

Carole A. Kimmel, Ph.D.
Senior Managing Scientist

Professional Profile

Dr. Carole A. Kimmel is a Senior Managing Scientist in Exponent's Health Sciences Center for Toxicology and Mechanistic Biology. She has more than 35 years experience in reproductive and developmental toxicology, children's environmental health, and risk assessment, and is an internationally recognized expert in these areas. Dr. Kimmel's laboratory research has included a number of studies on the causes and mechanisms of developmental toxicology and developmental neurotoxicology, with a focus on the effects of pharmaceuticals and environmental chemicals. She led the National Toxicology Program's Reproductive and Developmental Toxicology Program from 1980 to 1984. From 1984 to 2004, she was a Senior Scientist in the National Center for Environmental Assessment, US EPA, where she worked on advances in risk assessment approaches and development of risk assessment guidelines for noncancer health effects, particularly reproductive and developmental toxicity and neurotoxicity risk assessment. During that time, she worked on several specific risk assessments for pesticides and industrial chemicals.

Dr. Kimmel co-chaired the Developmental Disorders Working Group of the President's Task Force on Environmental Health Risks and Safety Risks to Children, which called for the development of a long-term study of children's environmental health. She then worked as the EPA lead for the interagency effort to plan, implement, and conduct the National Children's Study (NCS), a longitudinal study to investigate the effects of a broad range of environmental factors on children's health and development from before birth to adulthood.

Following her retirement from EPA in 2004, Dr. Kimmel has continued to consult with the National Institute of Child Health and Human Development, the lead agency for NCS, and has worked as an independent consultant on issues related to reproductive and developmental toxicology, children's health, and risk assessment for industry, government and the World Health Organization. She has also served on expert panels for the National Academy of Sciences/National Research Council to evaluate health and safety issues related to environmental contaminants. Dr. Kimmel is Past President of the Teratology Society, the Neurobehavioral Teratology Society, and the Reproductive and Developmental Toxicology Specialty Section of the Society of Toxicology.

Academic Credentials and Professional Honors

PMAF Postdoctoral Fellow, Toxicology, University of Cincinnati, 1970–1972
Ph.D., Anatomy, University of Cincinnati, 1970
B.S., Biology, Georgetown College (*magna cum laude*), 1966

Lifetime Achievement Award, Society of Toxicology Reproductive and Developmental Toxicology Specialty Section, 2006; Distinguished Service Award, EPA, 2005;

Arnold J. Lehman Award (for contributions in risk assessment), Society of Toxicology, 2000; Warkany Award and Lecture, Teratology Society, 1999; Society of Toxicology Best Paper Award in Fundamental and Applied Toxicology, 1995 (Allen BC, Kavlock RJ, Kimmel CA, and Faustman EM, Dose-response assessment for developmental toxicity - III. Statistical models, FAAT 23:496–509, 1994)

Publications

Golub MS, Collman GW, Foster PMD, Kimmel CA, Rajpert-DeMeyts E, Reiter EO, Sharpe RM, Skakkebaek NE, Toppari J. Public health implications of altered puberty timing. *Pediatrics*, 121:S218–S230, 2008.

Carney EW, Kimmel CA. Interpretation of skeletal variations for human risk assessment: Delayed ossification and wavy ribs. *Birth Defects Res, Part B*, 80:473–496, 2007.

Cooper RL, Lamb JC, IV, Barlow SM, Bentley K, Brady AM, Doerrer NG, Eisenbrandt DL, Fenner-Crisp PA, Hines RN, Irvine L, Kimmel CA, Koeter H, Li AA, Makris SL, Sheets L, Speijers GJA, Whitby K. A tiered approach to life stages testing for agricultural chemical safety assessment. *Crit Rev Toxicol* 2006; 36:69–98.

Harrouk W, Wheeler K, Kimmel GL, Hogan K, Kimmel CA. Effects of hyperthermia and boric acid on skeletal development in rat embryos. *Birth Defects Res Part B* 2005; 74:268–276.

Kimmel CA, Collman GW, Fields, N., Eskenazi B. Lessons learned from the NIEHS/EPA Centers for Children’s Environmental Health and Disease Prevention Research for the National Children’s Study. *Environ Health Perspect* 2005; 113:1414–1418.

Landrigan PJ, Kimmel CA, Correa A, Eskenazi B. Children’s health and the environment: Public health issues and challenges for risk assessment. *Environ Health Perspect* 2004; 112(2):257–65.

Mitchell A, Bakshi K, Kimmel C, Buck G, Feuston M, Foster PM, Friedman J, Holson J, Hughes C, Moore J, Schwetz B, Scialli A, Scott W, Vorhees C, Zirkin B. Evaluating chemical and other agent exposures for reproductive and developmental toxicity. *J Toxicol Environ Health A* 2003; 67(15–16):1159–1314.

Scialli AR, Buelke-Sam JL, Chambers CD, Friedman JM, Kimmel CA, Polifka JE, Tassinari MS. Communicating risks during pregnancy: A workshop on the use of data from animal developmental toxicity studies in pregnancy labels for drugs. *Birth Defects Res Part A Clin Mol Teratol* 2004; 70(1):7–12.

Laessig SA, Tabacova SA, Kimmel CA. A review of human studies of reproductive and developmental effects of pesticide exposure. *J Child Health* 2003; 1(4):405–447.

Tabacova S, Kimmel CA, Wall K, Hansen D. Atenolol developmental toxicity: Animal-to-human comparisons. *Birth Defects Res* 2003; (Part A), 67:181–192.

National Children's Study Interagency Coordinating Committee (Branum AM, Collman GW, Correa A, Keim SA, Kessel W, Kimmel CA, Klebanoff MA, Longnecker MP, Mendola P, Rigas M, Selevan SG, Scheidt PC, Schoendorf K, Smith-Khuri E, Yeargin-Alsopp M). The National Children's Study of environmental effects on child health and development. *Environ Health Perspect* 2003; 111:642–646.

Setzer RW Jr., Kimmel CA. Use of NOAEL, benchmark dose, and other models for human risk assessment of hormonally active substances. *Pure Appl Chem* 2003; 75:2151–2158.

Tabacova S, Little R, Tsong Y, Vega A, Kimmel CA. Adverse pregnancy outcomes associated with maternal enalapril antihypertensive treatment. *Pharmacoepidemiol Drug Safe* 2003; 12:633–646.

Kimmel CA. Use of toxicological data in estimating reference values for risk assessment. *Hum Ecol Risk Assess* 2002; 8(6):1303–1313.

Tabacova SA, Kimmel CA. Atenolol: Pharmacokinetic/dynamic aspects of comparative developmental toxicity. *Reprod Toxicol* 2002; 16:1–7.

Adams J, Bittner P, Buttar HS, Chambers CD, Collins TF, Daston GP, Filkins K, Flynn TJ, Graham JM Jr, Lyons Jones K, Kimmel C, Lammer E, Librizzi R, Mitala J, Polifka JE. Statement of the Public Affairs Committee of the Teratology Society on the fetal alcohol syndrome. *Teratology* 2002; 66(6):344–347.

Dugyala RR, Claggett TW, Kimmel GL, Kimmel CA. HSP90alpha, HSP90beta and p53 expression following *in vitro* hyperthermia exposure in gestation day 10 rat embryos. *Toxicol Sci* 2002; 69:183–190.

Euling SY, Gennings C, Wilson EM, Kemppainen JA, Kelce WR, Kimmel CA. Response-surface modeling of the effect of 5-dihydrotestosterone and androgen receptor levels on the response to the androgen antagonist vinclozolin. *Toxicol Sci* 2002; 69:332–343.

Kimmel GL, Williams PL, Claggett TW, Kimmel CA. Response-surface analysis of exposure-duration relationships: The effects of hyperthermia on embryonic development of the rat *in vitro*. *Toxicol Sci* 2002; 69:391–399.

Toraason M, Andersen M, Bogdanffy MS, Dankovic D, Faustman E, Foster P, Frederick C, Haber L, Kimmel CA, Lewis S, McClellan R, Melnick R, Mirer F, Morgan K, Schaeffer V, Silbergeld E, Slikker W, Swenberg J, Vainio H. Improving risk assessment: Toxicological research needs. *Hum Ecol Risk Assess* 2002; 8(6):1405–1419.

Kimmel CA. US EPA reference dose/reference concentration methodology: Update on a review of the process. *Hum Ecol Risk Assess* 2001; 7:117–123.

Kimmel CA. 1999 Warkany Lecture: Improving the science for predicting risks to children's health. *Teratology* 2001; 63:202–209.

Euling S, Kimmel CA. Developmental stage sensitivity and mode of action information for endocrine disrupting chemicals. *Sci Tot Environ* 2001; 274(1–3):103–113.

Kimmel CA, Makris SL. Recent developments in regulatory requirements for developmental toxicology. *Toxicol Lett* 2001; 120(1–3):73–82.

Tabacova SA, Kimmel CA. Enalapril: Pharmacokinetic/dynamic inferences for comparative developmental toxicity. *Reprod Toxicol* 2001; 15:467–478.

Bogdanffy MS, Daston G, Faustman EM, Kimmel CA, Kimmel GL, Seed J, Vu V. Harmonization of cancer and non-cancer risk assessment: Proceedings of a consensus-building workshop. *Toxicol Sci* 2001; 61:18–31.

Lau C, Andersen ME, Crawford-Brown DJ, Kavlock RJ, Kimmel CA, Knudsen TB, Muneoka K, Rogers JM, Setzer RW, Smith G, Tyl R. Evaluation of biologically-based dose-response modeling for developmental toxicity: A workshop report. *Regulat Toxicol Pharmacol* 2000; 31:190–199.

Friedman JM, Kimmel CA. Teratology Society 1998 public affairs committee symposium: The new thalidomide era: Dealing with the risks. *Teratology* 1999; 59:120–123, 1999.

Breen JG, Claggett TW, Kimmel GL, Kimmel CA. Heat shock during rat embryo development *in vitro* results in alteration of the cell cycle and abundant cell death. *Reprod Toxicol* 1999; 13:31–39.

Weller E, Long N, Smith A, Williams P, Ravi S, Gill J, Hennessey R, Skornik W, Brain J, Kimmel C, Kimmel G, Holmes L, Ryan L. Dose-rate effects of ethylene oxide exposure on developmental toxicity. *Toxicol Sci* 1999; 50:259–270.

Haber LT, Allen BC, Kimmel CA. Non-cancer risk assessment for nickel compounds: Issues associated with dose-response modeling of inhalation and oral exposures. *Toxicol Sci* 1998; 43:213–229.

Kimmel CA. Introduction to the symposium. *Reprod Toxicol* 1997; 11:261–263.

Bishop JB, Kimmel CA. Molecular and cellular mechanisms of early mammalian development: An overview of NIEHS/EPA developmental toxicity workshops. *Reprod Toxicol* 1997; 11:285–291.

Dellarco VL, Kimmel CA. Risk assessment of environmental agents for developmental toxicity: Current and emerging approaches. *Mutat Res* 1997; 396:205–218.

Kimmel CA, Schwetz BA. Evolution and progress in safety assessment for developmental and reproductive toxicity. *Toxicol Pathol* 1997; 25:664–667.

Kimmel CA, Neumann DA. Accounting for susceptibility in risk assessment: Current practice and new directions. *Environ Toxicol Pharmacol* 1997; 4:189–194.

Wise LD, Beck SL, Beltrame D, Beyer BK, Chahoud I, Clark RL, Clark R, Druga AM, Feuston MH, Guittin P, Henwood SM, Kimmel CA, Lindstrom P, Palmer AK, Petrere JA, Solomon HM, Yasuda M, York RG. Terminology of developmental abnormalities in common laboratory mammals (version 1). *Teratology* 1997; 55:248–291.

Kimmel CA. Developmental toxicity risk assessment: Consensus building, hypothesis formulation, and focused research. *Drug Metab Rev* 1996; 28(1&2):85–103.

Kimmel CA. Reproductive and developmental effects of diethylene and triethylene glycol (methyl-, ethyl-) ethers. *Occup Hyg* 1996; 2:131–151.

Kimmel CA, Kavlock RJ, Allen BC, Faustman EM. The application of benchmark dose methodology to data from prenatal developmental toxicity studies. *Toxicol Lett* 1995; 82/83:549–554.

George JD, Price CJ, Tyl RW, Marr MC, Kimmel CA. The evaluation of the developmental toxicity of hydrochlorothiazide in mice and rats. *Fundam Appl Toxicol* 1995; 26:174–180.

Barnes DG, Daston GP, Evans JS, Jarabek AM, Kavlock RJ, Kimmel CA, Park C, Spitzer HL. Benchmark dose workshop: Criteria for use of a benchmark dose to estimate a reference dose. *Regul Toxicol Pharmacol* 1995; 21:296–306.

Kavlock RJ, Allen BC, Kimmel CA, Faustman EM. Dose-response assessment for developmental toxicity: IV. Benchmark doses for fetal weight changes. *Fundam Appl Toxicol* 1995; 26:211–222.

Moore JA, Daston GP, Faustman E, Golub MS, Hart WL, Hughes C, Jr., Kimmel CA, Lamb JC, IV, Schwetz BA, Scialli AR. An evaluative process for assessing human reproductive and developmental toxicity of agents. *Reprod Toxicol* 1995; 9:61–95.

Faustman EM, Allen BC, Kavlock RJ, Kimmel CA. Dose-response assessment for developmental toxicity: I. Characterization of data base and determination of NOAELs. *Fundam Appl Toxicol* 1994; 23:478–486.

Allen BC, Kavlock RJ, Kimmel CA, Faustman EM. Dose-response assessment for developmental toxicity: II. Comparison of generic benchmark dose estimates with NOAELs. *Fundam Appl Toxicol* 1994; 23:487–495.

Allen BC, Kavlock RJ, Kimmel CA, Faustman EM. Dose-response assessment for development toxicity: III. Statistical models. *Fundam Appl Toxicol* 1994; 23:496–509.

DeSesso JM, Holson JF, Harris SB, Hendrickx AG, Kimmel CA, Kimmel GL, Scott WJ, Jr., Skalko RG. Letter to the Editor: On the subject of incorrect terminology. *J Am Coll Toxicol* 1994; 13:321–325.

Kimmel CA. Approaches to evaluating reproductive hazards and risks. *Environ Health Perspect* 1993; Suppl 101 (Suppl. 2):137–143.

Beck BD, Conolly RB, Dourson ML, Guth D, Hattis D, Kimmel C, Lewis S. Symposium Overview: Improvements in quantitative noncancer risk assessment. *Fundam Appl Toxicol* 1993; 20:1–14.

Kimmel CA, Cuff JM, Kimmel GL, Heredia DJ, Tudor N, Silverman PM, Chen J. Skeletal development following heat exposure in the rat. *Teratology* 1993; 47:229–242.

Kimmel GL, Cuff J, Kimmel CA, Heredia D, Tudor N, Silverman PM. Embryonic development in vitro following short-duration exposure to heat. *Teratology* 1993; 47:243–251.

Cuff JM, Kimmel GL, Kimmel CA, Heredia DJ, Tudor N, Chen J. The relationship between abnormal somite development and thoracic skeletal defects in rats following heat exposure. *Teratology* 1993; 48:259–266.

Kimmel CA, Generoso WM, Thomas RD, Bakshi KS. A new frontier in understanding the mechanisms of developmental abnormalities. *Toxicol Appl Pharmacol* 1993; 119:159–165.

Catalano PJ, Scharfstein DO, Ryan LM, Kimmel CA, Kimmel GL. A statistical model for fetal death, fetal weight, and malformation in developmental toxicity studies. *Teratology* 1993; 47:281–290.

Schwetz BA, Price CJ, George JD, Kimmel CA, Morrissey RE, Marr MC. The developmental toxicity of diethylene and triethylene glycol dimethyl ethers in rabbits. *Fundam Appl Toxicol* 1992; 19:238–245.

George JD, Price CJ, Marr MC, Kimmel CA, Schwetz BA, Morrissey RE. The developmental toxicity of ethylene glycol diethyl ether in mice and rabbits. *Fundam Appl Toxicol* 1992; 19:15–25.

Ryan LM, Catalano PJ, Kimmel CA, Kimmel GL. On the relationship between fetal weight and malformation in developmental toxicity studies. *Teratology* 1991; 44:215–223.

Williams J, Price CJ, Sleet RB, George JD, Marr MC, Kimmel CA, Morrissey RE. Codeine: Developmental toxicity in hamsters and mice. *Fundam Appl Toxicol* 1991; 16:401–413.

Kimmel CA. Aspetti normativi della teratologia comportamentale. [Regulatory issues for behavioral teratology.] *Rassegna Clinico-Scientifica* 1990; 66:131–133, 1990.

Kimmel CA. Quantitative approaches to human risk assessment for noncancer health effects. *Neurotoxicology* 1990; 11:189–198.

Lindstrom P, Morrissey RE, George JD, Price CJ, Marr MC, Kimmel CA, Schwetz BA. The developmental toxicity of orally administered theophylline in rats and mice. *Fundam Appl Toxicol* 1990; 14:167–178.

Kimmel CA, Kimmel GL, Francis EZ, Chitlik LD. An overview of the U.S. EPA's proposed amendments to the guidelines for the health assessment of suspect developmental toxicants. *J Am Coll Toxicol* 1990; 9:39–47, 1990.

Rees DC, Francis EZ, Kimmel CA. Scientific and regulatory issues relevant to assessing risk for developmental neurotoxicity: An overview. *Neurotoxicol Teratol* 1990; 12:175–181.

Francis EZ, Kimmel CA, Rees DC. Workshop on the qualitative and quantitative comparability of human and animal developmental neurotoxicity: Summary and implications. *Neurotoxicol Teratol* 1990; 12:285–292.

Rees DC, Francis EZ, Kimmel CA. Qualitative and quantitative comparability of human and animal developmental neurotoxicants: A workshop summary. *Neurotoxicology* 1990; 11:257–270.

Kimmel CA. Perspectives on the concern for and management of prenatal chemical exposure and postnatal effects. *Ann NY Acad Sci* 1989; 562:1–2.

Kimmel CA. Book review: *Developmental toxicology: Mechanisms and risk*. *Qtrly Rev Biol* 1989; 64:240.

Kimmel CA, Wellington DG, Farland W, Ross P, Manson JM, Chernoff N, Young JF, Selevan SG, Kaplan N, Chen C, Chitlik LD, Siegel-Scott CL, Valaras G, Wells S. Overview of a workshop on quantitative models for developmental toxicity risk assessment. *Environ Health Perspect* 1989; 79:209–215.

Faustman EM, Wellington DG, Smith WP, Kimmel CA. Characterization of a developmental toxicity dose-response model. *Environ Health Perspect* 1989; 79:229–241.

Sullivan Jones PA, Kimmel CA, Kimmel GL. Prenatal reserpine exposure alters cardiovascular parameters in rat offspring. *Fundam Appl Toxicol* 1989; 13:652–661.

Kimmel CA, Stratmeyer ME, Galloway WD, Brown NT, LaBorde JB, Bates HK. Developmental exposure of mice to pulsed ultrasound. *Teratology* 1989; 40:387–393.

Kimmel CA, Gaylor DW. Issues in qualitative and quantitative risk analysis for developmental toxicology. *J Risk Anal* 1988; 8:15–20.

Tyl RW, Price CJ, Marr MC, Kimmel CA. Developmental toxicity evaluation of Bendectin in CD rats. *Teratology* 1988; 37:539–552.

Tyl RW, Price CJ, Marr MC, Kimmel CA. Developmental toxicity evaluation of dietary di(2-ethylhexyl)phthalate in Fischer 344 rats and CD-1 mice. *Fundam Appl Toxicol* 1988; 10:395–412.

Kimmel CA. The evaluation of behavioral teratogenic effects. *Cong Anom* 1987; 27:139–146.

George JD, Price CJ, Kimmel CA, Marr MC. The developmental toxicity of triethylene glycol dimethyl ether in mice. *Fundam Appl Toxicol* 1987; 9:173–181.

Kimmel GL, Kimmel CA, Francis EZ. Implications of the consensus workshop on the evaluation of maternal and developmental toxicity. *Teratogen Carcinogen Mutagen* 1987; 7:329–338.

Price CJ, Kimmel CA, George JD, Marr MC. The developmental toxicity of diethylene glycol dimethyl ether in mice. *Fundam Appl Toxicol* 1987; 8:115–126.

Morrissey RE, George JD, Price CJ, Tyl RW, Marr MC, Kimmel CA. The developmental toxicity of bisphenol A in rats and mice. *Fundam Appl Toxicol* 1987; 8:571–582.

Morrissey RE, Tyl RW, Price CJ, Ledoux TA, Reel JR, Paschke LL, Marr MC, Kimmel CA. The developmental toxicity of orally administered oxytetracycline in rats and mice. *Fundam Appl Toxicol* 1986; 7:434–443.

Mirkes PE, Kimmel CA. Hyperthermia, thermotolerance, heat shock proteins, and birth defects. *Teratogen Carcinogen Mutagen* 1986; 6:521–522.

Kimmel CA. Transplacental carcinogenesis and teratogenic agents in the workplace. In: Report of the Special Grand Rounds on Women at Work. Interagency Education Program Liaison Group, Task Force on Environmental Cancer and Heart and Lung Disease, Health Resources and Services Administration, October 23, 1985.

Price CJ, Kimmel CA, Tyl RW, Marr MC. The developmental toxicity of ethylene glycol in rats and mice. *Toxicol Appl Pharmacol* 1985; 81:113–127.

Kwarta RF, Jr., Kimmel CA, Kimmel GL, Slikker W, Jr. Identification of the cellular retinoic acid binding protein (cRABP) within the embryonic mouse (CD-1) limb bud. *Teratology* 1985; 32:103–111.

Kimmel CA, Price CJ. Conducting developmental toxicity studies. Proceedings, Asian Congress of Pharmacology, 1985.

Adams J, Buelke-Sam J, Kimmel CA, Nelson CJ, Miller DR. Collaborative behavioral teratology study: Preliminary research. *Neurobeh Toxicol Teratol* 1985; 7:555–578.

Adams J, Buelke-Sam J, Kimmel CA, Nelson CJ, Reiter LW, Sobotka TJ, Tilson HA, Nelson BK. Collaborative behavioral teratology study: Protocol design and testing procedures. *Neurobeh Toxicol Teratol* 1985; 7:579–586.

Adams J, Oglesby DM, Ozemek HS, Rath J, Kimmel CA, Buelke-Sam J. Collaborative behavioral teratology study: Programmed data entry and automated test systems. *Neurobeh Toxicol Teratol* 1985; 7:547–554.

Buelke-Sam J, Kimmel CA, Adams J, Nelson CJ, Vorhees CV, Wright DC, St Omer V, Korol BA, Butcher RE, Geyer MA, Holson JF, Kutscher CL, Wayner MJ. Collaborative behavioral teratology study: Results. *Neurobeh Toxicol Teratol* 1985; 7:591–624.

Kimmel CA, Buelke-Sam J. Collaborative behavioral teratology study: Background and overview. *Neurobeh Toxicol Teratol* 1985; 7:541–545.

Kimmel CA, Buelke-Sam J, Adams J. Collaborative behavioral teratology study: Implications, current applications and future directions. *Neurobeh Toxicol Teratol* 1985; 7:669–673.

Nelson CJ, Felton RP, Kimmel CA, Buelke-Sam J, Adams J. Collaborative behavioral teratology study: Statistical approach. *Neurobeh Toxicol Teratol* 1985; 7:587–590.

Holson R, Adams J, Buelke-Sam J, Gough B, Kimmel CA. d-Amphetamine as a behavioral teratogen: Effects depend on dose, sex, age and task. *Neurobeh Toxicol Teratol* 1985; 7:753–758.

Buelke-Sam J, Kimmel CA, Adams J (eds). Design considerations in screening for behavioral teratogens: Results of the collaborative behavioral teratology study. *Neurobeh Toxicol Teratol* 1985; 7(6):537–789.

Kimmel CA, Kimmel GL, White CG, Grafton TF, Young JF, Nelson CJ. Blood flow changes in the pregnant rat in response to caffeine and associated conceptual development. *Fundam Appl Toxicol* 1984; 4:240–247.

Buelke-Sam J, Sullivan PA, Kimmel CA and Nelson CJ. Sex and strain differences in the developmental activity profile of the rat tested over clean vs. home cage bedding. *Dev Psychobiol* 1984; 17:67–77.

Goad PT, Hill DE, Slikker W, Jr., Kimmel CA, Gaylor DW. The role of maternal diet in the developmental toxicology of ethanol. *Toxicol Appl Pharmacol* 1984; 73:256–267.

Buelke-Sam J, Kimmel CA, Nelson CJ, Sullivan PA. Sex and strain differences in the developmental activity profile of rats prenatally exposed to sodium salicylate. *Neurobeh Toxicol Teratol* 1984; 6:171–175.

Buelke-Sam J, Kimmel GL, Webb PJ, Slikker W, Jr., Newport GD, Nelson CJ, Kimmel CA. Postnatal toxicity following prenatal reserpine exposure in rats: Effects of dose and dosing schedule. *Fundam Appl Toxicol* 1984; 4:983–991.

Oakley GP, Jr., Wolkowski-Tyl R, Broman SH, Collins TF, Kimmel CA, Marks TA. Reproduction/teratology panel report. In: Report on the consensus workshop on formaldehyde. *Environ Health Perspect* 1984; 58:323–381.

Kimmel CA, Stratmeyer ME, Galloway WD, LaBorde JB, Brown N, Pinkavitch F. An evaluation of the embryotoxic potential of ultrasound exposure in pregnant ICR mice. *Teratology* 1983; 27:245–251.

Kimmel CA, Young JF. Correlating pharmacokinetics and teratogenic endpoints. *Fundam Appl Toxicol* 1983; 3:250–255.

Adams JA, Buelke-Sam J, Kimmel CA, LaBorde JB. Behavioral alterations in rats prenatally exposed to low doses of d-amphetamine. *Neurobehav Toxicol Teratol* 1982; 4:63–70.

Byrd RA, Young JF, Kimmel CA, Morris MD, Holson JF. Computer simulation of mirex pharmacokinetics in the rat. *Toxicol Appl Pharmacol* 1982; 66:182–192.

Byrd RA, Kimmel CA, Morris MD, Holson JF, Young JF. Altered pattern of prenatal toxicity in rats due to different treatment schedules with Mirex. *Toxicol Appl Pharmacol* 1981; 60:213–219.

Kimmel CA, Trammell C. A rapid procedure for routine staining of cartilage and bone in fetal and adult animals. *Stain Technol* 1981; 56:271–273.

Kimmel CA, Grant LD, Sloan CS, Gladen BC. Chronic low-level lead toxicity in the rat. I. Maternal toxicity and perinatal effects. *Toxicol Appl Pharmacol* 1980; 56:28–41.

Grant LD, Kimmel CA, West GL, Martinez-Vargas CM, Howard JL. Chronic low-level lead toxicity in the rat. II. Effects on postnatal physical and behavioral development. *Toxicol Appl Pharmacol* 1980; 56:42–58.

Fowler BA, Kimmel CA, Woods JS, McConnell EE, Grant LD. Chronic low-level lead toxicity in the rat. III. An integrated approach to the assessment of long-term lead toxicity with special reference to the kidney. *Toxicol Appl Pharmacol* 1980; 56:59–77.

LaBorde JB, Kimmel CA. The teratogenicity of ethylene oxide administered intravenously to mice. *Toxicol Appl Pharmacol* 1980; 56:16–22.

Buelke-Sam J, Kimmel CA. Development and standardization of screening methods for behavioral teratology. *Teratology* 1979; 20:17–30.

Faith RE, Luster MI, Kimmel CA. Effects of chronic developmental lead exposure on cell-mediated immune functions. *Clin Exp Immunol* 1978; 35:413–420.

Luster MI, Faith RE, Kimmel CA. Humoral antibody response in rats following developmental lead exposure. *J Environ Pathol Toxicol* 1978; 1:397–402.

Kimmel CA. Letter to the Editor: Placental passage of hexachlorophene. *Toxicol Appl Pharmacol* 1978; 45:635.

Dietz DD, McMillan DE, Grant LD, Kimmel CA. Effects of lead on temporally-spaced responding in rats. *Drugs Chem Toxicol* 1978; 1:401–419.

Kimmel CA. Effects of route of administration on the toxicity and teratogenicity of EDTA in the rat. *Toxicol Appl Pharmacol* 1977; 40:299–306.

Kimmel CA, Cook RO, Staples RE. Teratogenic potential of noise in mice and rats. *Toxicol Appl Pharmacol* 1976; 36:239–245.

Kimmel CA. Behavioral teratology: Overview. *Environ Health Perspect* 1976; 18:73.

Kimmel CA, Moore W, Hysell DK, Stara JF. Teratogenicity of hexachlorophene in rats. Comparison of uptake following various routes of administration. *Arch Environ Health* 1974; 28:43–48.

Kimmel CA, Butcher RE, Vorhees CV, Schumacher HJ. Metal-salt potentiation of salicylate-induced teratogenesis and behavioral changes in rats. *Teratology* 1974; 10:293–300.

Kimmel CA, Wilson JG. Skeletal deviations in rats: Malformations or variations? *Teratology* 1973; 8:309–316.

Butcher RE, Brunner RL, Roth T, Kimmel CA. A learning impairment associated with maternal hypervitaminosis-A in rats. *Life Sci* 1972; 11:141–145.

Butcher RE, Vorhees CV, Kimmel CA. Learning impairment from maternal salicylate treatment in rats. *Nature* 1972; 236:211–212.

Kimmel CA, Moore W, Stara JF. Hexachlorophene teratogenicity in rats. *Lancet* 1972; 2:765.

Kimmel CA, Wilson JG, Schumacher HJ. Studies on metabolism and identification of the causative agent in aspirin teratogenesis in the rat. *Teratology* 1971; 4:15–24.

Published Abstracts of Presentations

Kimmel CA. The National Children's Study: Planning and implementation. *Birth Defects Res, Part A*, 2006; 76:351.

Davis JR, Jr., Laessig SA, Kimmel CA. Pentachlorophenol: Comparison of animal and human reproductive and developmental toxicity. *Birth Defects Res, Part A*, 2006; 76:385.

Thomas TW, Kimmel CA. Interactions with the TGF- α signaling pathway: A key mechanism of developmental toxicity? *Society of Toxicology*, 2005.

Thomas TW, Kimmel CA. Interactions of environmental toxicants with the TGF β signalling pathway: A potential causal mechanism for improving health risk assessment for children. Presented at the Teratology Society, Vancouver, BC, Canada, June 2004.

Wheeler KE, Kimmel GL, Claggett TW, Kimmel CA. The progressive effects of heat stress on somitogenesis and other developing tissues in the rat. Presented at the Teratology Society, Vancouver, BC, Canada, June 2004.

Kimmel C, Abbott B. The National Children's Study: Progress developing methods appropriate for assessing children's exposure, biomarkers and genetic susceptibility. *Society of Toxicology*, Baltimore, MD, March 25, 2004.

Harrouk WA, Wheeler KE, Kimmel GL, Kimmel CA. Cumulative risk of hyperthermia and boric acid (BA) effects on the developing axial skeleton of the rat. *Birth Defects Res Part A Clin Mol Teratol* 2003; 67(5):323.

Dugyala RR, Claggett TW, Kimmel GL, Kimmel CA. Initial evaluation of the effect of geldanamycin (GA) on heat-induced developmental alterations in gestation Day (gd) 10 rat embryos *in vitro*. *Teratology Society*, Scottsdale, AZ, 2002.

Tabacova S, Kimmel CA, McCloskey CA. Adverse developmental events reported to FDA in association with prenatal exposure to two antihypertensive agents. *Charting the Course: 1st CDC Conference on Birth Defects, Developmental Disabilities, and Disability and Health*, Atlanta, GA, September 17–19, 2002.

Harrouk WA, Rosen MB, Fenton SE, Schmid JE, Kimmel GL, Kimmel CA. Effects of single components (hyperthermia & boric acid) and mixtures on mid-organogenesis stage rat embryos using microarray analysis. *Society of Toxicology*, Nashville, TN, March 2002.

Laessig SA, Tabacova S, Kimmel CA. Evaluation of human developmental toxicity following pesticide exposure. *Society of Toxicology*, Nashville, TN, March 2002.

Tabacova S, Kimmel CA, Wall K, McCloskey CA. Animal-human concordance in the developmental toxicity of two antihypertensive agents. Teratology Society, Scottsdale, AZ, 2002.

Kimmel CA, for the Longitudinal Cohort Study (LCS) Interagency Coordinating Committee. The longitudinal cohort study of environmental effects on child health and development. Teratology 2001; 63(6):259.

Tabacova S, McCloskey CA, Kimmel CA. Antihypertensive drugs and adverse outcomes of pregnancy reported to FDA. Presented at OTIS, Montreal, Canada, June 23–26, 2001.

Kimmel CA. Developmental immunotoxicity considerations in testing and risk assessment for children's health. Presented at The Developing Immune System: A Sensitive Target for Perturbation by Xenobiotics, Society of Toxicology, San Francisco, CA, March 25–29, 2001.

Harrouk WA, Kimmel CA, Kimmel GL. Interaction of hyperthermia and boric acid *in vivo* in gestational day (GD) 10 in rats. Teratology 2001; 63(6):276.

Harrouk W, Kimmel GL, Kimmel CA. Effects of hyperthermia and boric acid on embryonic development singly and in combination. Toxicologist 2001; 60(1):222.

Tabacova S, McCloskey CA, Kimmel CA. Adverse pre- and postnatal events reported to FDA in association with maternal atenolol treatment in pregnancy. Teratology 2001; 63(6):256.

Tabacova S, Tsong Y, Kimmel CA. Adverse birth outcomes associated with maternal enalapril antihypertensive treatment. Congress of Epidemiology 2001, Toronto, Canada, June 13–16, 2001.

Kimmel CA. The ability of EPA's testing guidelines to predict potential human developmental neurotoxicity. Neurotoxicology 2000; 21(1–2):252.

Kimmel CA, Tabacova S. Risk assessment for reproductive toxicity. International Society of Environmental Epidemiology, 12th Conference, Buffalo, NY, August 19–23, 2000. Abstracts, p. 187.

Kimmel C, Rice D (co-chairs). Workshop on Interpretation of data on developmental neurotoxicity. Teratology Society, West Palm Beach, FL, June 24–29, 2000.

Tabacova S, Kimmel CA. Use of case reports in assessing adverse outcomes of human prenatal drug exposures: An approach. Teratology 2000; 61:472.

Euling S, Wilson EM, Kemppainen JA, Gennings C, Kelce WR, Kimmel CA. The effect of developmental stage on the response to endocrine disrupting chemicals. Presented at Toxicology and Risk Assessment Approaches for the 21st Century, Kings Island, OH, April 10–13, 2000.

Selevan SG, Kimmel CA, Mendola P. Identifying critical windows of exposure for children's health. *Teratology* 2000; 61:448.

Tabacova S, Vega A, McCloskey C, Kimmel CA. Enalapril exposure during pregnancy: Adverse developmental outcomes reported to FDA. *Teratology* 2000; 61:520.

Kimmel CA. An additional ten-fold safety factor for children: Is this needed? Presentation at the Society of Toxicology Issues Session, New Orleans, LA, March 18, 1999.

Euling S, Kimmel CA. Cumulative risk assessment for developmental toxic agents. *Teratology* 1999; 59(6):384.

Kimmel CA, Claggett TW, Kimmel GL, Dugyala RR, Stratmeyer ME. The response to hyperthermia in the GD10 rat embryo is dependent on the pattern of temperature increase. *Teratology* 1999; 59(6):383.

Kimmel CA. Developmental toxicity testing and risk assessment of pesticides. *Hum Exp Toxicol* 1998; 17(9):487.

Dugyala RR, Claggett TW, Kimmel GL, and Kimmel CA. Hyperthermic stress *in vitro* modulates HSP90 and p53 expression but not HSP90 in gestation day 10 rat embryos. *Teratology* 1998; 57:224, 1998.

Huang IY, Weller E, Ryan L, Holmes LB, Kimmel CA, Kimmel GL. Expression of microphthalmia and anophthalmia due to gestational exposure of ethylene oxide (EtO). *Teratology* 1998; 57:231.

Haber LT, Allen BC, Kimmel CA. Issues related to benchmark dose modeling. *Society for Risk Analysis*, December 1997.

Kimmel CA, Andersen ME. Advancing the scientific basis for risk assessment. *Toxicologist* 1997; 36:286.

Breen JG, Claggett TW, Kimmel GL, Kimmel CA. Hyperthermia-induced alterations of cell proliferation and cell death during rat embryo development. *Toxicologist* 1997; 36:99–100.

Breen JG, Claggett TW, Kimmel GL, Kimmel CA. Protein Kinase N (PKN) nuclear translocation: An early biomarker of hyperthermic stress during rat embryo development. *Teratology* 1997; 55:50.

Knudsen TB, Charlap JH, Wubah JA, Razmara M, Kimmel CA, Kimmel GL, Kavlock RJ, Lau C, Setzer RW. Comparison of p53 protein induction in early mouse embryos following different environmental stresses. *Teratology* 1997; 55:33.

Knudsen TB, Nguyen D, Wubah JA, Razmara M, Kimmel CA, Kimmel GL, Kavlock RJ, Setzer RW, Lau C. Cross-species comparison of 2-chloro-2U-deoxyadenosine (2-CdA) pharmacokinetics in pregnant mouse and rat. *Teratology* 1997; 55:69.

Wubah JA, Kimmel CA, Kimmel GL, Kavlock RJ, Lau C, Setzer RW, Knudsen TB. Pax6 expression, a biomarker of teratogen-induced abnormalities of the eye. *Teratology* 1997; 55:33.

Brain J, Earley N, Hennessey R, Holmes L, Kimmel C, Kimmel G, Long N, Ryan L, Skornick W, Smith A, Weller E, Williams P. A study of dose-rate effects of inhaled ethylene oxide in pregnant C57Bl mice. *Teratology* 1996; 53:97.

Kimmel CA, Siegel M, Crisp TM, Chen CW. Benchmark concentration (BMC) analysis of 1,3-butadiene (BD) reproductive and developmental effects. 1996; *Toxicologist* 30:146.

Kimmel GL, Claggett TW, Kimmel CA, Rojko JL, Tudor N. Early effects of heat stress on somitogenesis in the rat. *Teratology* 1996; 53:113–114.

Claggett TW, Kimmel GL, Kimmel CA, Bolon B, Tudor N. A histological evaluation of the effects of heat stress on somitogenesis in the rat. National Society for Histotechnology, Buffalo, NY, October 7–13, 1995.

Kimmel GL, Claggett TW, Kimmel CA, Bolon B, Tudor N. The progression of effects of heat stress on somitogenesis in the rat. *Teratology* 1995; 51:157–158.

Kimmel CA, Claggett TW, Kimmel GL, Tudor N, Hogan KA. Segmentation anomalies and stress proteins induced by heat on gestation days (GD) 10, 11 or 12 in the rat. FDA Science Forum on Regulatory Sciences, Sheraton Hotel, Washington, DC, September 29–30, 1994.

Kimmel CA, Claggett TW, Kimmel GL, Tudor N, Hogan KA. Segmentation anomalies and stress proteins induced by heat on gestation days (GD) 10, 11 or 12 in the rat. *Teratology* 1994; 49:409.

Kimmel GL, Williams PL, Kimmel CA, Claggett TW, Tudor N. The effects of temperature and duration of exposure on in vitro development and response-surface modelling of their interaction. *Teratology* 1994; 49:366–367.

Williams PL, Scharfstein DO, Kimmel GL, Kimmel CA. Incorporating duration of exposure into quantitative risk assessment for developmental toxicity. *Teratology* 1994; 49:367.

Allen B, Kavlock RJ, Kimmel CA, Faustman EM. Comparison of quantitative dose-response modeling approaches for evaluating fetal weight changes in segment II developmental toxicity studies. *Teratology* 1993; 47:394.

Catalano PJ, Scharfstein DO, Ryan LM, Kimmel CA, Kimmel GL. A statistical model for fetal death, fetal weight, and malformation in developmental toxicity studies. *Teratology* 1993; 47:395.

Kimmel GL, Williams PL, Ryan LM, Kimmel CA, Tudor N. The effects of temperature and duration of exposure on *in vitro* development and response-surface modeling of their interaction. *Teratology* 1993; 47:401.

Faustman EM, Allen BC, Van Landingham C, Howe RB, Kavlock RJ, Kimmel CA. Quantitative risk assessment approaches for developmental toxicity alternatives to the NOAEL values. VI International Congress of Toxicology, Rome, Italy, June 28–July 3, 1992.

Gilbert S, Kimmel CA. Risk assessment from developmental data. Workshop at the Teratology Society meeting, June 27–July 2, 1992.

Goering PL, Fisher BR, Kimmel CA, Kimmel GL. Stress proteins as biomarkers of toxicity. Presented at the NATO Advanced Research Workshop on Use of Biomarkers in Assessing Health and Environmental Impacts of Chemical Pollutants, Luso, Portugal, June 1–5, 1992.

Allen BC, Van Landingham C, Howe RB, Kavlock RJ, Kimmel CA, Faustman EM. Dose-response modeling for developmental toxicity. *Toxicologist* 1992; 12:300.

Kimmel GL, Cuff JM, Kimmel CA, Heredia DJ, Brown NT, Silverman PM. The effects of elevated temperature and exposure duration on embryonic development *in vitro*. *Teratology* 1992; 45:473.

Allen BC, Van Landingham C, Howe RB, Kavlock RJ, Kimmel CA, Faustman EM. Comparison of approaches to risk assessment for developmental toxicants. Society for Risk Analysis, Baltimore, December 8, 1991.

Kimmel CA. Approaches to assessing reproductive hazards and risks. WHO Workshop on Impact of Environment on Reproductive Health, Copenhagen, Denmark, September 30–October 4, 1991.

Fisher BR, Kimmel GL, Kimmel CA, Heredia DJ. The association of heat-induced alterations in protein synthesis with somite defects in rat embryos. *Teratology* 1991; 43:465.

Kimmel CA, Kimmel GL, Lu C, Heredia DJ, Fisher BR, Brown NT. Stress protein synthesis as a potential biomarker for heat-induced developmental toxicity. *Teratology* 1991; 43:465.

Ryan LM, Catalano PJ, Kimmel CA, Kimmel GL. A statistical model for fetal weight and malformation in developmental toxicity studies. *Teratology* 1991; 43:435–436.

Kimmel CA. Methods of risk assessment applied to developmental toxicity. *Teratology* 1990; 42:15A.

Bates HK, Price CJ, George JD, Marr MC, Kimmel CA, Morrissey RE, Schwetz BA. Postnatal effects of *in utero* exposure to ethylene glycol (EG) in the CD rat. *Toxicologist* 1990.

Cuff JM, Kimmel CA, Kimmel GL, Heredia DJ, Brown NT. Correlation of altered somite morphology with effects of heat stress on the rat axial skeleton. *Teratology* 1990; 41:546.

Kimmel GL, Kimmel CA, Zenick H. Reproductive and developmental toxicity risk assessment for short-term exposure to ethylene oxide (EtO). *Toxicologist* 1990.

Kimmel CA. EPA's amendments to the developmental toxicity risk assessment guidelines. Presented to the Teratology Society, June 1989.

Francis EZ, Kimmel CA. Proceedings of the workshop on the acceptability and interpretation of dermal developmental toxicity studies. *Teratology* 1989; 39:453.

Fisher BR, Kimmel GL, Kimmel CA. A rapid and sensitive method for separating proteins from individual rat embryos using gel electrophoresis. *Teratology* 1989; 39:452.

Price CJ, George JD, Sadler BM, Marr MC, Kimmel CA, Schwetz BA, Morrissey RE. Teratologic evaluation of corn oil (CO) or distilled water (DW) in CD-1 mice and CD rats. *Toxicologist* 1989; 9:269.

Kimmel CA, Price CJ, Sleet RB, George JD, Marr MC, Morrissey RE, Schwetz BA. Developmental effects of codeine in LVG hamsters and CD-1 mice. *Toxicologist* 1988; 8:240.

George JD, Price CJ, Marr MC, Kimmel CA, Morrissey RE, Schwetz BA. Developmental toxicity of scopolamine hydrobromide (SCOP) in rats and mice. *Toxicologist* 1988; 8:241.

George JD, Price CJ, Marr MC, Kimmel CA, Morrissey RE, Schwetz BA. Developmental toxicity of ethylene glycol diethyl ether (EGDE) in CD-1 mice and New Zealand white rabbits. *Teratology* 1988; 37:460.

Price CJ, George JD, Marr MC, Kimmel CA, Morrissey RE, Schwetz BA. Developmental toxicity evaluation of nitrofurazone (NF) in rabbits. *Toxicologist* 1988; 8:241.

Price CJ, George JD, Marr MC, Morrissey RE, Schwetz BA, Kimmel CA. Developmental toxicity of diethylene glycol dimethyl ether (diEGdiME) in New Zealand white rabbits. *Teratology* 1988; 37:483.

Sleet RB, George JD, Price CJ, Marr MC, Kimmel CA, Schwetz BA, Morrissey RE. Embryo/fetal development in CD-1 mice and New Zealand white rabbits exposed to diethylene glycol diethyl ether (DGDE). *Teratology* 1988; 37:494.

Kimmel CA. Quantitative approaches to developmental toxicity risk assessment. American College of Toxicology, December 8, 1987.

Faustman-Watts EM, Wellington DG, Smith WP, Kimmel CA. Characterization of a developmental toxicity dose-response model. Presented at the AAAS meeting, Chicago, IL, February 15, 1987.

Kimmel CA. Behavioral teratology update: Regulation. *Teratology* 1987; 35:7B–8B.

Faustman EM, Wellington DG, Smith WP, Kimmel CA. Responses of a developmental toxicity dose-response model with six test compounds. *Teratology* 1987; 35:67A.

Kimmel CA, Brown NT, Heredia DJ, Stratmeyer ME. Effects of heat stress on skeletal development in the rat. *Teratology* 1987; 35:36A–37A.

Kimmel CA, Stratmeyer ME, Galloway WD, Brown NT, LaBorde JB, Bates HK. Developmental exposure of mice to pulsed ultrasound. *Teratology* 1987; 35:54A.

Price CJ, George JD, Marr MC, Kimmel CA. Teratologic evaluation of nitrofurazone (NF) in CD-1 mice. *Toxicologist* 1987; 7:179.

Price CJ, Tyl RW, Marr MC, Sadler BM, Kimmel CA, Morrissey RE. Postnatal development and reproductive performance of Fischer 344 rats following maternal exposure to diethylhexyl phthalate (DEHP). *Toxicologist* 1987; 7:145.

Sleet RB, George JD, Price CJ, Marr MC, Kimmel CA, Schwetz BA. Conceptus development in mice and rats exposed to methyl dopa. *Toxicologist* 1987; 7:1.

Kimmel CA. Discussant. Banbury Center Conference on Mechanistic Approaches to Developmental Toxicology, Cold Spring Harbor, NY, October 19–22, 1986.

George JD, Price CJ, Tyl RW, Marr MC, Kimmel CA. Developmental toxicity of hydrochlorothiazide (HCTZ) in rats and mice. *Toxicologist* 1986; 6:90.

George JD, Price CJ, Marr MC, Kimmel CA. Developmental toxicity of theophylline (THEO) in mice and rats. *Teratology* 1986; 33:70C–71C.

Kimmel CA, Sullivan PA, Kimmel GL. Cardiovascular effects of prenatal reserpine exposure in rats. *Toxicologist* 1986; 6:203.

Kimmel CA, Price CJ, Ledoux TA, Reel JR, Marr MC. Developmental toxicity of gentian violet (GV) in rats and rabbits. *Teratology* 1986; 33:64C–65C.

Morrissey RE, Tyl RW, Price CJ, Ledoux TA, Reel JR, Paschke LL, Marr MC, Kimmel CA. Teratologic evaluation of oxytetracycline-HCl (OXT) in CD-1 mice and CD rats. *Toxicologist* 1986; 6:91.

Price CJ, Ledoux TA, Reel JR, Fisher PW, Paschke LL, Marr MC, Kimmel CA. Teratologic evaluation of phenol in rats and mice. *Teratology* 1986; 33:92C–93C.

Price CJ, Tyl RW, Marr MC, Kimmel CA. Teratologic evaluation of chlorpromazine (CPZ) in CD-1 mice and F344 rats. *Toxicologist* 1986; 6:91.

Kimmel CA. Results of the NCTR collaborative behavioral teratology study. American College of Toxicology meeting, Washington, November 1985.

Kimmel CA. Transplacental carcinogenesis and teratogenic agents in the workplace. Health Resources and Services Administration Grand Rounds, Rockville, October 1985.

Kimmel CA. Collaborative behavioral teratology study: Background. Symposium and Workshop, Design Considerations in Screening for Behavioral Teratogens: Results of the Collaborative Behavioral Teratology Study, Cincinnati, OH, September 3–6, 1985.

Kimmel CA. Collaborative behavioral teratology study: Overview of results. Symposium and Workshop, Design Considerations in Screening for Behavioral Teratogens: Results of the Collaborative Behavioral Teratology Study” Cincinnati, OH, September 3–6, 1985.

Kimmel CA. Current regulatory applicability of behavioral teratology testing. Symposium and Workshop, Design Considerations in Screening for Behavioral Teratogens: Results of the Collaborative Behavioral Teratology Study, Cincinnati, OH, September 3–6, 1985.

Stratmeyer ME, Kimmel CA, Galloway WD, LaBorde JB, Brown NT, Lu MH. Effect of ultrasound exposure in utero on fetal weight in ICR mice. Proceedings, 4th Meeting of the World Federation of Ultrasound in Medicine and Biology. Sydney, Australia, July 14–19, 1985.

Bates H, Filler R, Kimmel C. Developmental toxicity study of polydimethylsiloxane injection in the rat. *Teratology* 1985; 31:50A.

George JD, Price CJ, Marr MC, Kimmel CA. Teratogenicity of triethylene glycol dimethyl ether (TGDM) in mice. *Teratology* 1985; 31:53A.

George JD, Price CJ, Tyl RW, Marr MC, Kimmel CA. Developmental toxicity evaluation of bisphenol A (BPA) in rats and mice. *Toxicologist* 1985; 5(1):186.

Kearns GL, Hill DE, Sziszak T, Trang JM, Kimmel C, Young J. Theophylline/caffeine disposition in neonatal piglets. Southern Society for Pediatric Research, 1985.

Kimmel CA, Price CJ, Sader BM, Tyl RW, Gerling FS. Comparison of distilled water (DW) and corn oil (CO) vehicle controls from historical data for teratology studies. *Toxicologist* 1985; 5(1):185.

Price CJ, George JD, Marr MC, Kimmel CA. Teratogenicity of diethylene glycol dimethyl ether (DYME) in mice. *Teratology* 1985; 31:57A.

Buelke-Sam, Slikker W, Jr., Nelson CJ, Newport G, Adams J, Kimmel CA. Neurochemical responses to d-amphetamine in the periadolescent rat. *Int Soc Devel Psychobiol*, October 1984.

Kimmel CA. Behavioral teratology in experimental animals. Presented at the European Teratology Society Meeting. The Netherlands, September 1984.

Kimmel CA. Teratology: Research and policy issues. *Teratology* 1984; 29:41A–42A.

Kwarta RF, Jr., Kimmel CA, Kimmel GL, Slikker W, Jr. Identification of the cellular retinoic acid binding protein (CRABP) within the embryonic mouse (CD-1) limb bud. *Teratology* 1984; 29:43A.

Lu MH, Filler R, Bates HK, LaBorde JB, Bazare J, Jr., Gaylor DW, Kimmel CA. Teratogenicity evaluation of Sarin in rats. *Teratology* 1984; 29:45A.

Price CJ, Tyl RW, Marr MC, George JD, Kimmel CA. Developmental toxicity of carbon disulfide in rabbits and rats. *Toxicologist* 1984; 4:86.

Price CJ, Tyl RW, Marr MC, Kimmel CA. Teratologic evaluation of Bendectin in CD rats. *Teratology* 1984; 29:52A.

Price CJ, Tyl RW, Marr MC, Kimmel CA. Teratologic evaluation of ethylene glycol (EG) in CD rats and CD-1 mice. *Teratology* 1984; 29:52A.

Buelke-Sam J, Slikker WS, Jr., Newport G, Miller DR, Adams J, Kimmel CA. Neurochemical and behavioral responses to d-amphetamine in the periadolescent rat. Presented at the International Society for developmental Psychobiology Meeting, November 1983.

Kimmel CA, Adams J, Sullivan PA. Postnatal functional effects of prenatal caffeine exposure. Presented at the International Society for Developmental Psychobiology Meeting, November 1983.

Adams J, Kimmel CA, Buelke-Sam J. Intralaboratory data from a standardized behavioral teratology test battery. Presented at the European Teratology Society Meeting, August 1983.

Young JF, Kimmel CA. Pharmacokinetic parameters and teratogenic endpoints following prenatal caffeine exposure. *Toxicologist* 1983; 3(1):65.

Adams J, Kimmel CA, Buelke-Sam J, Miller DR, Nelson CJ. Behavioral assessment of rats treated prenatally with methylmercuric chloride (M). I. Physical and early behavioral characteristics. *Teratology* 1983; 27:27A.

Buelke-Sam J, Adams J, Kimmel CA, Miller DR, Nelson CJ. Behavioral assessment of rats treated prenatally with methylmercuric chloride (M). II. Activity, pharmacological challenge, and discrimination testing. *Teratology* 1983; 27:35A.

Buelke-Sam J, Kimmel GL, Slikker W, Jr., Kimmel CA. Evaluation of postnatal toxicity following prenatal reserpine (R): Effect of dose and dosing schedule. *Teratology* 1983; 27:35A.

Buelke-Sam J, Kimmel CA, Nelson CJ, Sullivan PA. Sex and strain differences in the developmental activity profile of rats prenatally exposed to sodium salicylate. *Neuroscience* 1983; 9:521.

Jones-Price C, Kimmel CA, Ledoux TA, Reel JR, Langhoff-Paschke L, Marr MC. Teratologic evaluation of diphenhydramine hydrochloride (DPH) in CD-1 mice. *Teratology* 1983; 27:53A.

Kimmel CA, Buelke-Sam J, Adams J, Reiter LW, Sobotka TJ, Tilson HA. An intralaboratory comparison of selected methods in a behavioral teratology protocol. *Teratology* 1983; 27:57A–58A.

Slikker W, Buelke-Sam J, Newport G, Adams J, Kimmel CA. Neurotransmitter ontogeny in the rat: Effects of prenatal methylmercury. Presented at the Neurochemistry Society meeting, 1983.

Wolkowski-Tyl R, Jones-Price C, Marr MC, Kimmel CA. Teratologic evaluations of L-5-hydroxytryptophan (HTP) in CD rats. *Teratology* 1983; 27:85A.

Wolkowski-Tyl R, Jones-Price C, Marr MC, Kimmel CA. Teratologic evaluations of diethylhexyl phthalate (DEHP) in Fischer 344 rats. *Teratology* 1983; 27:85A.

Wolkowski-Tyl R, Jones-Price C, Marr MC, Kimmel CA. Teratologic evaluations of diethylhexyl phthalate (DEHP) in CD-1 mice. *Teratology* 1983; 27:84A–85A.

Ozemek HS, Adams J, Oglesby DM, Rath J, Kimmel CA, Buelke-Sam J. A microcomputer-based system for detecting behavioral changes in rats exposed to toxicological agents. Presented at the Association for Advancement of Medical Instrumentation, May 9–12, 1982.

Ozemek HS, Adams J, Oglesby DM, Rath J, Buelke-Sam J, Kimmel CA. A microcomputer-controlled laboratory for the measurement of visual discrimination learning in rodents. Presented at the 10th Annual Northeast Bioengineering Conference, March 15–16, 1982.

Kimmel CA. Approaches to developing reliable and sensitive behavioural tests. *Teratology* 1982; 25:9A.

Adams J, Kimmel CA, Buelke-Sam J, Miller DR, Nelson CJ. Behavioral assessment of rats treated prenatally with low doses of d-amphetamine. I. Physical and early behavioral characteristics. *Teratology* 1982; 25:26A.

Buelke-Sam J, Kimmel CA, Adams J, Miller DR, Nelson CJ. Behavioral assessment of rats treated prenatally with low doses of d-amphetamine. II. Activity and pharmacological challenge testing. *Teratology* 1982; 25:30A–31A.

Goad PT, Hill DE, Slikker W, Jr., Kimmel CA, Young JF, Gaylor DW. The role of diet in the fetotoxicity, blood levels, and pharmacokinetics of ethanol in mice. Presented at the Southern Society for Pediatric Research, 1982.

Kimmel CA, Buelke-Sam J, Adams J, Reiter LW, Sobotka TJ, Tilson HA. Design considerations in the evaluation of standardized methods in a behavioral teratology protocol. *Teratology* 1982; 25:54A.

Kimmel CA, LaBorde JB, Trammell CT. Evaluation of cartilage and bone formation in fetal skeletons following prenatal insult reveals abnormalities not apparent in alizarin-stained specimens. *Teratology* 1982; 25:54A–55A.

Kimmel CA, LaBorde JB, Jones-Price C, Marks TA, Ledoux TA. Teratogenic evaluation of ethylene chlorohydrin (ECH) in mice and rabbits. *Toxicologist* 1982; 2:70.

Kimmel CA, White CG, Grafton TF, Nelson CJ, Kimmel GL. Effect of a single oral dose of caffeine during pregnancy on blood flow and subsequent embryo/fetal development in the rat. *Toxicologist* 1982; 2:70–71.

Kimmel CA, Lamb JC, IV, Hardin BD. Approaches to reproductive and developmental toxicology testing in the National Toxicology Program. *Arch Androl* 1982; 9:46–47.

LaBorde JB, Kimmel CA, Jones-Price C, Marks TA, Ledoux TA. Teratogenic evaluation of ethylene chlorohydrin (ECH) in mice and rabbits. *Toxicologist* 1982; 2:71.

Wolkowski-Tyl R, Jones-Price C, Kimmel CA, LeDoux T, Reel JR, Langhoff-Paschke L. Teratologic evaluation of sulfamethazine in CD rats. *Teratology* 1982; 25:81A–82A.

Kimmel CA. A practical approach for improving the predictability of risk for developmental toxicity. *Teratology* 1981; 23:46A.

Kimmel CA, Buelke-Sam J. Dose-related increase in blood pressure and vascular responsiveness following prenatal salicylate treatment in rats. *Toxicologist* 1981; 1:11–12.

Goad PT, Hill DE, Slikker W, Jr., Kimmel CA, Gaylor DW. The developmental effects of ethanol and the role of maternal nutrition. 1981; *Teratology* 24:54A–55A.

Goad PT, Slikker W, Jr., Kimmel CA, Gaylor DW, Hill DE. Maternal and fetal toxicity of ethanol: The role of altered nutrition. Southern Society for Pediatric Research, 1981.

Goad PT, Slikker W, Kimmel CA, Gaylor DW, Hill DE. Significance of altered nutrition in ethanol fetotoxicity. *Toxicologist* 1981; 1:28–29.

Buelke-Sam J, Kimmel CA. Developmental locomotor activity in rats over clean vs. home cage bedding. Presented at the Society of Neuroscience, November 1980.

Kimmel CA, Buelke-Sam J. Cardiovascular function following prenatal salicylate exposure to rats. *Teratology* 1980; 21:49A.

Holson JF, Kimmel CA, Young JF. The precision of pharmacokinetic parameters for predicting embryo-toxicity endpoints. Presented at the Society of Toxicology meeting, March 1980.

Kimmel CA, LaBorde JB. Teratogenic potential of ethylene oxide. *Teratology* 1979; 19:34A–35A.

Byrd RA, Holson JF, Kimmel CA, Morris MD, Young JF. Altered spectrum of embryotoxic effects in rats due to different treatment schedules with Mirex. *Teratology* 1979; 19:22A.

Young JF, Kimmel CA, Holson JF. Validation of a pharmacokinetic model for rat embryonal dosimetry of salicylates during a teratogenically susceptible period. *Toxicol Appl Pharmacol* 1979; 48:A121.

Young JF, Holson JF, Kimmel CA. Utilization of pharmacokinetic principles in extrapolation from animal data to man. Presented at the 39th International Congress of Pharmaceutical Sciences, Brighton, England, September, 1979.

Kimmel CA. Screening for behavioral teratogens. Presented to Behavioral Teratology Society, Mackinac Island, Michigan, 1978.

Kimmel CA, Grant LD, West GL, Martinez-Vargas CM, McConnell EE, Fowler BA, Woods JS, Howard JL. A multidisciplinary approach to the assessment of developmental toxicity associated with chronic lead exposure. *J Environ Path Toxicol* 1978; 2:218.

Kimmel CA, Grant LD, Fowler BA, McConnell EE, Woods JS. An integrated approach to the assessment of chronic lead toxicity. First International Congress of Toxicology, Toronto, Canada, 1977.

Grant LD, Kimmel CA, Martinez-Vargas CM, West GL. Assessment of developmental toxicity associated with chronic lead exposure. *Heavy Metals in the Environment IV*, May 24–25, 1976.

Kimmel CA, Grant LD, Sloan CS. Chronic lead exposure: Assessment of developmental toxicity. *Teratology* 1976; 13:27A–28A.

Kimmel CA. Fetal gonad dysgenesis following EDTA administration. *Teratology* 1975; 11:26A.

Kimmel CA, Sloan CS. Studies on the mechanism of EDTA teratogenesis. *Teratology* 1975; 12:330–331.

Kimmel CA, Cook RO, Staples RE. Teratogenic potential of noise in mice and rats. *Toxicol Appl Pharmacol* 1975; 33:123.

Kimmel CA, Moore W, Jr., Hysell DK, Stara JF. Hexachlorophene (HCP) teratogenicity in rats. *Teratology* 1973; 7(3):A-20, 1973.

Kimmel CA, Butcher RE, Schumacher HJ. Salicylates and nutrition. Pre- and postnatal effects. *Anat Rec* 1972; 172:345.

Kimmel CA, Schumacher HJ. Interrelationships between nutrients and salicylate teratogenicity. *Teratology* 1971; 4:233.

Books/Proceedings/Reports

Eskenazi B, Kimmel CA (guest eds). Mini-monograph: Lessons learned from the NIEHS/EPA Centers for Children's Health and Disease Prevention Research. *Environ Health Perspect* 2005; 113:1414–1471.

National Research Council. Evaluating chemical and other agent exposures for reproductive and developmental toxicity. Kimmel CA, chair. Subcommittee on Reproductive and Developmental Toxicity, Committee on Toxicology, Board on Environmental Studies and Toxicology. 262 pp. National Academy Press, 2001.

Selevan SG, Kimmel CA, Mendola P (eds). Identifying critical windows of exposure for children's health. *Environ Health Perspect* 2000; 108 (Suppl. 3):449–597.

Daston G, Kimmel C (eds). An evaluation and interpretation of reproductive endpoints for human health risk assessment. 103 pp. ILSI Press, Washington, DC, 1999.

Neumann DA, Kimmel CA (eds). Human variability in response to chemical exposures: measurement, modeling and risk assessment. 241 pp. CRC Press, Boca Raton, FL, 1998.

Kimmel CA, Buelke-Sam J (eds). *Developmental toxicology*. Raven Press, New York, 1994.

Kimmel CA (ed). Workshop report on developmental neurotoxic effects associated with exposure to PCBs. EPA/630/R-92/004, 1993.

Kimmel CA, Francis EZ. Proceedings of the workshop on the acceptability and interpretation of dermal developmental toxicity studies. *Fundam Appl Toxicol* 1990; 14:386–398, 1990.

Kimmel CA, Rees DC, Francis EZ (eds). Proceedings of the workshop on the qualitative and quantitative comparability of human and animal developmental neurotoxicity. *Neurotoxicol Teratol* 1990; 12(3):173–292, 1990.

Kimmel GL, Kimmel CA, Francis EZ (guest eds). Special issue: Evaluation of maternal and developmental toxicity. *Teratogen Carcinogen Mutagen* 1987; 7(3):201–338.

Kimmel CA, Kimmel GL, Frankos V (eds). Interagency regulatory liaison group workshop on reproductive toxicity risk assessment. *Environ Health Perspect* 1986; 66:193–221.

Kimmel CA, Holson JF, Hogue CJ, Carlo G. Reliability of experimental studies for predicting hazards to human development. National Center for Toxicological Research, Jefferson, AR. NCTR Technical Report for Experiment No. 601, 1984.

Kimmel CA, Buelke-Sam J (eds). Developmental toxicology. Raven Press, New York, 1981. 352 pp.

Book Chapters

Selevan SG, Kimmel CA, Mendola P. Windows of susceptibility to environmental exposures in children. pp. 17–25. In: Children's Health and the Environment: A Global Perspective. Pronczuk-Garbino J (ed), World Health Organization, Geneva, 2005.

Kimmel CA, Kimmel GL, Euling SY. Developmental and reproductive toxicity risk assessment for environmental agents. pp. 841–875. In: Developmental and Reproductive Toxicity: A Practical Approach. Hood RD (ed), CRC Press, Boca Raton, 2005.

Kimmel CA, King MD, Makris SL. Risk assessment perspectives for developmental immunotoxicity. pp. 45–63. In: Textbook of Developmental Immunotoxicology. Holladay SD (ed), Taylor and Francis, New York, 2004.

Kimmel CA. Overview of teratology. pp. 13.1.1–13.1.8. In: Current Protocols in Toxicology. Maines M, Costa LG, Reed DJ, Sassa S, and Sipes IG (eds), John Wiley & Sons, Inc., New York, 2000.

Kimmel CA, Buelke-Sam J. Reproductive and developmental toxicology. pp. 53–115. In: Patty's Industrial Hygiene and Toxicology, Fifth Edition. Bingham E (ed), John Wiley and Sons, Inc., New York, 2000.

Kimmel CA. Current approaches to risk assessment for developmental neurotoxicity. pp. 675–685. In: Handbook of Developmental Neurotoxicology. Chang LW, Slikker W (eds), Academic Press, San Diego, 1998.

Neumann DA, Kimmel CA. Human variability in susceptibility and response: Implications for risk assessment. pp. 219–241. In: Human Variability in Response to Chemical Exposures: Measurement, Modeling and Risk Assessment. Neumann DA, Kimmel CA (eds), CRC Press, Boca Raton, FL, 1998.

Grassman JA, Kimmel CA, Neumann DA. Accounting for variability in responsiveness in human health risk assessment. pp. 1–26. In: Human Variability in Response to Chemical Exposures: Measures, Modeling and Risk Assessment. Neumann DA, Kimmel CA (eds), CRC Press, Boca Raton, FL, 1998.

Kimmel CA. Les risques chimiques: L'exemple des lignes directrices de l'US EPA (Chemical risks: The example of the U.S. Environmental Protection Agency's guidelines). Proceedings,

Science et Decision en Sante Environnementale, Les Enjeux de l'Evaluation et de la Gestion des Risques, pp. 77–89, 1997.

Kimmel CA, Kimmel GL. Principles of developmental toxicology risk assessment. pp. 667–693. In: Handbook of Developmental Toxicology. Hood RD (ed), CRC Press, Boca Raton, 1996.

Kimmel CA, Kimmel GL. Risk assessment for developmental toxicity. pp. 429–453. In: Developmental Toxicology. Kimmel CA, Buelke-Sam J (eds), New York, Raven Press, 1994.

Goering PL, Fisher BR, Kimmel CA, Kimmel GL. Stress proteins as biomarkers of toxicity. pp. 95–99. In: Use of Biomarkers in Assessing Health and Environmental Impacts of Chemical Pollutants. Travis CC (ed), Plenum Press, New York, 1993.

Kavlock RJ, Kimmel CA. New approaches to developmental toxicity risk assessment at the U.S. Environmental Protection Agency. pp. 113–126. In: Risk Assessment of Prenatally-Induced Adverse Health Effects. Neubert D, Kavlock RJ, Merker HJ, Klein J (eds), Springer-Verlag, Berlin, 1992.

Kimmel CA, Kavlock RJ, Francis EZ. Animal models for assessing developmental toxicity. pp. 43–65. In: Similarities and Differences Between Children and Adults: Implications for Risk Assessment. Guzelian PS, Henry CJ, Olin SS (eds), ILSI Press, Washington, 1992.

Kimmel CA. Dose response modelling approaches for risk assessment. Toxicology Forum proceedings. Aspen, July 17, 1991.

Kimmel CA. What can be learnt from protocols relating to non-pharmaceuticals? pp. 65–81. In: Current Issues in Reproductive Toxicology—Can An International Guideline for Pharmaceuticals be Achieved? Lumley CE, Walker SR (eds), Quay Publishing, Lancaster, UK, 1991.

Kimmel CA, Price CJ. Developmental toxicity testing. pp. 301–317. In: Statistics in Toxicology. Krewski D and Franklin CA (eds), Gordon and Breach Science Publishers, New York, 1991.

Kimmel CA, Price CJ. Developmental toxicity studies. pp. 271–301 In: Handbook of *In Vivo* Toxicity Testing. Arnold DL, Grice HC, Krewski DR (eds), Academic Press, Inc., San Diego, 1990.

Kimmel CA. Quantitative approaches to human risk assessment. Presented at the Neurotoxicology and Risk Assessment Conference, Little Rock, AR, September 1989.

Rees DC, Francis EZ, Kimmel CA. EPA/NIDA-sponsored workshop on qualitative and quantitative comparability of human and animal developmental neurotoxicity: An overview.

Presented at the Neurotoxicology and Risk Assessment Conference, Little Rock, AR, September 1989.

Kimmel CA. Developmental toxicity regulation: The wave of the future. Presented to the Behavioral Teratology Society, June 1989.

Kimmel CA. Current status of behavioral teratology: Science and regulation. 19:1–10. In: CRC Critical Reviews in Toxicology. Goldberg L (ed), CRC Press, Inc., Boca Raton 1988.

Kimmel CA. Health assessment of exposure to developmental toxicants. pp. 39–48. In: New Concepts and Developments in Toxicology. Chambers PL, Gehring P, Sakai F (eds), Elsevier Science Publishers, Amsterdam, 1986.

Kimmel CA. Critical periods of exposure and developmental effects of lead. pp. 217–235. In: Toxicology and the Newborn. Kacew S, Reasor M (eds), Elsevier Science Publishers B.V., Amsterdam, 1984.

Kimmel CA, LaBorde JB, Hardin BD. Reproductive and developmental toxicology of selected epoxides. pp. 269–287. In: Toxicology and the Newborn. Kacew S, Reasor M (eds), Elsevier Science Publishers B.V., Amsterdam, 1984.

Ozemek HS, Adams J, Oglesby DM, Rath J, Buelke-Sam J and Kimmel CA. A microcomputer-controlled laboratory for the measurement of visual discrimination learning in rodents. Proceedings, Tenth Annual Northeast Bioengineering Conference. Hansen EW (ed), Inst. of Electrical and Electronics Engineers, Inc., pp. 56–60, 1982.

Kimmel CA. The developmental toxicity profile. pp. 321–331. In: Developmental Toxicology. Kimmel CA, Buelke-Sam J (eds), Raven Press, New York, 1981.

Kimmel CA, Grant LD, West GL, Martinez-Vargas CM, McConnell EE, Fowler BA, Woods JS, Howard JL. A multidisciplinary approach to the assessment of developmental toxicity associated with chronic lead exposure. DOE Symposium Series, #47, Developmental Toxicology of Energy-Related Pollutants, pp. 396–409, 1978.

Selected Invited Presentations

Kimmel CA. The National Children's Study: Environmental effects on child health and development. Presentation to the FDA Chapter of Sigma Xi, College Park, MD, January 30, 2004.

Kimmel CA. Update: The National Children's Study. Presentation to the Teratology Society, Vancouver, BC, Canada, June 2004.

Kimmel CA. Overview of the developmental neurotoxicity (DNT) study. Invited symposium presentation, Society of Toxicology, Salt Lake City, UT, 2003.

Kimmel CA. Recommendations from “A Review of the RfD/C Processes.” EPA Workshop on Inhalation Risk Assessment: A Superfund Focus. Washington, DC, September 9–12, 2003.

Kimmel CA. Evaluating reproductive and developmental toxicity in the context of deriving reference values for standard-setting. Invited presentation at the Workshop on Advances in Human Research, Exposure and Risk Assessment Related to Reproductive and Developmental Effects: Do We Need the Risk Assessment for Children? Prague, Czech Republic, March 16–19, 2003.

Kimmel CA. Using mechanistic data from developmental and molecular biology for developmental toxicity risk assessment. Presented at a continuing education course on Improving Risk Assessment for Human Developmental Defects: The Promise of Recent Advances in Developmental Biology and Genomics, Society of Toxicology, San Francisco, CA, March 25–29, 2001.

Kimmel CA. Recent developments in regulatory requirements for developmental toxicology. Eurotox 2000, London, September 17–20, 2000.

Kimmel CA. Use of toxicological data in estimating reference values for risk assessment. Invited presentation, NIOSH Future Research for Improving Risk Assessment Methods, Snowmass, CO, August 16–18, 2000.

Kimmel CA. The Warkany lecture: Invited keynote speech: Improving the science for predicting risks to children’s health. Teratology Society, Keystone, CO, June 29–July 4, 1999.

Kimmel CA. Predictability of animal developmental toxicity data for humans. Invited presentation, Organization of Teratology Information Services, West Palm Beach, FL, June 24–27, 2000.

Kimmel CA. Toxicology data needs: Are current animal tests adequate to protect children? Presentation at the International Society of Regulatory Toxicology and Pharmacology, The FQPA: A Challenge for Science Policy and Pesticide Regulation, Fairfax, VA, March 23, 1999.

Kimmel CA. The issue of FQPA 10X and children’s health risks from pesticide exposure: Toxicology data requirements. Invited presentation to OERR/OSWER Risk Network, February 24, 1999.

Kimmel CA. Science issues related to the Food Quality Protection Act (FQPA): A neurotoxicology focus. Invited presentation at the 16th International Neurotoxicology Conference on Pesticides and Susceptible Populations, Little Rock, AR, September 13–16, 1998.

Kimmel CA. FDA pregnancy categories: Progress on revision. Invited presentation at the Middle Atlantic Reproduction and Teratology Association, Bristol-Myers Squibb, New Brunswick, NJ, October 24, 1997.

Kimmel CA. Careers for developmental biologists in government. Invited presentation at the 1997 Mid-Atlantic Regional Meeting of the Society for Developmental Biology, UMDNJ School of Osteopathic Medicine, Stratford, NJ, October 23, 1997.

Kimmel CA. Developmental toxicity risk assessment. Invited presentation at the First KFDA International Symposium on Current Status of Safety on Food and Drug, Seoul, Korea, October 16, 1997.

Kimmel CA. Reproductive and developmental toxicity. Lecture in graduate course TOXI 601, University of Maryland at Baltimore, September 24, 1997.

Kimmel CA. Pregnancy classification of drugs by the FDA. Invited presentation to the Tenth International Conference of the Organization of Teratology Information Services. Palm Beach, FL, June 20–23, 1997.

Kimmel CA. Reproductive and developmental toxicity. Invited lecture, University of Maryland Toxicology Program, October 25, 1995.

Kimmel CA, Kavlock RJ, Allen BC, Faustman EM. Benchmark dose concept applied to data from conventional developmental toxicity studies. Invited symposium presentation, International Congress of Toxicology VII, Seattle, WA, July 2–6, 1995.

Kimmel CA. Risk assessment in today's world: Are we asking the right questions? Keynote Lecture, Teratology Society, Newport Beach, CA, June 29, 1995.

Kimmel CA. New approaches to quantitative modeling. Lecture, graduate course, Reproductive and Developmental Toxicology, University of Maryland Toxicology Program, Baltimore, MD, May 3, 1995.

Kimmel CA. Developmental toxicology. Lecture in FDA course, Rockville, MD, April 20, 1995.

Kimmel CA. Mechanisms of embryo development and toxicity. Lecture, graduate course, Reproductive and Developmental Toxicology, University of Maryland Toxicology Program, Baltimore, MD, February 22, 1995.

Kimmel CA. Advances in developmental toxicity risk assessment: Current approaches and future research directions. Invited seminar, Chemical Industry Institute of Toxicology, Research Triangle Park, NC, February 3, 1995.

Kimmel CA. Risk assessment for birth defects. Invited presentation at the American Chemical Society Short Course on Pharmacokinetics and Risk Assessment, Washington, DC, February 22–24, 1995.

Kimmel CA. EPA implementation of new methods for noncancer risk assessment. Invited symposium presentation, Society for Risk Analysis, Baltimore, MD, December 5–7, 1994.

Kavlock RJ, Kimmel CA, Faustman EM, Allen BC. Lessons learned from application of benchmark dose techniques to 246 developmental toxicity datasets. Invited symposium presentation, Society for Risk Analysis, Baltimore, MD, December 5–7, 1994.

Kimmel CA. Developmental toxicity risk assessment: Consensus building, hypothesis formulation, and focused research. Arkansas Toxicology Symposium, Little Rock, AR, November 10–11, 1994.

Kimmel CA. Developmental toxicity. Lecture, Principles in Toxicology, Graduate Toxicology Program, University of Maryland, Baltimore, October 26, 1994.

Kimmel CA. Summary of research on stress proteins and developmental effects of hyperthermia. In: Stress Proteins in Teratogenesis: A teaching workshop sponsored by IFTS. ETS/IFTS Meeting, Prague, Czech Republic, September 12–15, 1994.

Kimmel CA. Update on the benchmark dose approach. Presentation to the API Toxicology Group, May 18, 1994.

Kimmel CA. Reproductive and developmental effects of diethylene and triethylene glycol (methyl-, ethyl-) ethers. Presented at the International Symposium on Health Hazards of Glycol Ethers, Abbaye de Pont-a-Mousson, Nancy, France, April 18–21, 1994.

Kimmel CA. Update on EPA's risk assessment guidelines. Presented at the EPA Environmental Estrogens Colloquium, April 11–12, 1994.

Kimmel CA. Summary of the International Federation of Teratology Society's goals and objectives. Presentation at a meeting sponsored by the March of Dimes to form a world-wide alliance for the prevention of birth defects, New York, April 4–5, 1994.

Kimmel CA. Draft OPPTS reproductive and developmental toxicity testing guidelines. Presented to Reproductive and Developmental Toxicity Specialty Section, Society of Toxicology, March 14, 1994.

Kimmel CA. Risk assessment for birth defects. Lecture in the American Chemical Society Pharmacokinetics and Risk Assessment Course, Washington, DC, February 23–24, 1994.

Kimmel CA. The benchmark dose approach. Risk Assessment Teleconference for Superfund, August 11, 1993.

Kimmel CA. Alternatives to the NOAEL/UF approach for calculating reference doses. Invited presentation at the CRAM/NRC Workshop on Quantitative Methods in Developmental Toxicity, Ottawa, Ontario, May 21–22, 1992.

Kimmel CA. The benchmark dose approach presented in U.S. EPA's developmental toxicity guidelines. Invited presentation at the CAL/EPA, USEPA and ATSDR Workshop on Safety

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Assessment for Non-Cancer Endpoints: The Benchmark Dose and Other Possible Approaches. Tiburon, CA, May 11–12, 1992.

Kimmel CA. Assessing risk for health effects other than cancer. Invited presentation, NIOSH Horizons in Occupational Science and the Alice Hamilton Science Award, March 24, 1992.

Kimmel CA. EPA's developmental neurotoxicity testing guidelines. Presented to the UK Reprotox Discussion Group, Tewkesbury, England, March 2–3, 1992.

Kimmel CA. Developmental neurotoxicity testing and risk assessment. Seminar presented to the Department of Environmental Health, University of Washington, Seattle, WA, February 21, 1992.

Kimmel CA, Zenick H. Alternatives to the NOAEL/UF approach for quantitative noncancer risk assessment. Invited Presentation, Symposium Improvements in Quantitative Noncancer Risk Assessment. *Toxicologist* 1992; 12:23.

Kimmel CA. EPA's neurotoxicity testing guidelines. Presented at Sandoz Chemical Company, Basel, Switzerland, September 25, 1991.

Kimmel CA. What can be learnt from protocols relating to non-pharmaceuticals? Presented at the CMR Workshop on Current Issues in Reproductive Toxicology—Can An International Guideline for Pharmaceuticals be Achieved? London, May 13–15, 1991.

Kimmel CA. Risk assessment and the use of basic biology data. Workshop on Developmental Abnormalities, Committee on Toxicology, BEST, NRC, Washington, DC, January 9–10, 1991.

Kimmel CA. Animal models for evaluating the sensitivity of the developing organism. Presented at the ILSI/EPA Conference, Similarities and Differences between Children and Adults: Implications for Risk Assessment. Hunt Valley, MD, November 5–7, 1990.

Kimmel CA. Regulatory perspectives of neurotoxicity testing. Invited presentation at the IRDC 10th Annual Symposium, Kalamazoo, MI, October 3–5, 1990.

Kimmel CA, Arnesen SJ, Kissman HM. DART and other information resources in developmental and reproductive toxicology. Presented at the EPA/ORNL Symposium on Access and Use of Information resources in Assessing Health Risks from Chemical Exposure, Oak Ridge, TN, June 27–29, 1990.

Kimmel CA. Use of animal data in making regulatory decisions. Lecture presented in course on advanced human developmental biology, Georgetown University Medical Center, April 1990.

Kimmel CA. Risk assessment and developmental toxicity. Lecture in course on principles of investigative toxicology, Toxicology Program, University of Maryland, Baltimore, MD, March 1990.

Kimmel CA. Regulatory issues and risk assessment for neurotoxicology. Continuing Education Course on Neurotoxicology, Society of Toxicology Meeting, Atlanta, GA, February 27, 1989.

Kimmel CA. Methods in developmental toxicity risk assessment. Symposium on Mechanisms of Carcinogenesis and Reproductive Toxicity. Implications for Public Health, Pacific Grove, CA, March 23–25, 1988.

Kimmel CA. The integration of basic science research into risk assessments for developmental toxicology. Seminar presented to the Developmental Biology/Teratology Program, Jefferson Medical College, Philadelphia, PA, February 1, 1988.

Kimmel CA. Risk assessment—what is involved. Workshop on Risk Assessment in Reproductive and Developmental Toxicology, Little Rock, AR, September 21–23, 1987.

Kimmel CA. Behavioral teratology update. Presented at the Toxicology Forum, Washington, DC, February 17, 1987.

Kimmel CA. The evaluation of behavioral teratogenic effects. Presentation to the Behavioral Teratology Group, Tokyo, Japan, July 24, 1986.

Kimmel CA. Health assessment of exposure to developmental toxicants. Symposium presentation at the IVth International Congress of Toxicology, Tokyo, Japan, July 21–25, 1986.

Kimmel CA. Overview of the results of the NCTR collaborative behavioral teratology study. Symposium presentation, Behavioral Teratology Society Meeting, Callaway Gardens, GA, July, 7, 1986.

Kimmel CA. The evaluation of behavioral teratogenic effects. Presented to the Reproductive Effects Subcommittee, American Industrial Health Council, Washington, DC, June 24, 1986.

Kimmel CA. The evaluation of behavioral teratogenic effects. Presented at the Midwest Regional Chapter, Society of Toxicology, Current Topics in Toxicology Symposium, Lincolnshire, IL, May 9, 1986.

Kimmel CA. EPA's new risk assessment guidelines and the assessment of risk for suspect developmental toxicants. Presented at the Second National Environmental Health Conference, sponsored by the Centers for Disease Control, Denver, CO, February 27, 1986.

Kimmel CA. Developmental toxicity of environmental chemicals. Seminar presented at the U.C. - EPA Graduate Seminars on the Environment, February 20, 1986, Cincinnati, OH.

Kimmel CA. An evaluation of behavioral testing procedures in behavioral teratology. Seminar for the Department of Environmental & Community Medicine, Rutgers Medical School, February 19, 1986.

Kimmel CA. Teratology principles, practice and interpretation. GLP Inspector's Course, Bethesda, MD, October 1985.

Kimmel CA. Risk assessments for developmental toxicity. Lecture at the American Chemical Society Course on Pharmacokinetics and Risk Assessment, Boston, MA, August 25–27, 1998.

Kimmel CA. Conducting a teratology study. Asian Congress of Pharmacology, New Delhi, India, January 15–19, 1985.

Kimmel CA. EPA guidelines for the risk assessment of suspect developmental toxicants. Symposium presentation. Teratology 1985; 31:34A.

Kimmel CA. Assessing the risks for developmental toxicity from chemical exposure. American Public Health Association meeting, Washington, November 1985.

Kimmel CA. EPA's guideline on assessment of suspect developmental toxicants. CEEM Environment Risk Assessment Meeting, Arlington, VA, November 1–2, 1984.

Kimmel CA. Behavioral manifestations of prenatal chemical exposure. Seminar presented at Howard University, Department of Microbiology, September 28, 1984.

Kimmel CA. Pharmacokinetic parameters and teratogenic endpoints following prenatal caffeine exposure. Invited presentation at the Fourth International Caffeine Workshop (ILSI), Athens, Greece, October 17–21, 1982.

Kimmel CA. Critical periods of exposure and developmental effects of lead. Invited presentation at the International Conference on Neurotoxicology of Selected Chemicals/ Neurotoxicity of Lead Exposure: Reviews and Recent Advances, Chicago, IL, September 20–21, 1982.

Kimmel CA, LaBorde JB, Trammell CT, Whatley JR. Use of a rapid double-staining procedure for detecting fetal skeletal abnormalities. Invited presentation at the Regional AALAS Arkansas Branch Meeting, Little Rock, August 21, 1982.

Kimmel CA. Correlating pharmacokinetics and teratogenic endpoints. Invited presentation at the Joint ASPET/SOT Meeting, Louisville, KY, August 17, 1982.

Kimmel CA. The NTP reproductive and developmental toxicology program. Presented at the NTP Open Meeting, San Diego, CA, March 1981.

Kimmel CA. Hexachlorophene and its teratogenic effects. Invited paper. Symposium on Environment and the Skin, October 22–24, 1972.

Prior Experience

Consultant, National Children's Study, National Institute of Child Health and Human Development, 2005–present
Guest Worker, Life Sciences Division, National Center for Devices and Radiological Health, Food and Drug Administration, 1985–2007
Senior Level Teratologist, National Center for Environmental Assessment, Office of Research and Development, EPA, 1992–2004
Adjunct Professor, Toxicology Program, University of Maryland, 1990–2001
Teratologist, Reproductive Effects Assessment Group (renamed Reproductive and Developmental Toxicology Branch), OHEA/ORD, EPA, 1984–1992
Adjunct Associate Professor, Interdisciplinary Toxicology Division, University of Arkansas for Medical Sciences, 1982–1989
Chief, Perinatal and Postnatal Evaluation Branch, Division of Teratogenesis Research, National Center for Toxicological Research, 1979–1984
Research Pharmacologist, Division of Teratogenesis Research, National Center for Toxicological Research, 1977–1979
Adjunct Assistant Professor, Department of Anatomy, University of North Carolina Medical School, 1975–1976
Senior Staff Fellow, Environmental Toxicology Branch, National Institute of Environmental Health Sciences, 1973–1977
Consultant, Environmental Protection Agency, 1972–1973
Instructor, Department of Anatomy, Harvard Medical School, 1972–1973
Section Head in Teratology EPA, NERC, ETRL, 1972–1972

Editorships and Editorial Review Boards

- Environmental Health Perspectives, Editorial Advisory Board, 1981–1988
- Fundamental and Applied Toxicology, Editorial Board, 1987–1993
- Journal of Toxicology and Environmental Health, Editorial Board, 1984–1987
- Neurotoxicology and Teratology Editorial Advisory Board, 1979–1994; 2005–present
- Proceedings of the Society for Experimental Biology and Medicine, Editorial Board, 1991–1994
- Journal of Children's Health, Editorial Advisory Board, 2002–2005
- Reproductive Toxicology, Editorial Board, 2003–2006

Peer Reviewer

- Food and Chemical Toxicology, 2005–present
- Birth Defects Research A: Clinical and Molecular Teratology, 2005–present

Professional Affiliations

- European Teratology Society, 1975–present
- International Federation of Teratology Societies, Council, 1989–1996; Secretary-Treasurer, 1992–1996
- Neurobehavioral Teratology Society, 1979–present; Council Member, 1979–1982; President-Elect, 1988–1989; President, 1989–1990; Past President, 1990–1991
- Society of Toxicology, 1977–present; Council, 1995–1997; Reproductive and Developmental Toxicology Specialty Section: Vice-President Elect, 2001–2002, Vice President, 2002–2003, President, 2003–2004, Past President, 2004–2005; Neurotoxicology Specialty Section; Risk Assessment Specialty Section (Council, 1994–1996)
- Teratology Society, 1971–present; President-Elect, 1989–1990; President, 1990–1991; Past President, 1991–1992