehlman, M., Hemisphere Publishing Co., Washington, pp. 53-84.
18. Simmon, V.F., Rosenkranz, H.S., Zeiger, E., Poirier, L.A. (1979) The mutagenic activity of chemical carcinogens and related compounds in the intraperitoneal host-mediated assay. *J. Natl. Cancer Inst.* 62: 911-918.
19. Frezza, D., Zeiger, E., Gupta, B. (1979) The intrasanguineous host-mediated assay procedure. Distribution and retention of yeast in the mouse. *Mutat. Res.* 64: 295-305.
20. Bronzetti, G., Zeiger, E., Malling, H.V. (1979) Genetic toxicity of procarbazine in bacteria and yeast. *Mutat. Res.* 68: 51-58.
21. Wei, R.-D., Ong, T.-M., Whong, W.Z., Frezza, D., Bronzetti, G., Zeiger, E. (1979) Genetic effects of PR toxin in eukaryotic microorganisms. *Environ. Mutagen.* 1: 45-53.
22. Zeiger, E. (1979) Mammalian cell mutagenesis in a mutagen screening program. *In* Banbury Report No. 2, Mammalian Cell Mutagenesis: The Maturation of Test Systems. Eds. Hsie, A.W., O'Neill, J.P., McElheny, V.K., Cold Spring Harbor Laboratory, New York, pp. 145-153.
23. Zeiger, E., Chhabra, R.S., Margolin, B.H. (1979) The effects of the hepatic S9 fraction from Aroclor 1254 treated rats on the mutagenicity of benzo(a)pyrene and 2-aminoanthracene in the Salmonella/microsome assay. *Mutat. Res.* 64: 378-389.
24. Ong, T.-M., Mukhtar, H., Wolf, C.R., Zeiger, E. (1980) Differential effects of cytochrome P450-inducers on promutagen activation capabilities and enzymatic activities of S-9 from rat liver. *J. Environ. Pathol. Toxicol.* 4: 55-65.
25. Hunt, C.L., Jr., Walters, D.B., Zeiger, E. (1980) Guidelines and approaches for safe handling procedures and design of a high hazard facility for life scientists. *In* Safe Handling of Chemical Carcinogens, Mutagens and Teratogens: The Chemist's Viewpoint. Ed. Walters, D.B., Ann Arbor Press, Ann Arbor, Mich., pp. 31-47.
26. Zeiger, E., Drake, J.W. (1980) An environmental mutagenesis test development programme. *In* Molecular and Cellular Aspects of Carcinogen Screening Tests. Eds. Montesano, R., Bartsch, H., Tomatis, L., IARC Scientific Publications No. 27, Lyon. pp. 303-313.
27. Anders, M., McCoy, E.C., Rosenkranz, H.S., Zeiger, E. (1980) A bactericidal activity of microsomal preparations. *Mutat. Res.* 78: 1-5.
28. Zeiger, E., Guthrie, J. (1981) Cyclic hydrazides are mutagenic for *Salmonella typhimurium*. *Mutat. Res.* 91: 199-205.
29. Zeiger, E., Pagano, D.A., Robertson, I.G.C. (1981) A rapid and simple scheme for confirmation of Salmonella tester strain phenotype. *Environ. Mutagen.* 3: 205-209.
30. Margolin, B.H., Kaplan, N., Zeiger, E. (1981) Statistical analysis of the Ames Salmonella/microsome test. *Proc. Natl. Acad. Sci. USA* 78: 3779-3783.
31. Bridges, B.A., Zeiger, E., McGregor, D. (1981) Summary report on the performance of bacterial mutation assays. *In* Short-Term Tests for Carcinogens: Report of the International Collaborative Program. Eds. deSerres, F.J., Ashby, J., Elsevier/North Holland, Amsterdam, pp. 49-67.
32. Robertson, I.G.C., Philpot, R.M., Zeiger, E., Wolf, C.R. (1981) Specificity of rabbit pulmonary cytochrome P-450 isozymes in the activation of several aromatic amines and aflatoxin B1. *Mol. Pharm.* 20: 662-668.

33. Leifer, Z., Kada, T., Mandel, M., Zeiger, E., Stafford, R., Rosenkranz, H.S. (1981) An evaluation of tests using DNA repair-deficient bacteria for predicting genotoxicity and carcinogenicity. A report of the U.S. EPA's Gene-Tox Program. *Mutat. Res.* 87: 211-297.
34. Bronzetti, G., Zeiger, E., Lee, I., Suzuki, K., Malling, H.V. (1981) Genetic effects of 2,3,7,8-tetrachlordibenzo-*p*-dioxin in yeast in vitro and in vivo. *In Chlorinated Dioxins and Related Compounds. Impact on the Environment.* Eds. Hutzinger, O., Frei, R.W., Merian, E., Pocchiari, F., Pergamon Press, Oxford, pp. 429-436.
35. Zeiger, E. (1982) The role of short term mutagenicity tests in the identification of hazardous chemicals. *TAPPI* 65: 163-166.
36. Guthrie, J., Robertson, I.G.C., Zeiger, E., Boyd, J.A., Eling, T.E. (1982) Selective activation of some dihydrodiols of several polycyclic aromatic hydrocarbons to mutagenic products by prostaglandin synthetase. *Cancer Res.* 42: 1620-1623.
37. Zeiger, E. (1982) Knowledge gained from the testing of large numbers of chemicals in a multi-laboratory, multi-system mutagenicity testing program. *In Environmental Mutagens and Carcinogens.* Eds. Sugimura, T., Kondo, S., Takebe, H., University of Tokyo Press, Tokyo/Alan R. Liss, Inc., New York, pp. 337-344.
38. Philpot, R.M., Wolf, C.R., Slaughter, S.R., Bend, J.R., Robertson, I.G.C., Zeiger, E., Statham, C.N., Boyd, M.R. (1982) The role of the cytochrome P-450- dependent monooxygenase system in pulmonary-specific toxic effects of xenobiotics. *In Microsomes, Drug Oxidations, and Drug Toxicity.* Eds. Sato, R., Kato, R., Japan Scientific Societies Press, Tokyo/Wiley-Interscience, New York, pp. 487-494.
39. Pagano, D.A., Yagen, B., Hernandez, O., Bend, J.R., Zeiger, E. (1982) Mutagenicity of (R) and (S) styrene 7,8-oxide and the intermediary mercapturic acid metabolites formed from styrene 7,8-oxide. *Environ. Mutagen.* 4: 575-584.
40. Zeiger, E., Pagano, D.A. (1982) Comparative mutagenicity of dimethylaminoazobenzene and analogues in *Salmonella*. *Carcinogenesis* 3: 559-561.
41. Speck, W.T., Meyer, L.W., Zeiger, E., Rosenkranz, H.S. (1982) Mutagenicity and DNA-modifying activity of 2-nitropropane. *Mutat. Res.* 104: 49-54.
42. Zeiger, E., Pagano, D.A., Nomeir, A.A. (1982) Structure/activity studies on the mutagenicity of tris(2,3-dibromopropyl)phosphate (Tris-BP) and its metabolites in *Salmonella*. *Environ. Mutagen.* 4: 271-277.
43. Zeiger, E., Haworth, S., Speck, W., Mortelmans, K. (1982) Phthalate ester mutagenicity testing in the NTP Environmental Mutagenesis Test Development Program. *Environ. Health Perspect.* 45: 99-101.
44. Rowley, R.M., Zeiger, E., Russell, C. (1982) A PROPHET-based laboratory data entry and data-base management system for the Environmental Mutagenesis Test Development Program. *Computers Biomed. Res.* 15: 544-554.
45. Frezza, D., Smith, B., Zeiger, E. (1983) The intrasanguineous host mediated assay procedure using *Saccharomyces cerevisiae*: Comparison with two other metabolic activation systems. *Mutat. Res.* 108: 161-168.
46. Robertson, I.G.C., Sivarajah, K., Eling, T.E., Zeiger, E. (1983) Activation of some aromatic amines to mutagenic products by prostaglandin endoperoxide synthetase. *Cancer Res.* 43: 476-480.
47. Robertson, I.G.C., Zeiger, E., Goldstein, J.A. (1983) Specificity of rat liver cytochrome P-450 isozymes in the mutagenic activation of benzo(a)pyrene, aromatic amines and aflatoxin B1. *Carcinogenesis* 4: 93-96.



48. Zeiger, E. (1983) An overview of genetic toxicity testing in the National Toxicology Program. *Ann. N.Y. Acad. Sci.* 407: 387-394.
49. Zeiger, E. (1983) Carcinogenic risk: Letter to the Editor. *Science* 221(4605): 810.
50. Haworth, S., Lawlor, T., Mortelmans, K., Speck, W., Zeiger, E. (1983) Salmonella mutagenicity test results for 250 chemicals. *Environ. Mutagen.* 5(Suppl. 1): 3-142.
51. Margolin, B.H., Risko, K.J., Shelby, M.D., Zeiger, E. (1984) Sources of variability in Ames' *Salmonella typhimurium* tester strains: Analysis of the International Collaborative Study on "Genetic Drift". *Mutat. Res.* 130: 11-25.
52. Mortelmans, K., Haworth, S., Speck, W., Zeiger, E. (1984) Mutagenicity testing of Agent Orange components and related chemicals. *Toxicol. Appl. Pharmacol.* 75: 137-146.
53. Zeiger, E., Pagano, D.A. (1984) Suppressive effects of chemicals in mixture on the Salmonella plate test response in the absence of apparent toxicity. *Environ. Mutagen.* 6: 683-694.
54. Dunkel, V.C., Zeiger, E., Brusick, D., McCoy, E., McGregor, D., Mortelmans, K., Rosenkranz, H.S., Simmon, V.F. (1984) Reproducibility of microbial mutagenicity assays. I. Tests with *Salmonella typhimurium* and *Escherichia coli* using a standardized protocol. *Environ. Mutagen.* 6(Suppl. 2): 1-251.
55. Galloway, S.M., Bloom, A.D., Resnick, M., Margolin, B.H., Nakamura, F., Archer, P., Zeiger, E. (1985) Development of a standard protocol for in vitro cytogenetic testing with Chinese hamster ovary cells. Comparison of results for 22 compounds in two laboratories. *Environ. Mutagen.* 7: 1-51.
56. Zeiger, E., Haworth, S. (1985) Tests with a preincubation modification of the Salmonella/microsome assay. *In Collaborative Study of Short-Term Tests for Carcinogens.* Eds. Ashby, J., deSerres, F.J., Draper, M., Ishidate, M. Jr., Margolin, B.H., Matter, B., Shelby, M.D., Elsevier, Amsterdam, pp. 187-199.
57. Zeiger, E., Haworth, S., Mortelmans, K., Speck, W. (1985) Mutagenicity testing of di(2-ethylhexyl)phthalate and related chemicals in Salmonella. *Environ. Mutagen.* 7: 213-232.
58. Zeiger, E. (1985) The Salmonella mutagenicity assay for identification of presumptive carcinogens. *In Handbook of Carcinogen Testing.* Eds. Milman, H.A., Weisburger, E.K., Noyes Publications, New Jersey, pp. 83-99.
59. Pagano, D.A., Zeiger, E. (1985) The stability of mutagenic chemicals stored in solution. *Environ. Mutagen.* 7: 293-302.
60. Matijasevic, Z., Zeiger, E. (1985). Mutagenicity of pyrene in Salmonella. *Mutat. Res.* 142: 149-152.
61. Boyd, J.A., Zeiger, E., Eling, T.E. (1985) The prostaglandin H synthase-dependent activation of 2-aminofluorene to products mutagenic to *S. typhimurium* strains TA98 and TA98NR. *Mutat. Res.* 143: 187-190.
62. Lawlor, T.E., Haworth, S.R., Zeiger, E., Park, D.L., Lee, L.S. (1985) Mutagenic potential of ammonia-related aflatoxin reaction products in cottonseed meal. *J. Amer. Oil Chem. Soc.* 62: 1136-1138.
63. Dunkel, V.C., Zeiger, E., Brusick, D., McCoy, E., McGregor, D., Mortelmans, K., Rosenkranz, H.S., Simmon, V.F. (1985) Reproducibility of microbial mutagenicity assays: II. Testing of carcinogens and noncarcinogens in *Salmonella typhimurium* and *Escherichia coli*. *Environ. Mutagen.* 7(Suppl. 5): 1-248.
64. Zeiger, E., Risko, K.J., Margolin, B.H. (1985) Strategies to reduce the cost of mutagenicity screening using the Salmonella/microsome assay. *Environ. Mutagen.* 7: 901-911.

65. Venitt, S., Baker, R., Liber, H., Matsushima, T., Probst, G., Zeiger, E. (1985) Summary report on the performance of the bacterial mutation assays. *In Progress in Mutation Research. Vol. 5, Evaluation of Short-Term Tests for Carcinogens. Report of the International Programme on Chemical Safety's Collaborative Study on In Vitro Assays.* Eds. Ashby, J., de Serres, F.J., Draper, M., Ishidate Jr., M., Margolin, B.H., Matter, B.E., Shelby, M.D., Elsevier, Amsterdam. pp. 11-23.
66. Margolin, B.H., Resnick, M.A., Rimpo, J.Y., Archer, P., Galloway, S.M., Bloom, A.D., Zeiger, E. (1986) Statistical analyses for in vitro cytogenetic assays using Chinese hamster ovary cells. *Environ. Mutagen.* 8: 183-204.
67. Mortelmans, K., Haworth, S., Lawlor, T., Speck, W., Tainer, B., Zeiger, E. (1986) Salmonella mutagenicity tests. II. Results from the testing of 270 chemicals. *Environ. Mutagen.* 8(Suppl. 7): 1-119.
68. Stark, A.-A., Zeiger, E., Shtelzer, S., Sheradsky, T., Lifshitz, Y., Blum, J. (1986) Structure-activity relationships in the mutagenicity of *N*-substituted derivatives of phenanthrene 9,10-imine. *Mutagenesis* 1: 35-39.
69. deSerres, F.J., Zeiger, E., Hatch, F.T. (1986) Future directions and research priorities for food mutagens. *Environ. Health Perspect.* 67: 153-157.
70. Zeiger, E., Tennant, R.W. (1986) Mutagenesis, clastogenesis, carcinogenesis: Expectations, correlations, and relations. *In Genetic Toxicology of Environmental Chemicals. Part B: Genetic Effects and Applied Mutagenesis.* Eds. Ramel, C., Lambert, B., Magnusson, J., Alan R. Liss, Inc., New York. pp. 75-84.
71. Canter, D.A., Zeiger, E., Haworth, S., Lawlor, T., Mortelmans, K., Speck, W. (1986) Comparative mutagenicity of aliphatic epoxides in Salmonella. *Mutat. Res.* 172: 105-138.
72. Hatch, F.T., MacGregor, J.T., Zeiger, E. (1986) Review: Putative mutagens and carcinogens in foods. VII. Genetic toxicology of the diet. *Environ. Mutagen.* 8: 467-484.
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- Teixeira, J.P., Zijno, A., Fenech, M. (2006) The effects of GSTM1 and GSTT1 polymorphisms on micronucleus frequencies in human lymphocytes in vivo. *Cancer Epidemiol. Biomark. Prev.* 15: 1038-1042.
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214. Zeiger, E., Hoffmann, G.R. (2012) An illusion of hormesis in the Ames test: Statistical significance is not equivalent to biological significance. *Mutat. Res.* 746: 89-93.
215. Gollapudi, B.B., Dearfield, K.L., Hernandez, L.G., Jeffrey, A.M., Johnson, G.E., Julien, E., Kim, J.H., Lovell, D.P., MacGregor, J.T., Moore, M.M., Pottenger, L.H., van Benthem, J., White, P.A., Zeiger, E., Thybaud, V. (2013) Quantitative approaches for assessing dose-response in genetic toxicology studies. *Environ. Mol. Mutagen.* 54: 8-18.
216. Zeiger, E. (2013) Bacterial mutation assays. *In Genotoxicity Assessment: Methods and Protocols.* Eds. Dhawan, A., Bajpayee, M., Humana Press, New York. pp. 3-26.
217. Zeiger, E. (2013) Carcinogenicity testing. *In Reducing, Refining and Replacing the Use of Animals in Toxicity Testing.* Eds. Allen, D.G., Waters, M.D., RSC Publishing, Cambridge. pp. 311-329.
218. Johnson, G.E., Soeteman-Hernández, L.G., Gollapudi B.B., Bodger, O.G., Dearfield, K.L., Heflich, R.H., Hixon, J.G., Lovell D.P., MacGregor, J.T., Pottenger, L.H., Thompson, C.M., Abraham, L., Thybaud, V., Young Tanir, J., Zeiger, E., van Benthem, J., White, P.A. (2014) Derivation of point of departure (PoD)

estimates in genetic toxicology studies and their potential applications in risk assessment. *Environ. Mol. Mutagen.* 55: 609-623.

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222. Haseman, J.K., Growe, R.G., Zeiger, E., McConnell, E.E., Luster, M.I., Lippes, J. (2015) An examination of the mode of action of quinacrine in the reproductive tract in a 2-year rat cancer bioassay and its implications for human clinical use. *Regul. Toxicol. Pharmacol.* 71: 371-378.
223. Zeiger, E., Gollapudi, B., Aardema, M., Auerbach, S., Boverhof, D., Custer, L., Dedon, P., Honma, M., Ishida, S., Kasinski, A., Kim, J.H., Manjanatha, M., Marlowe, J., Pfuhrer, S., Pogribny, I., Slikker, W., Stankowski, L.F., Tanir, J., Tice, R., van Benthem, J., White, P., Witt, K.L., Thybaud, V. (2015) Genetic Toxicology: Opportunities to integrate new approaches. Report of a Workshop. *Environ. Mol. Mutagen.* 56:277-285.
224. Matijasevic, Z., Zeiger, E. (2015) Maria Alacevic (April 19, 1929 – February 15, 2015). *Mutat. Res.* 784/785: 45-46.
225. Kissling, G.E., Haseman, J.K., Zeiger, E. (2015) Proper interpretation of chronic toxicity studies and their statistics: A critique of “Which level of evidence does the US National Toxicology Program provide? Statistical considerations using the Technical Report 578 on *Ginkgo biloba* as an example.” *Toxicol. Lett.* doi: [10.1016/j.toxlet.2014.09.016](https://doi.org/10.1016/j.toxlet.2014.09.016) (2014)

#### BOOKS EDITED:

Gold, L.S., Zeiger, E. (1997) *Handbook of Carcinogenic Potency and Genotoxicity Databases*. CRC Press, Boca Raton, 754 pages.

Witten, M.L., Zeiger, E., Ritchie, G.D. (2010) *Jet Fuel Toxicology*. Taylor and Francis/CRC Press, Boca Raton, 324 pages.

**INVITED PRESENTATIONS (Scientific Conferences and Workshops):**

“The Host-Mediated Assay.” FDA Bureau of Drugs Workshop on Mutation, Rockville, Md. January 1972.

“Effect of Metabolism on Mutagenicity in the Host-Mediated Assay.” NIEHS Workshop on the Evaluation of Chemical Mutagenicity Data in Relation to Population Risk, Research Triangle Park, N.C. June 1973.

“Criteria for Evaluation of Microbial Mutagenicity Data.” NCI Workshop on Chemical Mutagenesis, Bethesda, Md. June 1974.

“An Overview of Microbial Mutagenicity Testing in Progress at FDA and NCI.” Pharmaceutical Manufacturers Association Subcommittee on Mutagenicity, Washington, D.C. June 1974.

“Development of Short Term Tests.” NIEHS Open Meeting on the Evaluation of Systems to Detect Mutagenic Activity, Bethesda, Md. June 1975.

“General Criteria Used to Determine Mutagenic Potential in Experimental Organisms.” U.S.-Japan Conference on Methods for Evaluation of Environmental Mutagenesis and Carcinogenesis, Seattle, Wash. July 1975.

“Potential In Vitro Systems for Detecting Carcinogens.” FDA Bureau of Drugs Seminar on Carcinogenesis, Rockville, Md. February 1976.

“The Problem of Defining Risk to Man for Mutation.” PMA-DRUSAF Meeting on Mutagenicity Testing in the Pharmaceutical Industry, Trevese, Pa. October 1976.

“Tier System Approach to Mutagenesis Testing.” In Vitro Methods for Testing Chemical Toxicity, W. Alton Jones Cell Science Center, Lake Placid, N.Y. November 1976.

“Approaches Applicable to Various Problem Areas.” Open Meeting on the DHEW Mutagenesis Testing Document, Bethesda, Md. May 1977.

“Data Presentation and Analysis.” NIEHS-sponsored Salmonella/Microsome Assay Workshop on Data Production and Analysis, Arlington, Va. August 1978.

“Status and Future Directions of the NIEHS Mutagenicity Testing Program.” U.S. DOE Workshop on Review and Development of Biotesting Programs for Energy Utilization, Boca Raton, Fla. November 1978.

“Mammalian Cell Mutagenesis in a Mutagen Screening Program.” Banbury Center conference "Quantitative Mammalian Cell Mutagenesis and Mutagen Screening," Cold Spring Harbor, N.Y. May 1979.

“The Role of Mutagenesis Testing in the Definition of Mutagenesis Legislation.” European Environmental Mutagen Society, Makarska-Tucepi, Yugoslavia. September 1979.

“The Role of Short Term Mutagenicity Tests in the Identification of Hazardous Substances.” Technical Association of Pulp and Paper Industries, Chicago, Ill. March 1981.

“Chemical and Biological Interactions.” Gordon Conference Scientific Basis and Applications of Genetic Toxicology Bioassays, New London, N.H. June 1981.

“Knowledge Gained from the Testing of Large Numbers of Chemicals in a Multi-Laboratory Multi-System Mutagenicity Testing Program.” International Conference on Environmental Mutagens, Tokyo, Japan. September 1981.

“Use of In Vitro Systems in Evaluating Genetic Toxicity of Chemicals.” North Carolina Chapter of the Society of Toxicology, Research Triangle Park, N.C. January 1982.

“Analysis of Inter and Intralaboratory Variation in the Salmonella Plate Test.” European Environmental Mutagen Society, Espoo, Finland. June 1982.

“Genetic Toxicity Tests and the National Toxicology Program.” New York Academy of Sciences, New York, N.Y. October 1982.

Organized symposium "Environmental Mutagenesis and Carcinogenesis" and presented talk "Environmental Mutagens and Their Detection," American Society for Therapeutic Radiology and Oncology, Washington, D.C. October 1984.

“Food Mutagen Research Programs: Long-Term Objectives.” Joint Workshop of the U.S.-Japan Environmental Panels on Mutagenesis and Carcinogenesis, Honolulu, Hawaii. December 1984.

“Mutagenesis, Clastogenesis, Carcinogenesis: Expectations, Correlations, and Relations.” International Conference on Environmental Mutagens, Stockholm, Sweden. June 1985.

“Predictivity of Bacterial Mutagenesis for Carcinogenesis.” Workshop, Short-Term Genotoxic Monitoring In Vivo, Durham, N.C. October 1985.

“Identification and Characterization of Mutagens Formed During the Cooking of Beef: Recent Progress at the Lawrence Livermore National Laboratory.” Annual U.S.-Japan Joint Environmental Panel Conference. Research Triangle Park, N.C. October 1985.

Organized symposium "Strategies for Detecting Mutagens and Clastogens (and Carcinogens): A Decade After 300 Chemicals" for the Environmental Mutagen Society, and presented talk "In Vitro Mutagenicity Tests and Rodent Tumors." Baltimore, Md. April 1986.

“Toxicity-mediated ‘Antimutagenesis’ in Salmonella.” Genetic Toxicology Association, Cherry Hill, N.J. May 1986.

“Salmonella and Mouse Lymphoma Cell Mutagenesis and In Vitro Cytogenetic Relationships.” EPA Workshop on the Relationship Between Short-Term Test Information and Carcinogenicity. Williamsburg, Va. January 1987.

“Strategy for the Use of Genetic Toxicity Tests.” International Symposium on Biological Models to Determine the Safety of Bound Residues in the Tissues of Food-Producing Animals. Washington, D.C. December 1988.

“Strategies for the Identification of Rodent Carcinogens by In Vitro Short-Term Tests.” International Conference on Environmental Mutagens, Cleveland, Ohio. July 1989.

“Are There Clastogens Not Detected by the Ames Test?” Environmental Mutagen Society. Albuquerque, N.M. March 1990.

“The Possible Role of Endogenous Oxygen Radicals in Mutagenesis and Carcinogenesis.” European Environmental Mutagen Society, Prague, Czechoslovakia. August 1991.

“What Does Mutagenicity Tell us about Carcinogenicity, and is it Worth Hearing?” ILSI-Society for Risk Analysis – Brookings Institution seminar series, Washington, D.C. December 1991.

“Genetic Toxicity of Natural and Manufactured Chemicals in the Diet.” International conference, Towards Reducing the Incidence of Colorectal Cancer, Auckland, N.Z. February, 1993.

Invited discussant at the workshop "Predicting Chemical Carcinogenesis in Rodents," Research Triangle Park, N.C. May 1993.

Symposium organizer and speaker "Mutagens and Toxins in Food," XV International Congress of Nutrition, Adelaide, Australia. September 1993.

"Validation of New Toxicology Test Systems -- The Paradigm of Genetic Toxicity Tests." World Congress on Alternatives and Animal Use in the Life Sciences, Baltimore, Md. November 1993.

"Implications of the 1993 NIH Revitalization Act." Alternatives to Animal Research Symposium, Perspectives on Validation of Non-Whole Animal Alternatives. Aberdeen, Md. May 1994.

"Law and Liability in the Laboratory." Congress on Cell and Tissue Culture, Research Triangle Park, N.C. June 1994.

"The Use of Mutagenicity Information to Predict Chemical Carcinogenicity." Russian Environmental Mutagen Society, Moscow, Russia. October 1994.

Invited participant at the workshop "Mechanism-Based Toxicology in Cancer Assessment: Implications for Research, Regulation, and Legislation." Chapel Hill, N.C. January 1995.

"Legal and Ethical Issues in Science: Genetic Testing." Workshop organized and presented at the Environmental Mutagen Society, St. Louis, Mo. March 1995

"Efficacy of Short-Term Tests in Predicting Carcinogenesis." Workshop, Science and Policy Issues in the Application of Alternative Carcinogen Identification Methods, Berkeley, Calif. July 1995.

"Federal Interagency Activities Toward Validation and Regulatory Acceptance of Alternative Tests." Scientists Center for Animal Welfare, Baltimore, Md. June 1996.

"ICCVAM and OECD Positions on Validation and Regulatory Acceptance." Alternatives in the Assessment of Toxicity: Issues, Progress and Opportunities. Aberdeen, Md. June 1996.

"Symposium Summary." Alternatives in the Assessment of Toxicity: Issues, Progress and Opportunities. Aberdeen, Md. June 1996.

"Validation and Regulatory Acceptance of New Methods." 10th International Conference on Carcinogenesis and Risk Assessment: New Approaches for Assessing the Carcinogenic Potential of Chemicals. Austin, Texas. December 1996.

"Validating New Toxicology Tests for Regulatory Acceptance." IBC 2nd Annual Symposium on Molecular Toxicology. Rockville, Md. April 1997.

"Scientific and Regulatory Issues Relating to the Acceptance of Alternative Testing Methods." American Association for Clinical Chemistry Annual Meeting, Atlanta, Ga. July 1997.

"Old GEMS and New Genes." Genotoxicity and Environmental Mutagen Society (GEMS) Meeting. Research Triangle Park, N.C. October 1997.

"In Vitro Studies." NIOSH National Occupational Research Agenda, Cancer Research Methods Team. Cincinnati, Ohio. January 1998.

Potency Measures and the Relationships Between Genetic Toxicity and Carcinogenicity. Presented in the symposium, "Dose Response and Thresholds." Environmental Mutagen Society Meeting. Anaheim, Calif. March 1998.

Panel discussion organizer and Chair, "The Future of Transgenic Mutation Models." Environmental Mutagen Society. Anaheim, Calif. March 1998.

"The Evolution of Genetic Toxicity Testing." Keynote address, Taipei International Conference of Environmental and Occupational Mutagenesis. Taipei, Taiwan. November 1998.

"Identification of Carcinogens and Noncarcinogens Using Genetic Toxicity Testing." Taipei International Conference of Environmental and Occupational Mutagenesis. Taipei, Taiwan. November 1998.

"Validation of Micronucleus Tests in Human Cells." International Human Micronucleus Project Workshop at the International Conference on Environmental Mutagens in Human Populations. Bangkok, Thailand. December 1998.

"How Many Mutagens and Carcinogens Are There, and How Do We Answer That Question?" International Conference on Environmental Mutagens in Human Populations. Bangkok, Thailand. December 1998.

Strategies for Data Evaluation and for Publication. Alexander Hollaender Training Workshop, "Research Design for Genetic Toxicology Studies." Harare, Zimbabwe. March 1999.

"Current Strategies for Detecting Carcinogens by Using Genetic Toxicity Tests." World Congress on Alternatives and Animal Use in the Life Sciences. Bologna, Italy. August 1999.

"Mutagenicity Tests: Promises vs. Performance." Genotoxicity and Environmental Mutagen Society, Research Triangle Park, N.C. October 1999.

Symposium organizer and Chair, "Legal and Ethical Issues in DNA Sampling and Testing." Environmental Mutagen Society. New Orleans, La. April 2000.

"International Validation of In Vitro Methods." Les Methods *In Vitro*. Une Alternative a l'Experimentation Animale. Bilan et Perspectives. Paris, France. May 2000.

"Hierarchical Screening Strategies for Rapid Assessment of Mutagenic Activity." Society for Biomolecular Screening. Vancouver, BC, Canada. September 2000.

"The OECD Guidance Document on the Recognition, Assessment and Use of Clinical Signs as Humane Endpoints for Experimental Animals Used in Safety Evaluation." Conference, "Alternative Toxicological Methods for the New Millennium: Science and Application." Bethesda, Md. November 2000.

"Current Status of Validation Efforts." Johns Hopkins University workshop, TestSmart - Endocrine Disruptors. Baltimore, Md. February 2001.

"Ethical Considerations in Human Studies." Environmental Mutagen Society Meeting Short Course. San Diego, Calif. March 2001.

"Symposium organizer and Chair, Ethical Issues Associated With Gene Therapy." Environmental Mutagen Society Meeting. San Diego, Calif. March 2001.

"Brief Overview of the Objectives of the HUMAN MicroNucleus (HUMN) Project." International Conference on Environmental Mutagens. Shizuoka, Japan. October 2001.



“Ethical Issues in Human Monitoring Studies: What Should the Subjects be Told and What are Their Rights?”  
NATO Advanced Workshop, Krakow, Poland, June, 2002.

“Publication Issues for Human Monitoring Studies: Data Compilation and Presentation: Least Publishable Unit”  
NATO Advanced Workshop, Krakow, Poland, June, 2002.

Discussion Leader, Endocrine Testing Issues, World Congress on Alternatives to Animals in the Life Sciences,  
New Orleans, La. August 2002.

“Validation and Acceptance of New and Revised Tests: A Flexible but Transparent Process.” Eurotox 2002,  
Budapest, Hungary, September, 2002.

Moderator, Genetic Testing and the Workplace: Toxicogenomics, Polymorphisms and Issues of Employment and  
Insurance Law, in “Working at the Frontiers of Law and Science: Applications of the Human Genome.” Chapel  
Hill, N.C. October, 2003.

“Predicting Carcinogenicity: Mutagenicity Testing Seemed to be More Effective 30 Years Ago.” Genetic  
Toxicology Association, Newark, Del. May, 2004.

Chair and Introductory Speaker, The HUMN [Human Micronucleus] Program, International Conference on  
Environmental Mutagens, San Francisco, Calif., September, 2005.

Organizer and Chair, Legal and Ethical Issues Associated With Genetic Testing, Symposium at the International  
Conference on Environmental Mutagens, San Francisco, Calif., September, 2005.

“Identification of Antimutagens and Anticarcinogens: Issues and Fallacies.” Genetics and Environmental  
Mutagenesis Society, Research Triangle Park, N.C., April, 2006.

“Mutagenicity Test Performance, Decision Thresholds, and the Prediction of Carcinogenicity.” FDA CFSAN Grand  
Rounds Symposium, “Crossing the Thresholds of Tomorrow.” Laurel, Md., June, 2006.

Co-organizer, Scientific Publication and Peer Review Workshop, and presenter “The Author’s Roles and  
Responsibilities,” Environmental Mutagen Society, Vancouver, BC, Canada, September 2006.

“The Author’s Role and Responsibilities in Submitting a Manuscript and Getting it Published.” EPA Networking  
and Leadership Training Organization workshop, Research Triangle Park, N.C., August 2007.

“Ethical Issues in Human Biomonitoring Studies.” Latin American Environmental Mutagenesis, Carcinogenesis  
and Teratogenesis Society, Cartagena, Colombia, August 2007.

“Issues to Consider When Identifying Chemicals as Antimutagens.” Latin American Environmental Mutagenesis,  
Carcinogenesis and Teratogenesis Society, Cartagena, Colombia, August 2007.

“Identification of Antimutagens.” Environmental Mutagen Society, Atlanta, Ga., October 2007.

“A Historical Perspective on the Current Test Battery: Its Strengths and Weaknesses.” Environmental Mutagen  
Society, Atlanta, Ga., October 2007.

“Issues to Consider When Identifying Chemicals as Antimutagens.” Symposium, Nutrigenomic: Interaction  
Nutrient-Gene, Botucatu, Brazil, October 2007.

“Issues to Consider When Identifying Chemicals as Antimutagens.” SBMCTA VIII Congresso Brasileiro de  
Mutagenese, Carcinogenese e Teratogenese Ambiental, Mangaratiba, Brazil, October 2007.

“Reproducibility and Sources of Variability in the Salmonella Mutation Assay.” SBMCTA VIII Congresso Brasileiro de Mutagenese, Carcinogenese e Teratogenese Ambiental, Mangaratiba, Brazil, October 2007.

“A New OECD Test Guideline (TG487): In Vitro Mammalian Cell Micronucleus Test (MNvit).” Japanese Environmental Mutagen Society, Okinawa, Japan, December 2008.

Discussion leader. HUMN/HUMN<sub>XL</sub> 2009 Workshop & Training Course on Micronucleus Cytome Assays in Lymphocytes and Buccal Cells. International Conference on Environmental Mutagens, Florence, Italy, August 2009.

“Mutagenicity at Low Doses.” Congress of Toxicology in Developing Countries. Sun City, South Africa, September 2009.

“The Results of an Interlaboratory Ames Test Proficiency Exercise.” Brazilian Society of Environmental Mutagenesis, Carcinogenesis, and Teratogenesis – SMBCTA, Ouro Preto, Brazil, November 2009.

“Internationally Accepted Guidelines and Data Interpretation.” Workshop, Strategies to Define Environmental Criteria for Protection of Human Health and the Ecosystem, Jundiai, Sao Paulo, Brazil, November 2009.

“Low-Dose (Threshold?) Effects in Mutagenesis and Carcinogenesis: Mutagenesis.” USEPA/ORD/NHEERL Integrated Systems Toxicology Division seminar, Research Triangle Park, NC, January 2010.

Panelist. Career Development Workshop. Environmental Mutagen Society, Ft. Worth, Texas, October 2010.

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“International Harmonization and Standardization of Mutagenicity Assays.” Brazilian Congress of Toxicology, Ribeirao Preto, Brazil, June 2011.

“Low-Dose In Vivo Study of Acrylamide.” Environmental Mutagen Society, Montreal, Canada, October 2011.

“The Development and Evolution of Genetic Toxicity Testing.” United Kingdom Environmental Mutagen Society, Swansea, Wales, July 2012.

“Workshop on Mutagenicity.” Toxicology Department, Agencia Nacional de Vigilancia Sanitaria (ANVISA) [National Health Surveillance Agency], Brasilia, Brazil, October 2012.

“Evaluation of U.S. NTP and FDA Databases for Follow-up Testing of Salmonella-Positive Chemicals.” European Union Reference Laboratory for Alternatives to Animal Testing, Ispra, Italy, January 2013.

“Case Studies of Chemicals that Produce Genetic Damage via Direct and/or Indirect Mechanisms: Acrylamide.” Environmental Mutagenesis and Genomics Society, Monterey, Calif, September 2013.

“Genetic Toxicity Testing for Mutagenicity.” International Conference of Environmental Mutagens, Foz do Iguazu, Brazil, November 2013.