

## John M. Rogers, Ph.D.

SENIOR CONSULTANT

### CONTACT INFORMATION

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### PROFESSIONAL PROFILE

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Dr. John Rogers is a Senior Consultant in ToxStrategies' Health Sciences Practice. He is a widely recognized authority on developmental and reproductive toxicology, including toxicity assessment and both *in vitro* and *in vivo* toxicology research. With over 35 years of experience, his work has included hazard and dose-response assessment for chemically induced developmental toxicity, elucidating mechanisms of abnormal development, building biologically based dose-response models and adverse outcome pathways, and assessing the role of maternal toxicity and maternal nutrition in adverse developmental outcomes. He has researched and written reviews of the Developmental Origins of Health and Disease theory and the potential role of epigenetics. He has studied the developmental toxicity of pesticides, fungicides, industrial chemicals, and pharmaceuticals. He has published several reviews on the developmental effects of parental smoking. Recently, he has organized symposia on the development of new alternative (animal-free) methods for toxicity assessment.

Dr. Rogers enters the consulting arena following a long and distinguished career with the US EPA and in academia. In EPA's Office of Research and Development, he has held numerous positions including Associate Director of the Public Health and Integrated Toxicology Division in the Center for Public Health and Environmental Assessment, Director of the Toxicity Assessment Division, Chief of the Developmental Toxicology Branch, and Acting Chief of the Gamete and Early Embryo Branch in the National Health and Environmental Effects Research Laboratory.

Dr. Rogers has been named to multiple adjunct faculty appointments (past and present) and has received nine professional society and academic awards, as well as fourteen scientific and technical achievement awards from EPA. He is a long-time member of the Society of Toxicology (SOT) and the Teratology Society (now the Society for Birth Defects Research and Prevention), and has fulfilled numerous leadership roles, including service as President of the Teratology Society and the Reproductive and Developmental Toxicology Specialty Section of SOT.

In the peer-reviewed literature field, Dr. Rogers has been an Associate Editor for two leading journals, served on the Editorial Boards of six more, and is a co-editor for Birth Defects Research. He is also a co-editor on three books, including the well-respected Toxicology of Metals. He wrote the chapter on Developmental Toxicology in *Casarett and Doull's Toxicology: The Science of Poisons*, which has gone through four editions spanning 20 years.

## EDUCATION AND DEGREES EARNED

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- 1982–1984 NIH Postdoctoral Fellow, Department of Nutrition, University of California, Davis
- 1982 Ph.D., Biology, University of Miami, Coral Gables, Florida
- 1979 M.S., Biology, University of Miami
- 1976 B.S., Biology, University of Miami

## PROFESSIONAL EXPERIENCE

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- 2019–2020 Associate Director, Public Health and Integrated Toxicology Division, Center for Public Health and Environmental Assessment (CPHEA), Office of Research and Development, U.S. EPA. Served as Senior Science Advisor for Toxicity Assessment, evaluating and advising on *in vivo* and *in vitro* toxicology research to support Agency decision-making. Advising member of toxicity research teams in the division and serve as liaison with CPHEA Program Operations Staff.
- 2011–2019 Director, Toxicity Assessment Division (Title 42), National Health and Environmental Effects Research Laboratory, ORD, EPA. Directed all aspects of divisional research, including prioritization, staffing, funding, and evaluation. Oversaw performance appraisals for division staff. Served as Deputy Ethics Official for NHEERL and member of the NHEERL Senior Management Team, advising on direction of the National Laboratory as well as administrative issues. Also served as Chair of the NHEERL Technical Qualifications Board (TQB) for three years.
- 2009–2011 Acting Director, Toxicity Assessment Division, NHEERL, ORD, EPA. Duties same as above.
- 2008–2009 Acting Chief, Gamete and Early Embryo Biology Branch, National Health and Environmental Effects Research Laboratory, U.S. Environmental Protection Agency. Acting Chief for a second Branch during vacancy in the position.
- 1991–2009 Chief, Developmental Biology Branch, Reproductive Toxicology Division, NHEERL, EPA. Responsible for directing Branch research program, funding and staffing decisions, performance appraisals, administrative efficiencies.
- 1989–1991 Chief, Experimental Teratology Section, Perinatal Toxicology Branch, Developmental Toxicology Division, Health Effects Research Laboratory, EPA.
- 1987, 1990 Visiting Assistant Professor, Dept. of Zoology, North Carolina State University, Raleigh, NC. Taught Embryology course and Introductory Biology course.
- 1984–1988 Research Biologist, Perinatal Toxicology Branch, Developmental Biology Division, Health Effects Research Laboratory, EPA.
- 1982–1984 NIH Postdoctoral Fellow, Dept. of Nutrition, University of California, Davis.
- 1982 Lecturer in Biology, Dept. of Biology, University of Miami, Coral Gables, FL.
- 1976–1982 Graduate Teaching Assistant, Dept. of Biology, University of Miami, Coral Gables, FL

## ADJUNCT FACULTY APPOINTMENTS

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- 2013–Present Affiliated Graduate Faculty, Curriculum in Toxicology, School of Medicine, University of North Carolina, Chapel Hill. Teach in Advance Toxicology graduate course.
- 2002–Present Professor, Department of Molecular Biomedical Sciences, North Carolina State University College of Veterinary Medicine, Raleigh. Lectured in Toxicology, served on faculty committees.
- 2008–2012 Professor, Curriculum in Toxicology, School of Medicine, University of North Carolina, Chapel Hill. Taught Advanced Toxicology graduate course.
- 1993–2008 Associate Professor, Curriculum in Toxicology, School of Medicine, University of North Carolina, Chapel Hill, NC.

## PROFESSIONAL ASSOCIATIONS

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- 1982–Present Society of Toxicology (SOT)  
SOT Reproductive and Developmental Toxicology Specialty Section: Nominations Committee Chair, Secretary/Treasurer, Vice-President, President, Past President
- 1982–Present Teratology Society (now the Society for Birth Defects Research and Prevention)  
Student Affairs Committee Chair, Nominations and Election Committee Chair, Strategic Planning Committee member, Treasurer, Finance Committee, Education Committee, Public Affairs Committee, FASEB representative (federal funding), Program Committee, Vice-President and Program Committee Chair, President, Past President
- 2007–Present International Society of Developmental Origins of Health and Disease (DOHaD) and U.S. DOHaD

## PROFESSIONAL HONORS/AWARDS

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- 2020 EPA Bronze Medal for Commendable Service: Scientific Team for Bringing Epigenetics into the Agencies Research Program
- 2011 EPA Bronze Medal for Commendable Service: Interdisciplinary Scientific Team for Perfluorinated Chemicals Research and Assessment
- 2006 First Robert L. Brent Lecturer, 46th Annual Teratology Society Meeting: "Of Mice, Men, and Metabolism: An Update on the Teratogenicity of Methanol," Tucson, AZ
- 2006 EPA Bronze Medal for Commendable Service: Research on Perfluorinated Chemicals
- 2005 Sixteenth Lucille S. Hurley Distinguished Seminar Speaker, Department of Nutrition and Western Human Nutrition Research Center, University of California, Davis, CA: "Maternal Dietary Folate Intake and Response to Diverse Developmental Toxicants in Rodents"
- 2005 National Health and Environmental Effects Research Laboratory Diversity Award, for training of minority graduate students
- 2002 Distinguished Scientist Lecture Series, Department of Molecular Biomedical Sciences, College of Veterinary Medicine, North Carolina State University: "Approaches to the Elucidation of Mechanisms of Chemically-Induced Birth Defects: Model and Environmental Chemicals," Raleigh, NC
- 1984 NRSA Competitive renewal, National Eye Institute 9/84–11/84

1982 NIH Individual National Research Service Award (NRSA), National Eye Institute, 9/82–9/84

*Received 14 EPA Scientific and Technological Achievement Awards for research articles on various topics, spanning 1991–2015.*

## PROFESSIONAL SERVICE

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- 2021 Chair, SOT Symposium, “Developmental Toxicity Hazard Assessment without Animals: Pathways and Prospects” (accepted as Innovative Application for Toxicology session for SOT Annual Meeting)
- 2020–Present Organizing Committee NASEM/ILAR Workshop on Microphysiological Systems for Animals and Humans
- 2019–Present Member, Intergovernmental OECD Retinoid Pathway Expert Group
- 2019, 2020 Organizing Committee, 3rd and 4th American College of Toxicology/Teratology Society Course, “Practical Reproductive and Developmental Toxicology”
- 2017–Present Member, Tobacco-Related Disease Research Program Exposure Toxicology Grant Review Panel
- 2017 Co-Chair, Public Affairs Symposium, The Toxicology of Tobacco Smoke and E-Cigarette Use During Pregnancy, Annual Meeting of the Teratology Society
- 2016–Present Member, Science Advisory Panel, Third-Hand Tobacco Smoke Research Consortium, Lawrence Berkeley National Laboratory
- 2015 Discussant, Institute of Medicine Roundtable on Environmental Health Sciences, Research and Medicine Workshop, “The Interplay Between Environmental Exposures and Obesity,” NIEHS
- 2014–Present ORD representative, EPA Endocrine Disruptor Screening Program Science and Policy Committee
- 2014–Present EPA representative, Steering Committee, Interagency Workgroup on Pharmaceuticals in Water
- 2012–Present Co-Chair, National Health and Environmental Effects Laboratory, ORD Technical Qualifications Board
- 2010–Present Member, Government Liaison Committee, National Academy of Sciences Committee on Emerging Science for Environmental Health Decisions
- 2010–2013 Chair, grant application review panel, California Tobacco-Related Disease Research Program, General Biomedical Sciences and Program Projects on Third-Hand Tobacco Smoke and Tobacco Waste
- 2010 Member, Organizing Committee, Use of In Utero and Postnatal Indicators to Predict Health Outcome Later in Life. National Academy of Sciences Committee on Emerging Science for Environmental Health Decisions
- 2010 Member, NIH Special Emphasis Panel to review proposals for Support of the Preparation of the Report on Carcinogens (by conference call)
- 2009–Present Steering Committee member, HESI-DART project, “Consensus List of Developmental Toxicants”
- 2009 Member, grant application review panel, Flight Attendant’s Medical Research Institute
- 2009 Chair, Symposium, “Environmental Chemicals and Toxins and DOHaD,” 6th World Congress for DOHaD
- 2009 Chair, Society of Toxicology Symposium, “Developmental Basis of Adult Disease,” SOT Annual Meeting

- 2008–2012 Member, HESI Developmental and Reproductive Toxicology Technical Committee — Maternal Toxicity Working Group
- 2008–2011 Member, HESI Developmental and Reproductive Toxicology Technical Committee — Epigenetics Working Group
- 2008 Co-Chair, Society of Toxicology Continuing Education Course, “Basic Embryology and Teratology,” Teratology Society Annual Meeting
- 2007–Present Member, grant application review panel, California Tobacco-Related Disease Research Program, General Biomedical Sciences
- 2007–Present Member, NIEHS/NTP Center for the Evaluation of Risks to Human Reproduction, Panel on Hydroxyurea
- 2007–2014 Member, NCEA/NHEERL IRIS working group on methanol
- 2007–2014 Chair, Teratology Society March of Dimes 10th Anniversary Symposium, “Epigenetics and Developmental Programming of Metabolic Disorders,” Teratology Society Annual Meeting
- 2006–2007 Member, Organizing Committee, Society of Toxicology Contemporary Concepts in Toxicology Meeting on Perfluoroalkyl Acids
- 2005–2009 Member, FASEB NIH Federal Funding Committee (representing the Teratology Society)
- 2005–2008 Member, EPA Pregnancy and Environmental Health Campaign
- 2005 Co-Chair, SOT Symposium, “Developmental Toxicology of the Lung,” Society of Toxicology
- 2004 Member, NIEHS/NTP Center for the Evaluation of Risks to Human Reproduction, Panel on Methanol
- 2004 Co-Chair, SOT Workshop: “Zebrafish – A Model Organism for Assessing Developmental Toxicity in Drug Discovery/Environmental Risk Assessment,” Society of Toxicology
- 2000 Member, Expert Panel, Review of FETAX (Frog Embryo Teratogenesis Assay—Xenopus), National Institute of Environmental Health Sciences
- 2000 Invited Participant, Chemical Manufacturer’s Association Workshop on Reproductive and Developmental Toxicology Research Needs
- 1999–2002 Member, ILSI Health and Environmental Sciences Institute Working Group on Interpretation of Skeletal Variations for Human Health Risk Assessment
- 1999 Organizer, Workshop and Symposium on Current Knowledge of Folate in Human Development
- 1999 Organizer, SOT Symposium: “The Developmental Toxicity of Tobacco Smoke,” Society of Toxicology
- 1999 Invited Participant, CDC/ATSDR Workshop on Children’s Health Issues
- 1998–2006 Member, Expert Registry, NTP Center for Evaluation of Risks to Human Reproduction
- 1998 Organizer, North Carolina Alliance for Developmental Biology and Birth Defects Meeting
- 1998 External Peer Reviewer, FDA Office of Women’s Health, Intramural Funding Program
- 1998 External Peer Reviewer (Final Reports), Health Effects Institute, Methanol Initiative Grants Program
- 1998 Chair, SOT Continuing Education Course, “Current Developmental Biology: Relevance and Application for Developmental Toxicology,” Society of Toxicology
- 1997–2000 Member, NHEERL Technical Qualifications Board

- 1997 Co-chair, platform session, "Evaluation of Teratogenic Hazard/Risks," Thirty-Seventh Annual Meeting of the Teratology Society
- 1995–1996 Organizing Committee, and Session Co-Chair 3rd Annual HERL Symposium: Susceptibility and Risk, U.S. Environmental Protection Agency
- 1995 Participant, ILSI Risk Science Institute Workshop on Human Variability
- 1995 FDA/NCTR Scientist Peer Review Panel
- 1994 Co-chair, Society of Toxicology Symposium, "Health Risks Associated with Prenatal Metal Exposure," 1994 Annual Meeting
- 1994 Chair, platform session, "Mechanisms of Developmental Toxicity," Thirty-Fourth Annual Meeting of the Teratology Society
- 1992 Participant, Methanol Working Group, Health Effects Institute Air Toxics Workshop
- 1992 Member, Organizing Committee, NIEHS Workshops on Developmental Biology and Developmental Toxicology
- 1992 Designated Developmental Toxicologist, NIEHS Workshop on Genetic Imprinting
- 1990 Chair, Platform session, "Maternal Effects," Thirtieth Annual Meeting of the Teratology Society
- 1989–1994 Chair, EPA HERL/NHEERL Capital Equipment Committee
- 1988–1998 Center for Indoor Air Research Grant Review Panel
- 1988 Member, Organizing Committee, Twenty-Eighth Annual Meeting of the Teratology Society
- 1988 Co-Chair, "Teratology in the 1990's" Symposium, Twenty-Eighth Annual Meeting of the Teratology Society
- 1987–Present National Research Council Postdoctoral Advisor
- 1985–1993 EPA Health Effects Research Grant Review Panel

## PEER REVIEWER

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- 2018–Present Co-Editor, *Birth Defects Research*
- 2015–2020 Associate Editor, *Environmental Health Perspectives*
- 2014–2017 Associate Editor, *Birth Defects Research*, Part B: Reproductive and Developmental Toxicology

## Journal Editorial Boards

- 2019–Present *Toxicology*
- 2017–Present *Mutation Research – Reviews*
- 2008–2015 *Journal of the Developmental Origins of Health and Disease*
- 2003–2014 *Birth Defects Research*, Part B: Reproductive and Developmental Toxicology
- 1997–2000 *Toxicology and Ecotoxicology News/Reviews*
- 1992–1999 *Journal of Toxicological and Environmental Health*

## Books Edited

Co-Editor (with Dr. Edward Massaro): *The Skeleton: Biochemical and Molecular Interactions in Development and Homeostasis*, Humana Press, 2005

Co-Editor (with Dr. Edward Massaro): *Current Status of Knowledge of Folate in Human Development*, Humana Press, 2002

Section Editor: Developmental and reproductive toxicology of metals. In: Chang LW (ed), *Toxicology of Metals*, CRC Press, Boca Raton, FL, 1996

## MANUSCRIPTS

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Heintz MM, Thompson CM, Wolf JC, **Rogers JM**, Haws LC. 2026. Hepatic transcriptomic responses in gravid and non-gravid rats exposed to HFPO-DA: Analyses to inform the role of maternal effects in neonatal toxicity. *PLoS One* 21(4):e0345643; doi: 10.1371/journal.pone.0345643.

Fitch S, **Rogers J**, Marty S, Norman J, Schneider S, Rushton E, Wikoff D, Ellis-Hutchings R. 2025. Systematic review of potential developmental and reproductive toxicity of microplastics. *Toxicol Sci* 207(2):289-305; doi: 10.1093/toxsci/kfaf108.

**Rogers JM**, Buerger AN, Heintz MM, Palermo CM, Haws LC, Lea IA. 2025. Evaluation of a hypothesized Sertoli cell-based adverse outcome pathway for effects of diisononyl phthalate on the developing testis. *Curr Res Toxicol* 8:100219.

**Rogers JM**, Heintz MM, Haws LC. 2025. Reproductive and developmental toxicity screen (OECD TG 421) and extended one generation reproductive toxicity study (OECD TG 443) of decahydronaphthalene in Sprague Dawley rats. *Regul Toxicol Pharmacol* 160(Aug):105829; PMID: 40222475.

Henderson RG, Welsh BT, **Rogers JM**, Borghoff SJ, Trexler KR, Bonn-Miller MO, Lefever TW. 2023. Reproductive and developmental toxicity evaluation of cannabidiol. *Food Chem Toxicol* 176:113786.

Watanabe M, **Rogers JM**. 2020. Introduction to "The Trouble with Plastics" special issue. *Birth Defects Res* 112:1297–1299.

**Rogers JM**. 2019. Smoking and pregnancy: Epigenetics and the developmental origins of the metabolic syndrome. Special Issue on Smoking, Vaping and Cannabis. *Birth Defects Res* 111:1259–1269.

**Rogers JM**, Watanabe M. 2019. Special issue on "Developmental effects of smoking, vaping, and cannabis use" (Introduction). *Birth Defects Res* 111:1245–1247.

**Rogers JM**, RE Ellis-Hutchings, BE Grey, RM Zucker, J Norwood, Jr., CE Grace, C Gordon, C Lau. 2014. Elevated blood pressure in offspring of rats exposed to diverse chemicals during pregnancy. *Toxicol Sci* 137:436–446.

Schugg TT, Erlebacher A, Leibowitz S, Ma L, Muglio LJ, Rando OJ, **Rogers JM**, Romero R, et al. 2012. Fetal programming and environmental exposures: Implications for prenatal care and preterm birth. *Ann NY Acad Sci* 1276:37–46.

Lau C, **Rogers JM**, Desai M, Ross MG. 2011. Fetal programming of adult disease: Implications for prenatal care. *Obstet Gynecol* 117:978–985.

Grace CE, Kim SJ, **Rogers JM**. 2011. Maternal influences on epigenetic programming of the developing hypothalamic-pituitary-adrenal axis. *Birth Defects Res A* 91:797–805.

Ellis-Hutchings RE, Norwood J Jr., Grey BE, Zucker RM, Lau C **Rogers JM**. 2010. Critical period and strain comparisons of the effects of gestational undernutrition on adult health in rats. *Birth Defects Res B* 89:396–407.

- Daston GP, Chapin R, Scialli AR, Piersma AH, Carney EW, **Rogers JM**, Friedman JM. 2010. A different approach to validating screening assays for developmental toxicity. *Birth Defects Res B* 89:526–530.
- Daston GP, Beyer BK, Carney EW, Chapin RE, Friedman JM, Piersma AH, **Rogers JM**, Scialli AR. 2014. Exposure-based validation list for developmental toxicity screening assays. *Birth Defects Res B* 101:423–428.
- Boekelheide K, Blumberg B, Chapin RE, Cote I, Graziano JH, Janesick A, Lane R, Lilycrop K, ..., **Rogers JM**. 2012. Predicting later-life outcomes of early-life exposures. *Environ Health Perspect* 120:1353–1361.
- Beyer BK, Chernoff N, Danielsson BR, Davis-Bruno K, Harrouk W, Hood RD, Janer G, ..., **Rogers JM**, Scialli AR. 2011. Maternal toxicity and its impact on study design and data interpretation. *Birth Defects Res B* 92:36–51.
- Beasley TE, Evansky PA, Martin SA, McDaniel KL, Moser VC, Luebke RW, Norwood J Jr, **Rogers JM**, et al. 2014. Toxicological outcomes in rats exposed to inhaled ethanol during gestation. *Neurotoxicol Teratol* 45:59–69.
- Shepard TH, Barr M Jr, Brent RL, Hendrickx A, Kochhar D, Oakley G, Scott WJ Jr, **Rogers JM**. 2010. An updated history of the Teratology Society. *Birth Defects Res A* 88:263–285.
- Chernoff N, **Rogers JM**. 2010. Hypoxia and the edema syndrome: Elucidation of a mechanism of teratogenesis. *Birth Defects Res B* 89:300–303.
- Daston GP, **Rogers JM**. 2008. Casimer T. Grabowski: 1927–2007. *Birth Defects Res B* 83:149–150.
- Liebelt EL, Balk SJ, Faber W, Fisher JW, Hughes CL, Lanzkron SM, Lewis KM, ..., **Rogers JM**, et al. 2007. NTP-CEHR expert panel report on the reproductive and developmental toxicity of hydroxyurea. *Birth Defects Res B* 80:259–366.
- Rogers JM**. 2006. Toxicological highlight. Casting a broad network: Fishing for mechanisms of retinoid teratogenicity. *Toxicol Sci* 94:1–2.
- Lau C, Thibodeaux JR, Hanson RG, Narotsky MG, **Rogers JM**, Lindstrom AB, Strynar MJ. 2006. Effects of perfluorooctanoic acid exposure during pregnancy in the mouse. *Toxicol Sci* 90:510–518.
- Grasty RC, Bjork JA, Wallace KB, Lau CS, **Rogers JM**. 2005. Effects of prenatal perfluorooctane sulfonate (PFOS) exposure on lung maturation in the perinatal rat. *Birth Defects Res B* 74:405–416.
- Slikker W Jr., Andersen ME, Bogdanffy MS, Bus JS, Cohen SD, Conolly RB, David RM, ..., **Rogers JM**, et al. 2004. Dose-dependent transitions in mechanisms of toxicity: Case studies. *Toxicol Appl Pharmacol* 201:226–294.
- Slikker W Jr., Andersen ME, Bogdanffy MS, Bus JS, Cohen SD, Conolly RB, David RM, ..., **Rogers JM**, et al. 2004. Dose-dependent transitions in mechanisms of toxicity. *Toxicol Appl Pharmacol* 201:203–225.
- Degitz SJ, **Rogers JM**, Zucker RM, Hunter ES III. 2004. Developmental toxicity of methanol: pathogenesis in CD-1 and C57BL/6J mice exposed in whole embryo culture. *Birth Defects Res A* 70:179–184.
- Degitz SJ, Zucker RM, Kawanishi CY, Massenburg GS, **Rogers JM**. 2004. Pathogenesis of methanol-induced craniofacial defects in C57BL/6J mice. *Birth Defects Res A* 70:172–178.
- Rogers JM**, Brannen KC, Barbee BD, Zucker RM, Degitz SJ. 2004. Maternal methanol exposure during gastrulation causes holoprosencephaly, facial dysgenesis and cervical vertebral malformations in C57BL/6J mice. *Birth Defects Res B* 71:17–25.
- Grasty RC, Grey BE, Lau CS, **Rogers JM**, 2003. Prenatal window of susceptibility to perfluorooctane sulfonate-induced neonatal mortality in the Sprague-Dawley rat. *Birth Defects Res B* 68:465–471.
- Rogers JM**, Setzer RW, Branch S, Chernoff N. 2003. Chemically-induced supernumerary ribs in CD-1 mice: Size distribution and dose-response. *Birth Defects Res B* 71:17–25.
- Tarka-Leeds DK, Herr DW, Klinefelter GR, **Rogers JM**. 2003. Effects of gestational exposure to ethane dimethanesulfonate in CD-1 mice: Microtia and preliminary hearing tests. *Birth Defects Res B* 68:383–390.

Rogers EH, Hunter ES, Rosen MB, **Rogers JM**, Lau C, Hartig PC, Francis BM, Chernoff N. 2003. Lack of evidence for intergenerational reproductive effects due to prenatal and postnatal undernutrition in the female CD-1 mouse. *Reprod Toxicol* 17:519–525.

**Rogers JM**, Abbott BD. 2003. Screening for developmental toxicity of tobacco smoke constituents. *Toxicol Sci* 75:227–228.

Lau C, Thibodeaux JR, Hanson RG, **Rogers JM**, Grey BE, Stanton ME, Butenhoff JL, Stevenson LA. 2003. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. II: postnatal evaluation. *Toxicol Sci* 74:382–292.

Thibodeaux JR, Hanson RG, **Rogers JM**, Grey BE, Barbee BD, Richards JH, Butenhoff JL, et al. 2003. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. I: Maternal and prenatal evaluations. *Toxicol Sci* 74:369–381.

Tarka-Leeds DK, Suarez JD, Roberts NL, **Rogers JM**, Hardy MP, Klinefelter GR. 2003. Gestational exposure to ethane dimethanesulfonate permanently alters reproductive competence in the CD-1 mouse. *Biol Reprod* 69:959–967.

Leazer TM, Daston GP, Keen CL, **Rogers JM**. 2003. The embryoletality of lipopolysaccharide in CD-1 and metallothionein I-II null mice: Lack of a role for induced zinc deficiency or metallothionein induction. *Toxicol Sci* 73:442–447.

Hanna LA, Clegg MS, Momma T, **Rogers JM**, Daston GP, Keen CL. 2003. Zinc influences the in vitro development of peri-implantation mouse embryos. *Birth Defects Res A* 67:414–420.

Leazer TM, **Rogers JM**. 2001. Role of the acute phase response and tissue necrosis factor alpha in the developmental toxicity of lipopolysaccharide in the CD-1 mouse. *Reprod Toxicol* 16:173–179.

Huang Y-S, Held G, Andrews JE, **Rogers JM**. 2001. <sup>14</sup>C-Methanol incorporation into DNA and specific proteins of organogenesis-stage mouse embryos in vitro. *Reprod Toxicol* 15:429–435.

**Rogers JM**, Hunter ES III. 2001. Toxicological highlight. Redox redux: A closer look at conceptual low molecular weight thiols. *Toxicol Sci* 62:1–3.

Setzer RW, Lau C, Mole ML, Copeland FM, **Rogers JM**, Kavlock RJ. 2001. Toward a biologically-based dose-response model for the developmental toxicity of 5-fluorouracil in the rat: A mathematical construct. *Toxicol Sci* 59:49–58.

Lau C, Mole ML, Copeland FM, **Rogers JM**, Kavlock RJ, Shuey DL, Cameron AM, Ellis DH, et al. 2001. Toward a biologically-based dose-response model for the developmental toxicity of 5-fluorouracil in the rat: Acquisition of experimental data. *Toxicol Sci* 59:37–48.

Lau C, Anderson ME, Crawford-Brown DJ, Kavlock RJ, Kimmel CA, Knudsen TB, Muneoka K, **Rogers JM**, et al. 2000. Evaluation of biologically based dose-response modeling for developmental toxicity: A workshop report. *Regul Toxicol Pharmacol* 31:190–199.

Jankowski-Hennig MA, Clegg MS, Daston GP, **Rogers JM**, Keen CL. 2000. Zinc-deficient rat embryos have increased caspase 3-like activity and apoptosis. *Biochem Biophys Res Commun* 271:250–256.

Zucker RM, Hunter ES III, **Rogers JM**. 1999. Apoptosis and morphology in mouse embryos by confocal laser scanning microscopy. *Methods* 18: 473–480.

Zucker RM, Hunter S, **Rogers JM**. 1998. Confocal laser scanning microscopy of apoptosis in organogenesis-stage mouse embryos. *Cytometry* 33:348–354.

Keen CL Taubeneck, MW Zidenberg, Cherr S, Daston GP, **Rogers JM**. 1998. Toxicant exposure and trace element metabolism in pregnancy. *Environ Toxicol Pharmacol* 4:301–308.

**Rogers JM.** 1998. Life stage and its impact on risk of environmentally-induced adverse effects: Introduction. *Environ Toxicol Pharmacol* 4:299–300.

Elstein KH, Mole ML, RW Setzer, RM Zucker, RJ Kavlock, **JM Rogers**, C Lau. 1997. Nucleoside-mediated mitigation of 5-fluorouracil-induced toxicity in synchronized murine erythroleukemic cells. *Toxicol Appl Pharmacol* 146:29–39.

**Rogers JM**, Mole ML. 1997. Critical periods of sensitivity to the developmental toxicity of inhaled methanol in the CD-1 mouse. *Teratology* 55:364–372.

Connelly LE, **Rogers JM.** 1997. Methanol causes posteriorization of cervical vertebrae in mice. *Teratology* 55:138–144.

Fu SS Sakanashi TM, **Rogers JM**, Hong KH, Keen CL. 1996. Influence of dietary folic acid on the developmental toxicity of methanol and the frequency of chromosomal breakage in the CD-1 mouse. *Reprod Toxicol* 10:455–463.

Sakanashi TM, **Rogers JM**, Fu SS, Connelly LE, Keen CL. 1996. Influence of maternal folate status on the developmental toxicity of methanol in the CD-1 mouse. *Teratology* 54:198–206.

Branch S, **Rogers JM**, Brownie CF, Chernoff N. 1996. Supernumerary lumbar rib: manifestation of basic alteration in embryonic development of ribs. *J Appl Toxicol* 16:115–119.

**Rogers JM**, Taubeneck MW, Daston GP, Sulik KK, Zucker RM, Elstein KH, Jankowski MA, Keen CL. 1995. Maternal zinc deficiency causes apoptosis but not cell cycle alterations in organogenesis-stage rat embryos: Effect of varying duration of deficiency. *Teratology* 52:149–159.

Shuey DL, Setzer RW, Lau C, Zucker RM, Elstein KH, Narotsky MG, Kavlock RJ, **Rogers JM.** 1995. Biological modeling of 5-fluorouracil developmental toxicity. *Toxicology* 102:207–213.

Zucker RM, Elstein KH, Shuey DL, Ebron-McCoy M, **Rogers JM.** 1995. Utility of fluorescence microscopy in embryonic/fetal topographical analysis. *Teratology* 51:430–434.

Sulik KK, Dehart DB, **Rogers JM**, Chernoff N. 1995. Teratogenicity of low doses of all-trans retinoic acid in presomite mouse embryos. *Teratology* 51:398–403.

Andrews JE, Ebron-McCoy M, Kavlock RJ, **Rogers JM.** 1995. Developmental toxicity of formate and formic acid in whole embryo culture: A comparative study with mouse and rat embryos. *Teratology* 51:243–251.

Jankowski MA, Uriu-Hare JY, Rucker RB, **Rogers JM**, Keen CL. 1995. Maternal zinc deficiency, but not copper deficiency or diabetes, results in increased embryonic cell death in the rat: Implications for mechanisms underlying abnormal development. *Teratology* 5:85–93.

Keen CL, Taubeneck MW, Daston GP, Gershwin ME, **Rogers JM.** 1995. Primary and secondary zinc deficiency as factors contributing to abnormal central nervous system development. *Devel Brain Dysfunc* 8:79–89.

Zucker RM, Elstein KH, Shuey DL, **Rogers JM.** 1995. Flow cytometric detection of abnormal fetal erythropoiesis: Application to 5-fluorouracil-induced anemia. *Teratology* 51:37–44.

Taubeneck MW, Daston GP, **Rogers JM**, Gershwin ME, Ansari A, Keen CL. 1995. Tumor necrosis factor- $\alpha$  alters maternal and embryonic zinc metabolism and is developmentally toxic in mice. *J Nutr* 125:908–919.

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## INVITED BOOK CHAPTERS AND REVIEWS

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## INVITED PRESENTATIONS

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Placental biology, toxicology, and *in vitro* modeling for predictive developmental toxicology. Session presented at Society of Toxicology Annual Meeting, Nashville, TN, March 21, 2023.

Direct and indirect developmental toxicity: Maternal, placental and fetal considerations. Continuing Education Course, Teratology Society Annual Meeting, San Diego, CA, June 22, 2019.

Normal and abnormal development of the musculoskeletal system and limbs. American College of Toxicology/Teratology Society Course, "Practical Reproductive and Developmental Toxicology," Gaithersburg, MD, May 14, 2019.

Regulatory perspective on evaluation and interpretation of effects on skeletal development, and outlook for the future. Continuing Education Course, "Developmental Toxicity of the Skeletal System: Interpretation of Findings in DART Studies and Implications for Risk Assessment," Society of Toxicology Annual Meeting, Baltimore, MD, March 10, 2019.

Fifty years of predictive testing for human developmental toxicity: From thalidomide to virtual embryos. International Conference on Toxicity Testing Alternatives and Translational Toxicology, Nanjing, China, July 10, 2017.

Tobacco as a reproductive and developmental toxicant. Public Affairs Committee Symposium, "The Toxicology of Tobacco Smoke and E-Cigarette Use During Pregnancy," Annual Meeting of the Teratology Society, Denver, CO, June 27, 2017.

Normal and abnormal development of the musculoskeletal system and limbs. American College of Toxicology/Teratology Society Course, "Practical Reproductive and Developmental Toxicology," Philadelphia, PA, May 9, 2017.

Targeted approaches for DART adverse outcome hypothesis testing. Course entitled "Developmental and Reproductive Toxicology (DART) and Risk Assessment of Environmental Chemicals: Applications, Complexities, and Novel Approaches." Society of Toxicology Annual Meeting, New Orleans, LA, March 13, 2017.

Parental tobacco smoke exposure: Epigenetics and the developmental origins of health and disease. 5th Prenatal Programming and Toxicity Meeting (PPTOX V), Kitakyushu, Fukuoka, Japan, November 14, 2016.

Details of skeletal development and how this matters when interpreting results. Continuing Education Course, "Embryology and Developmental Toxicity Testing." Society of Toxicology Annual Meeting, New Orleans, LA, March 13, 2016.

What a difference a day makes: Critical exposure windows for adverse birth outcomes. EPA Workshop on Temporal Exposure Issues for Environmental Pollutants: Health Effects and Methodologies for Estimating Risk, Research Triangle Park, NC, January 29, 2016.

Environmental epigenetics and the developmental origins of health and disease. Symposium on Environmental Epigenomics and Disease Susceptibility. Environmental Mutagenesis and Genomics Society 46th Annual Meeting, New Orleans, LA, September 30, 2015.

Transgenerational epigenetic inheritance. Epigenetic Special Interest Group meeting, Environmental Mutagenesis and Genomics Society 46th Annual Meeting, New Orleans, LA, September 27, 2015.

Moderator, EPA's Office of Children's Health Protection Environmental Health Webinar Series, "Epigenetics," Washington, DC, April 8, 2015.

Direct and indirect developmental toxicity: Maternal, placental, and fetal considerations. Continuing Education Course, Teratology Society Annual Meeting, Tucson, AZ, June 22, 2013.

Reproductive health outcomes: Hazard assessment. Webinar presented to REACH (Tribal coalition representing environmental interests) and staff of OSWER, OCSPP, OSP, March 20, 2013.

Developmental Origins of Health and Disease (DOHaD): How the environment in which we develop affects our health for a lifetime. Federal Executive Institute, Charlottesville, VA, May 8, 2012.

Intrauterine programming of adult disease by maternal undernutrition or chemical exposure. Duke University, Integrated Toxicology and Environmental Health Program, Durham, NC, March 18, 2011.

Developmental Origins of Health and Disease (DOHaD): How the environment in which we develop affects our health for a lifetime. Toxicity Assessment Division DOHaD Seminar Series, U.S. EPA, Research Triangle Park, NC, February 10, 2011.

Normal and abnormal development of the musculoskeletal system and limbs. In: Reproductive and Developmental Toxicology for Industrial and Regulatory Scientists. Teratology Society Course, Falls Church, VA, October 26, 2010.

Principles of abnormal development. In: Reproductive and Developmental Toxicology for Industrial and Regulatory Scientists. Teratology Society Course, Falls Church, VA, October 25, 2010.

Developmental Origins of Health and Disease (DOHaD): Brief overview of human findings and animal models. EPA/NIEHS Children's Centers 2010 Meeting. Washington, DC, October 18, 2010.

Traditional testing strategies for detecting later life effects following early life stressors: Animal models. Workshop on: "Use of In Utero and Postnatal Indicators to Predict Health Outcome Later in Life." National Academy of Sciences Committee on Emerging Science for Environmental Health Decisions, Washington, DC, October 14-15, 2010.

Animal models for testing the DOHaD hypothesis. PPTOX II Meeting (Prenatal Programming and Toxicity), South Miami Beach, FL, Dec 7, 2009.

Epigenetic evaluation and reproductive/developmental toxicity testing. HESI Workshop on the State of the Science of Epigenetics, Research Triangle Park, NC, October 29, 2009.

Long-term effects of maternal undernutrition or toxicant exposure on adult health of offspring in rodents. Society for the Study of Reproduction Annual Meeting, Pittsburgh, PA, July 21, 2009.

Long-term effects of maternal undernutrition or toxicant exposure on adult health of offspring in rodents. Triangle Consortium on Reproductive Biology, NIEHS, Research Triangle Park, NC, January 31, 2009.

Developmental origins of health and disease: Effects of gestational undernutrition and chemical exposure in rodents. Department of Toxicology, North Carolina State University, Raleigh, NC, October 21, 2008.

Chemically-induced skeletal alterations in rodents. Gordon Conference on Musculoskeletal Biology, Proctor Academy, New Hampshire, July 31, 2008.

Embryology of the skeletal and urogenital systems. Society of Toxicology Continuing Education Course, Seattle, WA, March 16, 2008.

Developmental toxicity of perfluorinated alkyl acids in rodents. Society of Toxicology, Contemporary Concepts in Toxicology Meeting on Perfluorinated Alkyl Acids, Arlington, VA, Feb 14, 2007.

Methanol-induced teratogenesis in mice. Toxicology Forum Winter Meeting, Washington, DC, January 31, 2007.

Long term effects of the developmental environment: Implications for developmental toxicity risk assessment. University of Louisville, Louisville, KY, November 21, 2006.

Of mice, men and metabolism: An update on the teratogenicity of methanol. First Robert L. Brent Lecture, 46th Annual Teratology Society Meeting, Tucson, AZ, June 26, 2006.

Everything I needed to know I learned in the womb: Developmental origins of health and disease. Neurotoxicology Division, NHEERL, ORD, USEPA, Research Triangle Park, NC, November 30, 2005.

Case example: Zinc. ILSI Health and Environmental Sciences Institute (HESI) sponsored Continuing Education Course: "Dose-Dependent Transitions in Mechanisms of Toxicity: What Are They? How Are They Applied in Risk Assessment?" Annual Meeting of the American College of Toxicology (ACT), Williamsburg, VA, November 6, 2005.

Fetal skeletal examinations. Continuing Education Course on Basics of Developmental Toxicology, Society of Toxicology Annual Meeting, New Orleans, LA, March 2005.

Evaluation and interpretation of maternal toxicity in Segment II studies: Issues, some answers and data needs. International Union of Toxicologists Meeting, Tampere, Finland, July 14, 2004.

The Barker hypothesis: Implications for human health and well-being. Mars/MDRU Conference on Epigenetics: Fetal Origins of Health, McLean, VA, June 9, 2004.

Regulatory issues and overview of an ILSI workshop. Mini-symposium on significance of fetal variations in developmental toxicity studies and relevance for human risk assessment. Middle Atlantic Reproduction and Teratology Association Fall Meeting, Philadelphia, PA, November 15, 2002.

Development of biologically-based dose response models for developmental toxicology. Symposium on The Potential for Modeling to Improve Children's Risk Assessment. Society of Toxicology Annual Meeting, Nashville, TN. March 18, 2002.

Spatiotemporal patterns of gene expression: Developmental stage-related susceptibility. Continuing Education course, "Principles of Teratology: Application of New Technologies Towards Understanding Abnormal Development." Teratology Society Annual Meeting, Montreal, Quebec, Canada, June 24, 2001.

Reproductive hazards of the workplace. Physician's Assistant Certificate Program in Occupational and Environmental Medicine. Duke University Medical Center. July 20, 2000.

Development of biologically based dose-response models for developmental toxicity. Human Biology Models for Environmental Health Effects. Virtual Body Workshop, National Institute of Environmental Health Sciences, Research Triangle Park, NC, June 22, 2000.

Mechanisms of development and thresholds of response. University Integrated Toxicology Program Fall 1999 Symposium, Duke University, Durham, NC, November 8, 1999.

Chemically-induced fetal skeletal phenocopies and alterations in developmental gene expression. NIH Research Festival, Minisymposium on Craniofacial and Skeletal Biology and Disorders, Bethesda, MD, October 6th, 1999.

Toxicant-induced fetal skeletal phenocopies and associated alterations in gene expression. Midwest Teratology Association Meeting, Lima, OH, May 13-14, 1999.

Developmental toxicology: Overview and relevance to children's health issues. CDC/ATSDR Workshop on Children's Health Issues, Green Bay, WI, August 3-4, 1999.

Developmental control genes: Cross-species homology and effects of maternal toxicant exposure. Office of Research and Development, U.S. EPA, Washington, DC, August 12, 1998.

Epigenetics in developmental toxicology: Toxicant-induced phenocopies and developmental gene expression. Genotoxicity and Environmental Mutagenesis Society, Research Triangle Park, NC, May 1, 1998.

Elucidating mechanisms of developmental toxicity for model and environmental toxicants: 5-Fluorouracil and methanol. Department of Biological Sciences, Florida Institute of Technology, Melbourne, FL, April 23, 1998.

The developmental toxicity of methanol: Basic and applied research. Toxicology and Molecular Biology Branch, National Institute of Occupational Safety and Health, Morgantown, WV, March 9, 1998.

Disruption of embryonal pattern formation by methanol. Department of Toxicology, North Carolina State University, Raleigh, NC, January 27, 1998.

Enzymes. In: Experimental Approaches for Studying Mechanisms of Abnormal Development. Continuing Education Course, Teratology Society, Palm Beach, FL, June 21, 1997.

Introduction and overview, life stage and its impact on risk of environmentally-induced adverse effects. Third Annual HERL Symposium: Susceptibility and Risk, Durham, NC, September 4, 1996.

Interindividual variability in reproductive/developmental toxicity. ILSI Risk Science Institute Workshop on Human Variability, Washington, DC, October 16, 1995 (with Drs. G. Daston and C. Kimmel).

Developmental toxicity of the alternative fuel, methanol. Department of Toxicology, North Carolina State University, Raleigh, NC, February 14, 1995.

Teratogenicity of methanol in mice: Characterization and human extrapolation issues. Health Effects Research Laboratory Third Annual Open House, U.S. Environmental Protection Agency, Research Triangle Park, NC, June 8, 1994.

Biologically-based dose-response modeling of developmental toxicity. School of Veterinary Medicine, University of Illinois, Urbana, IL, March 25, 1994.

Developmental toxicity of methanol: Dose-response, critical periods and mechanistic studies in the mouse. Health Effects Institute Annual Conference, Reston, VA, May 3, 1994.

Biologically-based dose response models for developmental toxicity. Symposium: New Approaches to Developmental Toxicology. The 1993 Annual Meeting of the American College of Toxicology, New Orleans, LA, October 1993.

Developmental effects of methanol. Symposium: Emerging Perspectives on New Transportation Fuels: Methanol. The 1993 Annual Meeting of the Society of Toxicology, New Orleans, LA, February 1993.

Developmental toxicity of inhaled methanol in the mouse. Office of Mobile Sources, U.S. EPA, Ann Arbor, MI, September 29, 1992.

Homeobox genes and transcriptional regulation in development. Genotoxicity and Environmental Mutagenesis Society Meeting, Raleigh, NC, April 24, 1992.

Cellular techniques in developmental toxicology. Society of Toxicology Continuing Education Course, "Cell and Molecular Techniques in Developmental Toxicology," Seattle, WA, February 23, 1992.

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## CONFERENCE ABSTRACTS AND PRESENTATIONS

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**Rogers JM**, Heintz MM, Haws LC. Reproduction/developmental toxicity screen and extended one generation reproductive toxicity study of decahydronaphthalene in Sprague Dawley rats. Abstract 3864, Society of Toxicology 64<sup>th</sup> Annual Meeting, Orlando, FL, March 2025.

Fitch S, Ellis-Hutchings R, **Rogers J**, Marty S, Rushton E, ... Wikoff D. Study quality evaluation of literature reporting plastic microparticle exposure against reproductive and developmental toxicity endpoints. Abstract 5159, Society of Toxicology 63rd Annual Meeting, Salt Lake City, UT, March 2024.

Fitch S, **Rogers J**, Marty S, Ellis-Hutchings R, Becker R, Wikoff D. Development of a study quality tool for use in a systematic review of literature reporting microplastic exposure and reproductive and developmental toxicity. Poster presented at Society of Toxicology 62nd Annual Meeting, Nashville, TN, March 2023.

Heintz MM, Chappell GA, Thompson CM, Wolf JC, **Rogers JM**, Haws LC. HFPO-DA (GenX) transcriptomic responses in pregnant and non-pregnant rat livers: Analyses to inform the role of maternal effects on neonatal toxicity. Poster presented at Society of Toxicology 61st Annual Meeting, San Diego, CA, March 2022.

**Rogers JM**, Heintz MM, Thompson CM, Haws LC. Development of a putative adverse outcome pathway for neonatal mortality in rodents: Implications for human health risk assessments of PFAS. Poster presented at Society of Toxicology 61st Annual Meeting, San Diego, CA, March 2022.