

SUSAN M. SMITH, PH.D.
CURRICULUM VITA

Nutrition Research Institute
500 Laureate Way
Department of Nutrition
School of Public Health
University of North Carolina at Chapel Hill
Kannapolis, NC 28081

Susan_Smith@unc.edu
Suesmith@email.unc.edu
Tel: (704) 250-5065
Fax: (704) 250-5001
Cell: (608) 217-2999

PROFESSIONAL EXPERIENCE

2021 – **Dickson Foundation / Harris-Teeter Distinguished Professor of Nutrition**, University of North Carolina at Chapel Hill
2017 – **Deputy Director of Science**, UNC-Nutrition Research Institute, University of North Carolina at Chapel Hill
2016 – **Professor**, UNC-Nutrition Research Institute & Department of Nutrition, University of North Carolina at Chapel Hill
2016 – **Professor Emerita**, Dept. Nutritional Sciences, UW-Madison
2004 – 2016 **Professor**, Dept. Nutritional Sciences and Affiliate Faculty, Waisman Center; University of Wisconsin-Madison, Madison WI
1997 – 2004 **Associate Professor**, Dept. Nutritional Sciences, University of Wisconsin-Madison, Madison WI
1990 – 1997 **Assistant Professor**, Dept. Nutritional Sciences, University of Wisconsin-Madison, Madison WI
1987 – 1990 **Postdoctoral Research Fellow**, Dept. Cellular and Molecular Physiology, Harvard Medical School, Boston MA

EDUCATION

1987-1990	Developmental Biol.	Harvard Medical School, Boston MA
1982-1987	Ph.D. Biochemistry	University of Wisconsin-Madison, Madison, WI
1979-1982	B.S. Biochemistry	Purdue University, West Lafayette IN
1978-1979	Chemistry	Western Michigan University, Kalamazoo MI

AWARDS AND PROFESSIONAL ACTIVITIES

2023 – 2025 **Member, National Academy of Sciences, committee reviewing evidence on “Alcohol and Health”.**
2023 **Co-organizer, “Future Directions in Choline” research symposium. UNC Nutrition Research Institute, Kannapolis NC (Nov 5-7)**
2021 – 2022 **Expert witness for Perkins Coie LLC on birth defect risk in aerospace workers**
2016 – 2021 **National Advisory Council on Alcohol Abuse and Alcoholism, National Institute on Alcohol Abuse and Alcoholism (NIAAA)**
2015 – 2017 **Vilas Associate, UW-Madison (Year 2 declined due to UNC relocation)**
2014 – 2016 **External steering committee, U54 Cooperative Agreement, North Carolina Central University & University of North Carolina**
2014 **Dannon Institute, Mid-Career Nutrition Leadership Institute, selected participant**

2012 Sabbatical release w/R. Tanguay, Oregon State Univ., to learn zebrafish embryology.
 2012 James G. Wilson Outstanding Publication Award, Teratology Society
 2010-2011 President, Fetal Alcohol Spectrum Disorders Study Group (Vice-President 2009-2010; Secretary/Treasurer 2008-2009)
 2008-2011 Expert Witness for GlaxoSmithKline on Paroxetine and Cardiovascular Malformations
 2007-2018 Method to Extend Time in Research (MERIT) award, NIAAA (R37 AA11085)
 2006, 2008 Chair, FASEB Summer Research Conference on *The Retinoids* (Co-chair, 2006)
 2005-2006 Chair, NIH study section NAL (Neurotoxicology & Alcohol).
 2004-2014 Associate Editor, *Birth Defects Research: Clinical and Molecular Teratology*
 2003-2014 Member, Editorial Board, *Developmental Dynamics*
 2002-2010 National Board of Directors, House Rabbit Society (Richmond CA)
 2001-2006 Member, NIH study section NAL (former ALTX-3), Neurotoxicology
 2001 Organizing Committee, Research Society on Alcoholism Annual Meeting, Montreal Canada.
 1994-1995 Future Leader in Nutrition Awardee, International Life Sciences Institute
 1988-1990 Research Fellow of the Muscular Dystrophy Association

Ad hoc reviewer for >60 NIH study sections in the areas of Nutrition, Alcohol & Alcoholism, Cardiac Development, Craniofacial Development, Neurobiology, Psychopharmacology, Comparative Biology, Developmental Pharmacology, Aging. Reviewer of multiple funding mechanisms including investigator-initiated proposals (R01, R03, R21, K awards), SBIR, pre/postdoctoral fellowships, training grants, conferences (R13), and research centers.

Ad hoc reviewer of research proposals for USDA, NSF, American Heart Association, March of Dimes, Hatch formula awards, Israel Science Foundation, Natural Sciences and Engineering Research Council of Canada; Killam Research Fellowships (Canada); Neurological Foundation (New Zealand), Arizona Biomedical Research Commission; Academy of Sciences (Czech Republic)

PROFESSIONAL AFFILIATIONS

Fetal Alcohol Spectrum Disorders Study Group	American Society for Nutrition
Research Society on Alcoholism	Alpha Chi Sigma (professional in chemistry)

JOURNAL SERVICE

2004 – 2014 Associate Editor, *Birth Defects Research: Clinical and Molecular Teratology*
 2003 – 2014 Editorial Board, *Developmental Dynamics*

Ad Hoc Reviewer:

Nature, Development, Developmental Biology, Alcoholism: Clinical and Experimental Research, Alcohol, Alcohol & Alcoholism, American Journal of Clinical Nutrition, BBA-Lipids; Birth Defects Research A/B/C, Biochemical Pharmacology, Biotechniques, Brain Research, Cardiovascular Toxicology, Cleft Palate-Craniofacial Journal, Developmental Dynamics, Endocrinology, FASEB Journal, Frontiers journals, Int. J. Developmental Biology, J. Biological Chemistry, J. Cell Biology, J. Cellular Physiology, J. Lipid Research, J. Neurochemistry, J. Neurocytology, J. Neurosciences, J. Nutrition, J. Pediatrics, J. Pharmacology & Experimental Therapeutics, J. Physiology, Matrix Biology, Molecular Pharmacology, Neuropharmacology, Neurotoxicology & Teratology, Nutrients, PLoS ONE, Proceedings for the Society of Experimental Biology and Medicine, Reproductive Toxicology, Toxicology, Toxicology & Applied Pharmacology, Toxicological Sciences

CURRENT AND FUTURE RESEARCH INTERESTS (RED REFLECTS THIS PAST YEAR)

My interdisciplinary research investigates the molecular mechanisms underlying how prenatal dietary choices affect offspring health. Launching from deep training in nutrition, biochemistry, and developmental biology, I use molecular-focused approaches to understand how dietary components – both nutrients and toxicants – affect the offspring. Much of our work emphasizes the interaction between nutrition and alcohol to affect offspring risk for Fetal Alcohol Spectrum Disorder (FASD), a leading cause of cognitive disability that affects 3%-5% of the US population. Our past work also has investigated the actions of retinoids (vitamin A), iron, and toxicants including trichloroethylene and TCDD on embryo/fetal development. We focus on underlying mechanisms of action and incorporate novel methodologies to address these. **Our preclinical models have included diet- and genetic-manipulated mice and rats, zebrafish, and the *in ovo* chick; clinical studies focus on individuals diagnosed with FASD.**

One major research line investigates the mechanism by which alcohol causes a selective apoptosis of neural crest progenitors to create the unique craniofacial dysmorphology of FASD. Now one of the best understood mechanisms of alcohol's neurotoxicity, we used small molecule interventions and targeted misexpression to document that alcohol causes the GPCR-G α s-dependent release of intracellular calcium. The subsequent activation of CaMKII targets novel phosphorylation sites within the transcriptional effector β -catenin to destabilize the protein and suppress canonical Wnt signaling. This work was supported by a 10-yr MERIT award from NIAAA and was recognized with the James Wilson Award from the Teratology Society. **Our current R01 investigates how alcohol induces nucleolar stress to activate p53 within neural crest, a mechanism that emerged from our whole transcriptome analysis of embryos having differential vulnerability to alcohol-induced apoptosis. We discovered a similar ribosome dysbiogenesis in alcohol-exposed mouse neural stem cells, suggesting this is a broader mechanism of alcohol's action. Work has begun to interrogate the cellular metabolic deficits that drive alcohol's action.**

Our research also interrogates the neglected intersection between nutrition and FASD. A recently completed R01 documented that maternal iron status is a major factor driving fetal vulnerability to FASD, affecting key diagnostics including growth, myelination, and associative learning. We showed that alcohol dysregulates maternal-fetal iron homeostasis, altering hepcidin production to cause fetal anemia and brain iron-deficiency through induction of IL-6. We evaluated the ability of a standard iron therapeutic to improve offspring growth, iron status, and cognition in alcohol-exposed pregnancies, work with clinical relevance as iron deficiency is common in childbearing-aged women, and in communities having high FASD rates. **Our deep -omic investment (metabolomics, transcriptomics, DNA methylation) characterizes how alcohol alters the metabolic status of the maternal-dyad. This revealed that the alcohol-exposed mother fails to develop gestational insulin-resistance, and her efficient glucose clearance makes less available to the fetus and forces it into a gluconeogenic state that drives intrauterine growth restriction. Her PAE offspring have worsened glucose tolerance and increased adiposity as they age, and these measures strongly correlate with their cognitive impairment.** A gestational choline intervention attenuates both the cognitive and metabolic deficits in the offspring. Finally, we entered the Precision Nutrition sphere and identified polymorphisms within the choline transporter *SLC44A1* that are associated with cognitive benefit in children with FASD who received a choline intervention; my UH2 extends this association to children with FASD under normal choline nutriture, and to normotypic children. This analysis has also identified associations between child cognitive performance and additional nutrient-related genes including those affecting one-carbon pools and essential fatty acids. **Further exploration of similar polymorphisms in this cohort is the focus of a pending R01 from NIAAA (15ile, impact score 19).**

PEER-REVIEWED PUBLICATIONS (ORCID: 0000-0003-4782-6857)

IN PREPARATION/REVIEW

110. Flentke GR, Hacker TA, Bauer C, Wendler CC, Whitesell L, Abouelleil M, Springstroh B, Lough J, **Smith SM**. Retinol Binding Protein-4 (RBP4) promotes cardiac hypertrophy through the GSK3 β /GATA4 signaling pathway. (in preparation)
109. Rivera OC, Amos-Kroohs RM, Clugston RD, Yen C-LE, **Smith SM**. Binge alcohol exposure impairs mammary gland maturation and depletes adipocyte lipids in a mouse model of perinatal lactation. (in preparation)
108. Saini N, Kwan STC, Flentke GR, Mooney SM, **Smith SM**. Alcohol alters placental signaling through TORC1 in a sex-dependent manner. (in preparation)
107. **Smith SM**, Walter KR, Mooney SM. Prenatal alcohol exposure alters the metabolic phenotype in a mouse model of Alzheimer's Disease. (in preparation)
106. McWilliams S, Hill O, Ipsiroglu OS, Clemens S, Weber AM, and the Iron Conundrum Working Group. The iron deficiency conundrum – limitations of existing clinical practice guidelines and next steps. (submitted to *Lancet* ~2/20/2024)
105. Osman S Ipsiroglu, Gerhard Klösch, Mark Stein, Sarah Blunden, Serge Brand, Stefan Clemens, Samuele Cortese, Alexander Dück, Thomas Dye, Paul Gringras, Hans-Jürgen Kühle, Kate Lawrence, Michel Lecendreux, Silvia Miano, Julian Mollin, Lino Nobili, Judith Owens, Parveer Kaur Pandher, Dena Sadeghi-Bahmani, Angelika Anita Schlarb, Barbara Schneider, Rosalia Silvestri, Susan Smith, Karen Spruyt, and Margaret Danielle Weiss. Phenotyping Sleep Disturbances in ADHD and Identifying Harmonised Outcome Measures. A Precision Medicine Approach to Disruptive Behaviours. *Somnologie* (in revision 4/2/2024 to *Somnologie*)
104. Flentke GR, Wilkie T, **Smith SM**. Alcohol induces nucleolar stress in early neural crest progenitors: evidence that the craniofacial dysmorphology of Fetal Alcohol Spectrum Disorders is a ribosomopathy. (submitted 10/18/2023 to *PLOS ONE*)
103. Wong EC, Poole C, Sley E, Lupo PJ, Nichols HB, **Smith SM**, Olshan AF, Desrosiers TA. Non-chromosomal birth defects and childhood cancer: a systematic review with meta-analysis. (submitted 9/6/2023 to *Ped Perinatal Epidem.*)

PUBLISHED

102. Huang Y, Flentke GR, Rivera OC, Saini N, Mooney SM, **Smith SM**. 2024. Alcohol exposure induces nucleolar stress and apoptosis in mouse neural stem cells and late-term fetal brain. *Cells* 13(5):440. doi: 10.3390/cells13050440.
101. **Smith SM**, Weathers TD, Wetherill L, Virdee MS, Mattson SN, & the CIFASD Consortium. 2024. Polymorphisms in the choline transporter *SLC44A1* are associated with reduced cognitive performance in individuals who experienced heavy prenatal alcohol exposure. *Am J Clin Nutr.* 119(1):117-126. doi: 10.1016/j.ajcnut.2023.10.003.
100. Saini N, Mooney SM, **Smith SM**. 2023. Alcohol blunts pregnancy-mediated insulin resistance and reduces fetal brain glucose despite elevated fetal gluconeogenesis, and these changes associate with fetal weight outcomes. *FASEB J.* 37(10):e23172.
99. Mooney SM, Billings E, McNew M, Munson CA, Shaikh SR, **Smith SM**. 2023. Behavioral changes in *FPR2/ALX* and *Chemr23* receptor knockout mice are exacerbated by prenatal alcohol exposure. *Front. Neurosci.* 17:1187220. doi: 10.3389/fnins.2023.1187220. PMC10357512
98. Wong EC, Lupo PJ, Desrosiers TA, Nichols HB, **Smith SM**, Poole C, Canfield M, Shumate C, Chambers T, Scraw JM, Nembhard WN, Yazdy MM, Nestoridi E, Janitz AM, Olshan AF. 2023. Associations between birth defects with neural crest cell origins and pediatric embryonal tumors. *Cancer.* 129(22):3595-3602. PMC10615683
97. Helfrich KK, Saini N, Kwan STC, Rivera OC, Mooney SM, **Smith SM**. 2023. Fetal anemia and

- elevated hepcidin in a mouse model of Fetal Alcohol Spectrum Disorder. *Pediatric Res* 94(2):503-511. doi: 10.1038/s41390-023-02469-6. PMC9786146
96. Walter KR, Ricketts DK, Presswood BH, **Smith SM**, Mooney SM. 2023. Prenatal alcohol exposure causes persistent microglial activation and age- and sex-specific effects on cognition and metabolic outcomes in an Alzheimer's disease mouse model. *Am J Drug Alc Abuse* 49:302-320. doi: 10.1080/00952990.2022. 2119571. PMID: 36194703 (PMC underway)
 95. Hasken JM, De Vries MM, Marais A-S, May PA, Parry CDH, Seedat S, Mooney SM, **Smith SM**. 2022. Untargeted metabolome analysis of alcohol-exposed pregnancies reveals metabolite differences that are associated with infant birth outcomes. *Nutrients* 14:5367 doi.org/10.3390/nu14245367. PMC9786146
 94. Helfrich KK, Saini N, Kwan STC, Rivera OC, Hodges R, **Smith SM**. 2022. Gestational iron supplementation improves fetal outcomes in a rat model of prenatal alcohol exposure. *Nutrients*. 14(8), 1653. doi.org/10.3390/nu14081653. PMC9025692
 93. **Smith SM**, Pjetri E, Friday WB, Presswood BH, Ricketts DK, Walter KR, Mooney SM. 2022. Aging-related behavior, adiposity, and glucose impairments and their association following prenatal alcohol exposure in the C57BL/6J mouse. *Nutrients*. 14(5):1438. doi.org/10.3390/nu14071438. PMC9002573
 92. Saini N, Virdee MS, Kwan STC, Helfrich KK, Flentke GR, Mooney SM, **Smith SM**. 2022. Untargeted metabolomics reveals suppressed maternal gluconeogenesis in a mouse model of prenatal alcohol exposure. *Nutrients*. 14(5):1096. doi: 10.3390/nu14051096. PMC8912878
 91. Brannan KE, Helfrich KK, Flentke GR, **Smith SM**, Livingston KA, van Rensburg CJ. 2022. Influence of incubation, diet, and sex on avian uncoupling protein expression and oxidative stress in market age broilers following exposure to acute heat stress. *Poult Sci*. 101:101748. doi.org/10.1016/j.psj.2022.101748. PMC8917286
 90. Kwan STC, Ricketts DK, Presswood BH, **Smith SM**, Mooney SM. 2021. Prenatal choline supplementation during mouse pregnancy has differential effects in alcohol-exposed fetal organs. *Alcohol Clin Exp Res*. 45:2471-2484. doi: 10.1111/acer.14730. PMC8712461
 89. Mooney SM, Pjetri E, Friday WB, **Smith SM**. 2021. Growth and behavioral differences in a C56BL/6J mouse model of prenatal alcohol exposure. *Alcohol* 97:51-57. doi: 10.1016/j.alcohol.2021.09.031. PMC8643335
 88. **Smith, SM**, Virdee MS, Eckerle JK, Sandness KE, Georgieff MK, Boys CJ, Zeisel SH, Wozniak JR. 2021. Polymorphisms in SLC44A1 are associated with cognitive improvement in children diagnosed with Fetal Alcohol Spectrum Disorder: an exploratory study of oral choline supplementation. *Am J Clin Nutr*. 114:617-627. PMC8326038
 87. Saini N, Virdee M, Helfrich KK, Kwan STC, **Smith SM**. 2021. Global metabolic profiling reveals distinct hepatic metabolite fingerprints of the C57Bl/6J mouse dam and fetus in pregnancy. *Metabolomics* 17(2):23. doi: 10.1007/s11306-021-01773-8. PMC8543356
 86. Virdee MS, Saini N, Kay CD, Neilson AP, Kwan STC, Helfrich KK, Mooney SM, **Smith SM**. 2021. An enriched biosignature of gut microbiota-dependent metabolites characterizes maternal plasma in a mouse model of fetal alcohol spectrum disorder. *Sci Reports* 11:248. PMC7794323
 85. Griffin LE, Essenmacher L, Racine KC, Iglesias-Carres L, Tessem JS, **Smith SM**, Neilson AP. 2021. Diet-induced obesity in genetically diverse Collaborative Cross mouse founder strains reveals diverse phenotype response and amelioration by quercetin treatment in the 129S1/SvImJ, PWK/EiJ, CAST/PhJ, and WSB/EiJ mice. *J Nutr Biochem* 87:108521. PMID: 33039581
 84. Kwan STC, Presswood BH, Helfrich KK, Baulch JW, Mooney SM, **Smith SM**. 2020. An interaction between fetal sex and placental weight and efficiency predicts intrauterine growth in response to maternal protein insufficiency and gestational exposure window in a mouse model of FASD. *Biol Sex Diff* 11:40. PMC7131893

83. **Smith SM.** 2020. Gastrointestinal Physiology and Nutrition of the Rabbit. In: *Ferrets, Rabbits and Rodents: Clinical Medicine and Surgery, 4th Ed.* Ed: KE Quesenberry, C Mans, C Orcutt. Elsevier. (book chapter)
82. Kwan STC, Kezer C, Helfrich KK, Saini N, Huebner SM, Flentke GR, Kling PJ, **Smith SM.** 2019. Maternal iron nutriture modulates placental development in a rat model of Fetal Alcohol Spectrum Disorder. *Alcohol.* 84:57-66. doi: 10.1016/j.alcohol.2019.11.003. PMC7131893
81. Saini N, Helfrich KK, Kwan STC, Huebner SM, Abazi J, Flentke GR, Blohowiak SE, Kling PJ, **Smith SM.** 2019. Alcohol's dysregulation of maternal-fetal IL6 and pSTAT3 is a function of maternal iron status. *Alcohol Clin Exp Res.* 43:2332-2343. PMC7001854
80. Flentke GR, Garic A, Berres ME, **Smith SM.** 2019. Acute Alcohol Exposure Induces Snai2 to Suppress Proliferation and Enhance Migration and Apoptosis in Neural Crest Progenitors. *Birth Defects Res.* 111(12):686-699. PMC7017393
79. Al-Shaer AE, Flentke GR, Berres ME, Garic A, **Smith SM.** 2019. Exon-level machine learning analyses elucidate novel candidate miRNA targets in an avian model of Fetal Alcohol Spectrum Disorder. *PLoS Comp Biol* 15(4):e1006937. PMC6478348
78. Amos-Kroohs RM, Nelson DW, Hacker TA, Yen C-LE, **Smith SM.** 2018. Does prenatal alcohol exposure cause a metabolic syndrome? (Non-)evidence from a mouse model of prenatal alcohol exposure. *PLoS ONE* 13(6):e0199213. PMC6023152
77. Huebner SM, Helfrich KK, Saini N, Blohowiak SE, Cheng AA, Kling PJ, **Smith SM.** 2018. Dietary iron fortification normalizes fetal hematology, hepcidin, and iron distribution in a rat model of prenatal alcohol exposure. *Alcohol Clin Exp Res.* 42:1022-1033. PMC6317737
76. Helfrich KK, Saini N, Kling PJ, **Smith SM.** 2018. Maternal iron nutriture as a critical modulator of FASD risk in alcohol-exposed pregnancies. *Biochem Cell Biol.* 96:204-212. PMC5914169
75. **Smith SM,** Flentke GR. 2018. The avian embryo as a model for fetal alcohol spectrum disorders. *Biochem Cell Biol.* 96:98-106. PMC5914177
74. Berres ME, Garic A, Flentke GR, **Smith SM.** 2017. Transcriptome profiling identifies ribosome biogenesis as a target of alcohol teratogenicity and vulnerability during early embryogenesis. *PLoS ONE* 12:e0169351. PMC5207668
73. Huebner SM, Blohowiak SE, Kling PJ, **Smith SM.** 2016. Prenatal alcohol exposure alters fetal iron distribution and elevates hepatic hepcidin in a rat model of fetal alcohol spectrum disorders. *J. Nutrition* 146:1180-1188. PMC4877631
72. Amos-Kroohs RM, Fink B, Smith CJ, Van Calcar SC, Wozniak JR, **Smith SM.** 2016 Significantly dysregulated eating behavior and hyperphagia in children with prenatal alcohol exposure. *J Pediatrics* 169:194-200. PMC4729627
71. Huebner SM, Tran TD, Rufer ES, **Smith SM.** 2015. Maternal iron deficiency synergizes with alcohol to reduce associative learning and its neurocircuitry in a rat model of Fetal Alcohol Spectrum Disorders. *Alcohol Clin Exp Res* 39:2097-1107. PMC4624509
70. **Smith SM,** Garic A, Flentke GR, Berres ME. 2014. Neural crest development in fetal alcohol syndrome. *Birth Defects Res C Embryo Today.* 102:210-220. PMC4827602
69. **Smith SM,** Garic A, Berres ME, Flentke GR. 2014. Genomic factors that shape craniofacial outcome and neural crest vulnerability in FASD. *Front Genet.* 5:224. PMC4124534
68. Garic A, Berres ME, **Smith SM.** 2014. High-Throughput Transcriptome Sequencing Identifies Candidate Genetic Modifiers of Vulnerability to Fetal Alcohol Spectrum Disorders. *Alcohol Clin Exp Res.* 38:1874-1882. PMC4124534
67. Bolnick J, Karana R, Chiang P, Kilburn B, Romero R, Diamond M, **Smith SM,** Armant DR. 2014. Apoptosis of alcohol-exposed human placental cytotrophoblast cells is downstream of intracellular calcium signaling. *Alcohol Clin Exp Res.* 38:1646-1653. PMC4049269
66. Flentke GR, Klingler RH, Tanguay RL, Carvan MJ^{3rd}, **Smith SM.** 2014. An evolutionarily-

- conserved mechanism of calcium-dependent neurotoxicity in a zebrafish model of FASD *Alcohol Clin Exp Res.* 38:1255-1265. PMC3999225
65. Flentke GR, Garic A, Hernandez M, **Smith SM**. 2014. CaMKII represses transcriptionally-active β -catenin to mediate acute ethanol neurodegeneration and can phosphorylate β -catenin. *J Neurochem* 128:523-535. PMC3946158
 64. Werts RL, Van Calcar SC, Wargowski DS, **Smith SM**. 2013. Inappropriate feeding behaviors and dietary intakes in children with FASD or probable PAE. *Alcohol Clin Exp Res.* 38:871-878. PMC3959629
 63. Rufer ES, Tran TD, Attridge MM, Andrzejewski ME, **Smith SM**. 2012. Adequacy of maternal iron status protects against behavioral, neuroanatomical and growth deficits in Fetal Alcohol Spectrum Disorders. *PLoS One.* 7(10):e47499. PMC3477151
 62. Palmer JA, Poenitzsch AM, **Smith SM**, West PR, Cezar GG. 2012. Metabolic biomarkers of prenatal alcohol exposure. *Alcohol Clin Exp Res* 36: 1314-1324. PMC3374055
 61. **Smith SM**, Flentke GR, Garic A. 2012. Avian Models in Teratology and Developmental Toxicology. In: *Methods in Molecular Biology, v.889: Developmental Toxicology*. Ed. C. Harris, JM Hansen. Humana Press, Totowa NJ. pp 85-103. PMC4560095
 60. Garic A, Flentke GR, Amberger E, Hernandez M, **Smith SM**. 2011. CaMKII activation is a novel effector of alcohol's neurotoxicity in neural crest stem/progenitor cells. *J Neurochem* 118:646-657. PMC3137720
 59. Flentke GR, Garic A, Amberger E, Hernandez M, **Smith SM**. 2011. The Calcium-Mediated Repression of β -Catenin and Its Transcriptional Signaling Mediates Neural Crest Cell Death in an Avian Model of Fetal Alcohol Syndrome. *Birth Defects Res. A* 91:591-602. PMC4827605 Winner of James G. Wilson Outstanding Publication Award for 2012 from the Teratology Society.
 58. Kane CJ, **Smith SM**, Miranda R. 2012. Proceedings of the 2010 Annual Meeting of the FASD Study Group. *Alcohol* 46:107-114. PMC3258329
 57. Zhou F, Kane CJ, **Smith SM**. 2012. Proceedings of the 2009 Annual Meeting of the FASD Study Group. *Alcohol* 46:101-105. PMC3645502
 56. **Smith SM**, Flentke GR, Kragtorp KA, Tessmer T. 2010. Ethanol Exposure during the Early First Trimester Equivalent Impairs Reflexive Motor Activity and Heightens Fearfulness in an Avian Model. *Alcohol* 45:57-63. PMC3011049
 55. Rufer ES, Hacker TA, Flentke GR, Drake VJ, Brody MJ, Lough J, **Smith SM**. 2010. Altered cardiac function and ventricular septal defect in avian embryos exposed to low-dose trichloroethylene. *Toxicol. Sci.* 113:444-452. PMC2807037
 54. **Smith SM**. 2010. Environmentally-induced heart malformations. In: *Comprehensive Toxicology 2nd Edition*. (Charlene McQueen). Oxford: Elsevier. 229-445.
 53. **Smith SM**. 2010. Ethanol and Cell Death. In: *Comprehensive Toxicology 2nd Edition*. (Charlene McQueen). Oxford: Elsevier. 223-238.
 52. Garic-Stankovic A, Hernandez M, Flentke GR, Zile M, **Smith SM**. 2008. A Ryanodine Receptor-Dependent Ca_i^{2+} Asymmetry at Hensen's Node Mediates Avian Lateral Identity. *Development* 135:3271-3280. PMC2999519
 51. **Smith SM**. 2008. The avian embryo in fetal alcohol research. In: *Alcohol: Methods and Protocols*, L. Nagy, editor. Methods Mol Biol. 447:75-84. PMID: 18369912
 50. Wolff GS, Chiang PJ, **Smith SM**, Romero R, Armant DR. 2007. EGF-like growth factors prevent apoptosis of alcohol-exposed human placental cytotrophoblast cells. *Biol Reprod.* 77:53-60. PMC1950777
 49. Drake VJ, Koprowski SL, Hu N, **Smith SM**, Lough JW. 2006. Cardiogenic effects of trichloroethylene and trichloroacetic acid following exposure during heart specification of avian development. *Toxicol. Sci.* 94:153-162. PMID: 16917067

48. Drake VJ, Koprowski SL, Hu N, Lough JW, **Smith SM**. 2006. Trichloroethylene exposure during cardiac valvuloseptal morphogenesis alters cushion formation and cardiac hemodynamics in the avian embryo. *Env. Health Perspect.* 114:842-847. PMC1480523
47. Garic-Stankovic A, Hernandez M, Flentke GR, **Smith SM**. 2006. Structural constraints for alcohol-stimulated Ca²⁺ release in neural crest, and dual agonist/antagonist properties of *n*-octanol. *Alcohol Clin Exp Res* 30:552-559. PMID: 16499497
46. Drake VJ, Koprowski SL, Lough JW, **Smith SM**. 2006. The gastrulating chick embryo as a model for evaluating teratogenicity: a comparison of three approaches. *Birth Defects Res A* 76:66-71. PMID: 16333841
45. Kilburn BA, Chiang PJ, Wang J, Flentke GR, **Smith SM**, Armant DR. 2006. Rapid induction of apoptosis in gastrulating mouse embryos by ethanol and its prevention by HB-EGF. *Alcohol Clin Exp Res* 30:127-134. PMC1679959
44. **Smith SM**, Debelak-Kragtorp KA. 2006. Neural crest and alcohol exposure. In: *The Developing Brain: Lessons Learned from Alcohol and Nicotine Exposures*. M.W. Miller, editor. New York: Oxford University Press. Pages 279-294.
43. Garic-Stankovic A., Hernandez MA, Flentke GR, Debelak-Kragtorp KA, Armant DR, **Smith SM**. 2005. Ethanol triggers neural crest apoptosis thru the selective activation of a pertussis toxin-sensitive G-protein and a phospholipase C β -dependent Ca²⁺ transient. *Alcohol Clin Exp Res* 29:1237-1246. PMID: 16046880
42. Desai, T, Malpel S, Flentke GR, **Smith SM**, Cardoso WV. 2004. Retinoic acid signaling is essential for FGF10 expression and respiratory tract morphogenesis in the developing foregut. *Dev Biol* 273:402-415. PMID: 15328022
41. Flentke GR, Baker MW, Docterman KE, Power S, Lough J, **Smith SM**. 2004. Microarray analysis of retinoid-dependent gene activity during rat embryogenesis: increased collagen fibril production in a model of retinoid insufficiency. *Dev Dyn* 229:886-898. PMID: 15042712
40. Wendler CC, Schmoldt A, Flentke GR, Case LC, Quadro L, Blaner WS, Lough J, **Smith SM**. 2003. Increased fibronectin deposition in embryonic hearts of retinol-binding protein-null mice. *Circ Res* 92:920-928. PMC3752713
39. Debelak-Kragtorp KA, Armant DR, **Smith SM**. 2003. Ethanol-induced cephalic apoptosis requires phospholipase C-dependent intracellular calcium signaling. *Alcohol Clin Exp Res* 27:515-523. PMID: 12658119
38. Lin M, Zhang M, Abraham M, **Smith SM**, Napoli JL. 2003. Mouse RALDH4: molecular cloning, cellular expression, and activity in 9-*cis*-retinoic acid biosynthesis in intact cells. *J. Biol. Chem.* 278:9856-9861. PMID: 12519776
37. Thackaberry EA, Bedrick EJ, Goens MB, Danielson L, Lund AK, Gabaldon D, **Smith SM**, Walker MK. 2003. Insulin regulation in AhR-null mice: embryonic cardiac enlargement, neonatal macrosomia, and altered insulin regulation and response in pregnant and aging AhR-null females. *Toxicol Sci* 76:407-417. PMID: 12970579
36. Thackaberry EA, Gabaldon DM, Walker MK, **Smith SM**. 2002. Aryl hydrocarbon receptor null mice develop cardiac hypertrophy and increased hypoxia inducible factor-1 in the absence of cardiac hypoxia. *Cardiovasc Tox* 2:263-273. PMID: 12665660
35. Docterman KE, **Smith SM**. 2002. Of *Meis* and men: lessons from a microarray study of teratogen action. *Teratology* 66:217-223.
34. Zhang M, Chen W, **Smith SM**, Napoli JL. 2001. Molecular characterization of mouse retinol dehydrogenase type 1 (RDH1): a rate-limiting enzyme of all-*trans*-retinoic acid synthesis *in vivo*. *J Biol Chem* 276:44083-44090. PMID: 11562362
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PATENTS AWARDED

- 2010 U.S. Patent 7,838,561. "Method for Preventing or Treating Cardiac Hypertrophy." **SM Smith**, GR Flentke, J Lough. This shows that low retinoic acid status delays cardiomyocyte senescence and attenuates hypertrophy responses in response to overload challenge.
- 2017 Disclosure assigned to UNC-Chapel Hill, "Method to Treat or Prevent Alcohol Cell and Organ Damage." **SM Smith**.

RESEARCH SUPPORT

Submitted

44. NIAAA. Smith/Mooney co-PIs. "Nutrition in Prenatal Alcohol Exposure." Tests hypothesis that PAE limits omega-3 fatty acids transport and metabolism to promote neuroinflammation, and that polymorphisms in related genes are associated with cognitive impairment in children with PAE. Revision under review for June 2024.
43. NIAAA, F31, Hannah Petry; Mooney/Smith, co-mentors. "Mechanism of Choline in Prenatal Alcohol Fetal Brain". Uses untargeted transcriptomics to identify underlying mechanisms by which

prenatal choline remediates alcohol's damage to the developing brain. Fellowship proposal by Hannah Petry to NIAAA (submitted 4/7/2024).

Pending

42. NIAAA. Smith/Mooney, co-PIs. "One-Carbon Metabolism in Fetal Alcohol Spectrum Disorders." Tests hypothesis that polymorphisms in 1C metabolism-related genes are associated with worsened cognition in children with FASD, and that ALDH1L1 functional polymorphisms influence the severity of those impairments using a mouse KO model. (received 1%ile, 19 impact score).

Current Support

41. NIAAA, K99/R00 AA28291. Saini N, PI. "Metabolomic Phenotyping of Maternal and Fetal Dyad in Prenatal Alcohol Exposure." 9/15/2021 – 8/31/2023. Pathway-to-independence award tests the hypothesis that dysfunctional maternal insulin signaling drives fetal growth deficits in PAE. Dr. Smith mentors Dr. Saini in her lab.
40. NIAAA, UH2 AA029056. Smith SM, PI. "Choline Polymorphisms in FASD". Project within CIFASD (Collaborative Initiative on FASD) tests the hypothesis that variants in the choline transporter SLC44A1 predict which alcohol-exposed infants in a gestational choline intervention trial [NCT01149538] derive the greatest cognitive benefit to the choline.
39. NIAAA, 5 R01 AA11085-26. SM Smith, PI. "Craniofacial Morphogenesis in Prenatal Alcohol Exposure." 4/1/18 – 3/31/23. Investigates role of ribosome dysbiogenesis & mitochondrial dysfunction in the p53-mediated apoptosis of neural crest. Received a 1.0% / 10 impact score.

Previous Support

38. NIAAA, F32 AA028684. Rivera O, PI. "Epigenetic Mechanisms of Neurodevelopment in Prenatal Alcohol Exposure" 6/2/2021 – 12/1/2023. Tests the hypothesis that alcohol alters epigenetic markers in cortical neural stem cells to drive their precocious differentiation and accelerates their migration. It further posits that maternal choline supplementation will normalize these events. Dr. Smith mentors Dr. Rivera in her lab. Received 1%ile / 10- impact score.
37. NIAAA, 1 F32 AA27121. Sze Ting Cecelia Kwan, PI. 9/1/2018 – 12/31/2021. "Maternal-fetal amino acid transfer across placenta in a mouse model of prenatal alcohol exposure." Dr. Smith mentors Dr. Kwan in her laboratory.
36. NIAAA, 7 R01 AA24980. SM Mooney, PI. "Does PAE Increase Susceptibility to ADRD in Later Life?" 10/01/19 – 9/30/20. Supplement to Mooney R01 tests the hypothesis that PAE causes early-onset dementia in the offspring, using our aged C57BL/6J PAE model. Smith is co-I.
35. NIAAA, 1 R01 AA22999. SM Smith, PI. "Prenatal Alcohol Exposure Disrupts Maternal-Fetal Iron Metabolism in FASD" 6/1/14 – 5/31/19. Investigate how prenatal alcohol exposure disrupts maternal-fetal iron homeostasis; identify clinical strategies to enhance maternal and fetal iron status in PAE.
34. NIAAA, Administrative Supplement to R01 AA11085. "Craniofacial Morphogenesis in Prenatal Alcohol Exposure." Diversity supplement supports Dr. Olivia Rivera, a postdoctoral researcher whom I mentor. Investigates role of miRNA in PAE-related facial dysmorphology. Replaced by award of Dr. Rivera's F32 proposal.
33. NSF, #1000246546. Abrar Al-Shaer, PI. "Unsupervised machine learning approaches for discovery of novel gene-pathway interactions." 9/1/2018 – 8/30/2021. Graduate fellowship to Ms. Al-Shaer. Dr. Smith mentored Ms. Al-Shaer in her laboratory.
32. NIAAA, 2 R37 AA11085. SM Smith, PI. "Craniofacial Morphogenesis in Prenatal Alcohol Exposure." 4/1/07 – 3/31/17. \$210,000 (ADC) Identify contribution of ethanol-induced Ca²⁺ transient to the modulation of Wnt-mediated signaling and apoptosis in neural crest. This was a 10-

- year MERIT award from NIAAA.
31. NIAAA, F32 AA24364 R Amos-Kroohs, PI. "Increased Adiposity Risk after Prenatal Alcohol Exposure " 9/30/16 – 9/29/17. Postdoctoral fellowship to Dr. Robyn Amos-Kroohs to study how prenatal alcohol exposure may alter risk for metabolic syndrome in adult mouse following gestational alcohol exposure. Dr. Smith mentored Dr. Amos-Kroohs in her laboratory.
 30. Vilas Associate Award from UW Chancellor's Office. "Does Alcohol Exposure in Pregnancy Increase Obesity Risk in Adulthood?" 7/1/15 – 6/30/17. \$12,500 (ADC) Mouse FASD model to quantify glucose metabolism, body composition, and metabolic profile in alcohol-exposed offspring.
 29. NIAAA, F32 AA21311 S Huebner, PI. "Prenatal Alcohol Exposure Dysregulates Fetal Iron Homeostasis" 4/01/12 – 3/31/15. Postdoctoral fellowship to Dr. Shane Huebner to study how prenatal alcohol exposure alters iron homeostasis in the pregnant rat dam and fetus. Dr. Smith mentored Dr. Huebner in her laboratory.
 28. Hatch, MSN130919. SM Smith, PI. "Iron Homeostasis in Alcohol-Exposed Pregnancy." 10/01/10 – 9/30/14. \$23,000 (ADC) Evaluates iron transport and delivery mechanisms in the pregnant rat and fetus following chronic binge exposure to clinically relevant oral ethanol intakes. Ascertains if alcohol disrupts placental iron transport, and determines if maternal iron supplements benefit the alcohol-exposed offspring.
 27. NIAAA, R21-AA17281. SM Smith, PI; T Tran, co-I (East Carolina University). "Is Maternal Iron Status a Risk Factor in Fetal Alcohol Syndrome?" 4/01/09 – 9/30/12. \$150,000 (ADC). Evaluated maternal iron status as a modifier of pathological and behavioral outcome in a rat model of chronic binge alcohol exposure.
 26. UW-Madison/UW-Milwaukee Intercampus Grants Program. SM Smith, PI." Zebrafish Neurotoxicity Model for Fetal Alcohol Syndrome" 06/01/2011 – 05/31/2012. \$50,000 (\$33,246 to Smith) Performed pilot studies w/M Carvan (UWM) to develop a zebrafish model to study alcohol's effects on brain development.
 25. NIAAA, ARRA Stimulus supplement to AA11085. SM Smith, P.I. "High-throughput Sequencing of Genes Modifying Ethanol Sensitivity." 9/1/2010 - 8/31/2011. \$50,000. Performed RNA-Seq to identify gene expression and SNP changes in related chick strains differing in their ethanol sensitivity.
 24. NIAAA, R21 AA16958. GG Cezar, PI. "Biochemical Pathways & Biomarkers of Alcohol Injury in Early Human Development." 06/01/08 – 5/31/10. \$150,000. Collaboration to characterize the metabolome in ethanol-exposed human ES cultures and hES-derived neurons, to identify biomarkers that inform injury mechanism and have potential diagnostic value. Smith was co-investigator.
 23. USDA NRI, 2008-35200-04446. SM Smith, PI. "14th Biennial FASEB Summer Research Conference on *The Retinoids*." 04/01/08 – 03/31/09. \$10,000. Supports the biennial conference held June 15-20, 2008 at New Haven, CT. Dr. Smith was the Conference Organizer.
 22. NIDDK, R13 DK081216. SM Smith, PI. "14th Biennial FASEB Summer Research Conference on *The Retinoids*." 04/01/08 – 03/31/09. \$24,000. Supports the biennial conference held June 15-20, 2008 at New Haven, CT. Dr. Smith was the Conference Organizer.
 21. March of Dimes Birth Defects Foundation. SM Smith, PI. "14th Biennial FASEB Summer Research Conference on *The Retinoids*." 04/01/08 – 03/31/09. \$5000. Supports the biennial conference held June 15-20, 2008 at New Haven, CT. Dr. Smith was the Conference Organizer.
 20. American Heart Association. SM Smith, PI. "14th Biennial FASEB Summer Research Conference on *The Retinoids*." 04/01/08 – 03/31/09. \$2500. Supports this biennial conference held June 15-20, 2008 at New Haven, CT. Dr. Smith was the Conference Organizer.
 19. Palmer Fund/UW Waisman Institute. SM Smith, PI. Do Maternal, Subclinical Nutrient Deficiencies Enhance the Damage Caused by Prenatal Alcohol Exposure? 07/01/08 – 6/30/10. \$14,000. Pilot study to determine if maternal iron deficiency worsens the behavioral and morphological damage

- caused by developmental alcohol exposure.
18. American Heart Association #0650037Z. SM Smith, PI. "Suppression of Cardiac Hypertrophy by Retinoid Insufficiency" 1/1/06 – 12/31/07. \$60,000 TDC. Examines retinoid action on the process of cardiac hypertrophy in an adult mouse model.
 17. NIAAA, R01 AA11085-06-11. SM Smith, PI. "Craniofacial Morphogenesis in Prenatal Alcohol Exposure." 4/1/01 – 3/31/07. Identify contribution of ethanol-induced Ca²⁺ transient to the modulation of Wnt-mediated signaling and apoptosis in neural crest.
 16. NIEHS, R01 ES11738. J Lough PI, SM Smith, Co-PI. "Risk and Molecular Mechanism of TRI Cardiac Teratogenesis." 9/1/01 – 8/31/07. \$404,652 TDC. Determine how the groundwater contaminant trichloroethylene (TRI) disrupts early cardiac development, using mouse and chick embryo models.
 15. NIHLB, R01 HL61911 J Lough, PI, SM Smith, co-I. "Retinol Binding Protein and Heart Development." 11/1/01-7/31/05. \$150,000 TDC. Characterized at cellular and molecular levels the early cardiac malformation identified in RBP null-mutant mice that are null-mutant for RBP.
 14. NIAAA, R01-AA12057. DR Armant, PI, SM Smith, co-I. "Alcohol-Induced Apoptosis in Embryonic Development." 10/01/99-9/30/02. \$48,384 TDC. Determines whether proximal pathways activated by alcohol exposure are shared by preimplantation and gastrulation-stage mouse embryos, and whether these two stages are differentially programmed in their response.
 13. NIAAA, R29 AA11085. SM Smith, PI. "Craniofacial Morphogenesis in Prenatal Alcohol Exposure." 7/1/96-6/30/01. \$350,000 TDC. Identifies the mechanism responsible for alcohol-induced neural crest cell death and ethanol's impact on the regenerative capacity of this population.
 12. National March of Dimes Birth Defects Foundation, #1-FY98-0402. SM Smith, PI. "Molecular Basis for the Craniofacial Dymorphology Caused by Prenatal Alcohol Exposure." 6/1/98-5/31/00. \$110,000 TDC. Develops cephalometric measures to assess craniofacial development following prenatal alcohol exposure, and examine facial primordia outgrowth to identify gene signals responsible for ethanol's morphological effects, particularly the sonic hedgehog signaling family.
 11. NIEHS, P30 ES09090. "Developmental Toxicology", C Jefcoate, PI. SM Smith, Director of Microanatomy Facility Service Core. 4/1/98-3/31/02. \$2-million TDC; Smith portion \$220,000 TDC. Center Grant supported core facilities, outreach and administration for R01-driven research into Developmental Toxicology.
 10. Hatch/College of Ag. & Life Sciences. "Identification of Retinoid-Dependent Genes during Embryogenesis." SM Smith, PI. 10/1/99-9/30/03. \$100,000 TDC. Identify candidate transcriptional targets of retinoids in embryos thru construction & screening of subtractive cDNA libraries.
 9. NHLBI, #BH953016. "Cardiac Valvuloseptal Morphogenesis" RR Markwald, PI; SM Smith, co-I. 9/1/94-8/31/99. \$150,000 TDC. Study retinoid functions in heart septation and outflow tract formation, examine molecular consequences of retinoid deficiency and toxicity to cardiogenesis.
 8. Hatch/College of Ag. & Life Sciences, #3363. SM Smith, PI. "The Requirement for a Vitamin A Gradient in Vertebrate Limb Development." 10/1/95-9/30/99. \$25,000 annual direct costs. Define retinoid roles in limb development by manipulating its gradient via targeted disruption of retinoid metabolic enzymes.
 7. National March of Dimes Birth Defects Foundation, #1-FY96-0915. SM Smith, PI. "Craniofacial Morphogenesis in Prenatal Alcohol Exposure." 7/1/96-6/31/00. \$110,000 TDC. Mechanism of ethanol-induced neural crest cell death and its impact upon neural crest regeneration.
 6. American Heart Association, Wisconsin affiliate, # 96-GB-77. SM Smith, PI. "Molecular Mechanism of Dioxin-Induced Cardiovascular Malformations during Vertebrate Development." \$60,000 TDC. 7/1/96-6/30/99. Identified cellular targets of dioxin during cardiogenesis and identified target genes of dioxin receptors in normal development and after prenatal dioxin exposure.
 5. International Life Sciences Institute, Future Leaders in Nutrition Award. SM Smith, PI. "The role of

- vitamin A in the development of the embryonic heart.” \$30,000/two years. 1/1/94 - 12/31/95. Developed rat model of conditional gestational vitamin A deficiency to study retinoid roles in embryogenesis.
4. USDA Competitive Grants Program, #9404376. “Roles for retinoic acid receptors in chicken limb development.” SM Smith, PI. \$165,000 TDC. 9/15/94 - 9/14/96. Identified contributions of retinoids and their receptors to limb morphogenesis.
 3. Hatch/College of Agricultural and Life Sciences, UW-Madison. SM Smith, PI. “Characterization of retinoic acid receptors that govern formation of the chick embryo limb bud.” #3453. \$111,254 TDC. 3/15/91-9/30/95. Identified contributions of retinoids and their receptors to limb morphogenesis.
 2. USDA Competitive Grants Program, #3658. SM Smith, PI. “Characterization of the retinoic acid receptors that govern formation of the chick embryo limb bud.” \$220,000 TDC. 9/1/91 - 8/31/94. Identified contributions of retinoids and their receptors to limb morphogenesis.
 1. Muscular Dystrophy Association, postdoctoral fellowship to SM Smith. “Expression of the retinoic acid morphogen receptor in embryonic chick limb bud.” Gregor Eichele, sponsor. \$49,000 TDC. 7/1/88 – 6/30/90. Identified contributions of retinoids and their receptors to limb morphogenesis.

INVITED PRESENTATIONS

- 2023 “Choline Needs – the Final Recommendation” Presentation at “New Directions in Choline” research symposium, Nov 5-7, Kannapolis NC. Nov 2023
- 2023 “Choline, Genetics, and Cognition.” Presentation at “New Directions in Choline” research symposium, Nov 5-7, Kannapolis NC. Nov 2023
- 2023 Invited speaker. “Alcohol Perturbation of Metabolism & Nutrient Needs in the Maternal-Fetal Dyad” Dept. Nutrition, Univ. Nebraska at Lincoln. Oct 2023
- 2023 Keynote speaker. “A Cognitive-Metabolic-Nutritional Axis in Prenatal Alcohol Exposure, a Model Cause of Developmental Origins of Adult-Onset Disease.” US DOHaD Society, annual conference, Kansas City MO, September 2023.
- 2023 Session organizer and co-chair, “New Advances in Nutrient-Alcohol Interactions in FASD: from Preclinical Models to Clinical Translation”, Research Society on Alcohol annual conference, Bellevue WA. June 2023
- 2023 “A Relationship between Cognitive Deficits and Metabolic Dysfunction in PAE”, Research Society on Alcohol annual conference, Bellevue WA (w/Sandra Mooney). June 2023
- 2023 “How Nutrigenetics Informs Outcomes in FASD: the Lesson of Choline Metabolism” CIFASD Research Update Symposium, Research Society on Alcohol annual conference, Bellevue WA
- 2023 “Polymorphisms in *SLC44A1* are Associated with Cognition in FASD”, Collaborative Initiative on FASD annual meeting, Bellevue WA. June 2023
- 2022 “NGx for Studying Nutrient Requirements.” Nutrigenetics, Nutrigenomics, and Precision Nutrition Short Course. Kannapolis NC. May 2022.
- 2021 “The Critical Contribution of Nutrition to the Neurodevelopmental Outcomes of FASD.” Center for Brain and Behavior Research annual research symposium, Effects of Risky Behavior on the Public Health. Sanford School of Medicine, University of South Dakota. Vermillion SD. August 2021.
- 2021 Live Q&A session on Precision Nutrition & Brain Health. Preceptorship on Precision Nutrition and Brain Health. On-line presentation to 300+ physicians in Philippines, Malaysia, Singapore, and Hong Kong. July 2021.
- 2021 “Iron, Iodine, and Brain Health.” Preceptorship on Precision Nutrition and Brain Health. On-line presentation to 300+ physicians in Indonesia, Malaysia, Singapore, and Hong Kong. July 2021.
- 2021 “The Gut Microbiome and Brain Health.” Preceptorship on Precision Nutrition and Brain Health. On-line presentation to 300+ physicians in Indonesia, Malaysia, Singapore, and Hong Kong. July

- 2021.
- 2021 “Maternal Protein, Calories, and Brain Health.” Preceptorship on Precision Nutrition and Brain Health. On-line presentation to 300+ physicians in Indonesia, Malaysia, Singapore, and Hong Kong. July 2021.
- 2021 “Applying precision nutrition to identify choline polymorphisms that affect cognition in children diagnosed with Fetal Alcohol Spectrum Disorders”. Nutrigenetics, Nutrigenomics, and Precision Nutrition Virtual Short Course. Kannapolis NC. May 2021.
- 2021 “Alcohol as an environmental stress or that increases maternal-fetal nutrient needs: choline & iron in the developing brain”. Symposium on Precision Nutrition & Brain Development. Kannapolis, NC. April 2021.
- 2020 Nutritional and Nutrigenomic Influences upon Fetal Alcohol Spectrum Disorders. UNC NRI Seminar series. Kannapolis NC, October 2020.
- 2019 “Exon-level machine learning elucidates novel candidate miRNA targets in an avian model of fetal alcohol exposure.” Research Society on Alcoholism. Minneapolis MN. June 2019.
- 2019 “Untargeted metabolomics of maternal-fetal dyad identifies significant metabolic changes in response to prenatal alcohol exposure.” American Society for Nutrition. Baltimore MD. June 2019.
- 2019 “A unique mouse model to identify genetic polymorphisms that modify outcomes in PAE.” 8th International Conference on Fetal Alcohol Spectrum Disorder. Vancouver BC. March 2019.
- 2018 “Does prenatal alcohol exposure increase offspring risk for metabolic syndrome? Metabolic assessment in a moderate PAE mouse model.” 8th International Conference on Adolescents and Adults with FASD. Vancouver BC. April 2018.
- 2018 “Dietary Iron Fortification attenuates the hepcidin dysregulation and inflammatory environment created by gestational iron deficiency and prenatal alcohol exposure.” FASD Study Group. San Diego CA. Travel awardee talk by my postdoc Nipun Saini.
- 2018 “Ribosome dysbiogenesis is a novel apoptotic effector in alcohol-exposed neural crest.” Gordon Conference on Alcohol and the Nervous System. Galveston TX. March 2018.
- 2018 “Gestational nutrient requirements: An unexpected interaction between maternal iron status and prenatal alcohol.” Department of Nutrition, UNC-Greensboro. January 2018.
- 2018 “Does ribosome biogenesis mediate alcohol’s neurotoxicity? Novel insights from RNA-Seq and unsupervised machine learning.” UNC Bowles Center for Alcohol Studies. January 2018
- 2017 “How to Eat Healthy and Survive the Holidays.” Appetite for Life. November 2017.
- 2017 “Precision Nutrition for Brain Health.” Epicurean Society, Johnson & Wales University, Charlotte NC.
- 2017 “Nutritional Issues for Alcohol-Exposed Pregnancies & FASD.” CME webinar for the Wisconsin WIC Birth Defects & Nursing and Special Needs Network (WIC-CYSHCN).
- 2017 “Molecular mechanisms of FASD: An unexpected role for ribosomes and RPS6K.” Department of Cellular Biology & Anatomy, LSU Health Sciences Center – Shreveport. October 2017.
- 2017 “The role of maternal iron status in prenatal alcohol exposure.” Symposium for Brain Awareness Week, North Carolina Research Campus. March 2017.
- 2017 “How alcohol damages neurogenesis – unexpected insights from a diamond.” 6th Annual Catalyst Symposium, North Carolina Research Campus. April 2017.
- 2017 “Prenatal alcohol disrupts maternal and fetal iron metabolism.” Symposium on “The Iron Conundrum: The Role of Iron in FASD. Vancouver BC. February 2017.
- 2016 “Prenatal alcohol disrupts maternal and fetal iron metabolism.” Symposium on Iron through the Lifespan in FASD. London UK. July 2016.
- 2016 “Molecular Basis for Fetal Alcohol Syndrome and its Modification by Genes and Diet.” Children’s National Medical Center. George Washington University School of Medicine.

- Washington, D.C. April 2016
- 2016 “How do Genetics and Maternal Nutrition Affect Fetal Vulnerability to Alcohol?” North Carolina Central University. Durham, NC. April 2016.
- 2016 Invited speaker, “Patterns of Disordered Eating in Individuals with FASD”. 7th National Biennial Conference on Adolescents and Adults with Fetal Alcohol Spectrum Disorders. Vancouver, BC, Canada. April 2016
- 2015 Invited speaker, symposium on “The Calcium Signaling Toolkit: Integrators and Targets of Alcohol.” Proposed for 2015 RSA annual meeting, San Antonio TX.
- 2015 Symposium organizer, “Nutritional Mechanisms in the Prevention and Treatment of Fetal Alcohol Spectrum Disorders.” w/Sandra Mooney. Proposed for 2015 RSA annual meeting, San Antonio TX
- 2015 Invited speaker for symposium, “Moderate Alcohol Use and Nutrition in the Context of Chronic Diseases: What We Know and Where to Go.” N. Parekh, organizer. American Society for Nutrition, 2015 Annual Meeting. Boston MA. April 2015
- 2015 Invited speaker, “Prenatal alcohol exposure – Nutrient and genetic interactions that affect FASD risk.” Department of Nutrition, University of North Carolina at Chapel Hill. April 2015.
- 2015 Invited speaker, “Nutrition & Development in FASD” 6th International Conference on FASD. Vancouver BC. March 2015
- 2015 Plenary Speaker “Food, Toxicants, and Perinatal Influences: Why So Challenging?” 2015 Children’s Environmental Health Network conference “Children: Food and Environment” Austin TX. Feb 2015
- 2015 Invited speaker, “Fundamentals of Nutrition & Disease in Domestic Rabbits”, Wisconsin Exotic Animal Veterinary Conference. Madison WI. February 2015.
- 2014 Invited speaker, “Rabbit Nutrition in Health & Disease”, House Rabbit Society National Education Conference (CME credit for veterinary professionals). St. Louis, MO. September 2014
- 2014 Invited speaker, “Prenatal alcohol exposure – Nutrient and genetic interactions that affect FASD risk.” Institute for Nutrition Research, Kannapolis NC. February 2014.
- 2014 Invited speaker, 3rd USA Science and Engineering Festival. April 21, 2014. Washington, D.C. Public lecture on developmental biology & diseases organized by the Society for Developmental Biology.
- 2013 Chair & co-organizer for Symposium “Nutrition and FASD”, with J. Thomas. Other speakers were C. Chambers (UCSD) & B. Christie (UBC). Research Society on Alcoholism annual mtg. June 2013, Orlando FL.
- 2013 Invited speaker, “Maternal iron status modifies iron metabolism and developmental outcomes in FASD.” Research Society on Alcoholism annual mtg. June 2013, Orlando FL.
- 2012 Plenary speaker, James G. Wilson Publication Award. “The Calcium-Mediated Repression of β -Catenin and Its Transcriptional Signaling Mediates Neural Crest Cell Death in an Avian Model of Fetal Alcohol Syndrome.” Teratology Society annual meeting, Baltimore MD, June 2012.
- 2012 Invited speaker, “Finding Hope: Current Science and Research Trends in FASD.” National Conference on Alcoholism and Drug Dependence – Rochester area. Rochester, NY. April 2012.
- 2011 Expert speaker “Animal Models of FASD: Defining the Pathologies that Inform Behavior.” ICC-FASD Conference “Recognizing ARND in Primary Health Care of Children.” Bethesda, MD. Oct/Nov 2012.
- 2011 Organizer and Chair for Symposium “GSK3 β , β -catenin, and Wnt Signals as Novel Targets of Ethanol’s Action.” Other speakers are J Callaci (Loyola Univ.), U. Heberlein (UCSF), J. Luo (U. Kentucky). Research Society on Alcoholism Annual Meeting, Atlanta, GA. June 2011.
- 2011 Invited speaker, “Ethanol’s suppression of β -catenin mediates the apoptosis of neural crest progenitors in the early embryo.” Research Society on Alcoholism Annual Meeting, Atlanta, GA.

- June 2011.
- 2011 Substance Abuse and Mental Health Services Administration (SAMSHA) FASD Center for Excellence. Building FASD State Systems Conference. Invited speaker, "Finding Hope: Current Science and Research Trends in FASD." Phoenix AZ, May 2011.
- 2011 National FASD Conference "Improving Outcomes for Patients with FASD." American Family Insurance Natl Headquarters. Roundtable Panelist "Translating Current Research to Clinical Practice."
- 2011 University of Kentucky, School of Medicine, Dept. Nutritional Sciences. "Genetic and Nutritional Modifiers of FASD Outcome." Graduate seminar series. April 2011.
- 2010 Master Class Invited Lecturer, "Rabbit Nutrition." National House Rabbit Society Headquarters, Richmond CA. Nov 2010. This 80min lecture is available on DVD.
- 2010 University of Minnesota, School of Medicine, Dept. Psychiatry. "Environmental and Genetic Factors that Mediator FASD Outcome." FASD graduate seminar series sponsored by UMinn and Minnesota NOFAS. October 2010.
- 2010 Organizer and Chair for Symposium "Nutritional Modifiers of FASD." Other speakers were C. Chambers (UCSD), J. Napoli (UC-Berkeley), J. Thomas (SDSU). Research Society on Alcoholism Annual Meeting, San Antonio, TX. June 2010.
- 2010 Invited speaker, "Maternal Iron Status as a Modifier of FASD Outcome." Research Society on Alcoholism Annual Meeting, San Antonio, TX. June 2010.
- 2010 FASEB Conference on "The Retinoids." Scottsdale, AZ. Invited speaker. "Retinoic acid mediation of embryo laterality." Also session chair on "Retinoid Homeostasis."
- 2009 Loyola University School of Medicine, Dept of Cell Biology, Neurobiology & Anatomy and Alcohol Research Program. Graduate seminar speaker "Your Baby's Brain on Booze: How Do Calcium Signaling & β -Catenin Mediate Ethanol's Neurotoxicity?"
- 2009 National FASD Conference, American Family Insurance Natl Headquarters. Roundtable Panelist "Overview of FASD Research at UW-Madison." Madison WI
- 2008 FASD Study Group Annual Meeting. Invited Speaker. "Moderate Maternal Iron Inadequacy worsens Neurobehavior Outcomes in a Rat Model of Developmental Alcohol Exposure." Research Society on Alcoholism Annual Meeting, Washington, D.C. June 2008
- 2008 University of Minnesota, Department of Pharmacology. "Your Baby on Alcohol: Unraveling the Cell Biology of Alcohol's Neurotoxicity." Graduate seminar series. Minneapolis, MN.
- 2008 FASEB Conference on "The Retinoids." Conference Organizer. New Haven, CT.
- 2008 National FASD Conference "Improving Outcomes for Patients with FASD." American Family Insurance Natl Headquarters. Roundtable Panelist "What's New in FASD Research?" Madison WI
- 2006 University of Arizona, Department of Pharmacology. Tucson, AZ.
- 2006 University of New Mexico, Department of Pharmacology & Toxicological Sciences. Albuquerque NM.
- 2006 University of Arkansas Medical Sciences Center, Department of Neuroscience. Little Rock, AK.
- 2006 FASEB Conference on "The Retinoids." Co-organizer; session chair for "Retinoids in Development"; speaker on "Physiological Actions of Retinoids." Indian Wells, CA.
- 2005 Research Society on Alcoholism Annual Meeting. Platform session on "Neuronal Migration and Alcohol." "Ethanol and Neural Crest Cell Migration." Santa Barbara CA.
- 2005 Continuing Veterinary Medical Education Conference on Rabbit Medicine. Invited speaker on "Nutritional Excellence for Domestic Rabbits." St. Louis MO.
- 2004 FASEB Conference on "The Retinoids." "A novel role for RBP and retinoids in adult cardiac function." Calloway Gardens GA. Also Chair for session on "Retinoids in Growth and Development."

- 2004 Research Society on Alcoholism Annual Meeting. Platform session on “Apoptosis.”
“Phospholipase C Signaling in Ethanol-induced Apoptosis during Early Embryo Development.”
Vancouver BC, Canada.
- 2004 Fetal Alcohol Study Group annual meeting. “Ethanol selectively triggers neural crest apoptosis through its activation of a pertussis-toxin-sensitive G protein and a phospholipase C-beta-dependent Ca²⁺ transient.” Vancouver BC, Canada.
- 2004 Fetal Alcohol Study Group annual meeting. Kragtorp-Debelak KA, Moyers M, Garic-Stankovic A, Smith SM. “The contribution of neural crest losses to facial outcome in a chick model of prenatal alcohol exposure.” Vancouver BC, Canada.
- 2004 Teratology Society Annual Meeting. “Phospholipase signaling in ethanol-induced apoptosis during early embryo development.” Vancouver, BC, Canada.
- 2004 Teratology Society Annual Meeting. “Cell death and developmental timing are critical determinants of facial dysmorphism in the chick model of prenatal alcohol exposure.” Vancouver, BC, Canada.
- 2004 Teratology Society. “Disruption of a heart development by trichloroethylene, a common groundwater contaminant.” Vancouver, BC, Canada.
- 2004 Teratology Society. “Microarray approaches to identify retinoid-responsive genes in embryogenesis: increased collagen fibril production in a model of retinoid insufficiency.” Vancouver, BC, Canada.
- 2003 Rutgers University, Dept. Animal Sciences Graduate Seminar. Invited speaker on “Calcium Signaling as a Mediator of Apoptosis in Fetal Alcohol Syndrome.” New Brunswick, NJ.
- 2003 University of North Carolina, Bowles Center for Alcohol Studies. Invited seminar: “Roles for PLC-Mediated Calcium Transients and Sonic Hedgehog Signals in Alcohol-Induced Fetal Damage.” Chapel Hill, NC.
- 2003 Experimental Biology. “Prenatal alcohol exposure represses *sonic hedgehog* signaling during craniofacial morphogenesis.” Minisymposium on “Cell Signaling during Development of Craniofacial Tissues.” San Diego, CA.
- 2003 Experimental Biology. “Microarray approaches to identify retinoid-responsive genes in embryogenesis.” Minisymposium on “Vitamin A and Retinoids.” San Diego, CA.
- 2003 Medical College of Wisconsin, Guest lecture on “Retinoids & Vision” for graduate course on Vision.
- 2003 Medical College of Wisconsin, Dept. Anatomy, Cell Biology & Neurobiology. Invited seminar: “Roles for PLC-Mediated Calcium Transients and Sonic Hedgehog Signals in Alcohol-Induced Fetal Damage.” Waukesha WI.
- 2002 Univ. California at Davis. Invited Seminar, Depts. Nutritional Sciences and Toxicology. “Retinoids, Alcohol, and their Roles in Normal Development.”
- 2002 Session / Symposium Co-Organizer, “Modulators of Alcohol Effects on the Fetus.” Research Society on Alcoholism. (w/M Charness) San Francisco CA
- 2002 Boston University School of Medicine, Dept. Medicine & Pathology. Invited seminar: “Retinoid control of cardiac morphogenesis during embryonic development.” Boston MA.
- 2002 SUNY-Upstate Medical University, Dept. Neuroscience & Physiology. “Mechanism of neural crest apoptosis in Fetal Alcohol Syndrome: Roles for Calcium Signaling and Sonic Hedgehog.” Syracuse NY
- 2002 UW-Madison, Waisman Center on Developmental Disabilities. Invited seminar: “Mechanism of neural crest apoptosis in Fetal Alcohol Syndrome: Roles for Calcium Signaling and Sonic Hedgehog” Madison, WI.
- 2002 Friends of the Waisman Center. Featured research speaker for annual meeting. “How Alcohol Damages the Developing Embryo.” Madison, WI.

- 2001 Texas A&M University, Department of Medicine. College Station, TX.
- 2001 Wayne State University, Department of Obstetrics & Gynecology. Detroit, MI.
- 2001 Organizer & speaker, poster break-out session, Research Society on Alcoholism. Montreal, Canada.
- 2000 Gordon Conference on “Mechanisms of Toxicology,” session on “Developmental Toxicology.”
- 2000 Session Chair for “Retinoids & Development”, “The Retinoids” FASEB Research Conference, Copper Mountain
- 2000 Columbia University Medical School, Department of Biochemistry Seminar Series. New York NY.
- 1999 University of Nebraska Medical School, Department of Anatomy Seminar Series. Omaha NE.
- 1999 Thomas Jefferson University, Department of Anatomy & Cell Biology Seminar Series. Philadelphia PA.
- 1999 Research Society on Alcoholism Annual Meeting, “Alcohol & Neuronal Cell Death” session, Santa Barbara CA.
- 1999 Medical University of South Carolina, Cell Biology & Anatomy Seminar Series. Charleston, SC.
- 1999 University of South Florida, Department of Cell Biology & Anatomy Seminar Series. Tampa, FL.
- 1998 NICHD/NCRR Workshop, “Embryonic Stem Cell: Future Directions.” Madison, WI.
- 1998 University of Wisconsin, Endocrinology/Reproductive Physiology Seminar Series. Madison, WI.
- 1998 Session Chair for “Retinoids & Development”, “The Retinoids” FASEB Research Conference, Copper Mountain CO.
- 1997 University of California at San Diego, Department of Cardiology. San Diego, CA.
- 1997 University of Wisconsin, Department of Nutritional Sciences Seminar Series. Madison, WI.
- 1996 Iowa State University, Department of Biochemistry Seminar Series. Ames, IA.
- 1996 Research Society on Alcoholism Annual Meeting, Symposium with Fetal Alcohol Syndrome Study Group on “Craniofacial Contributions.” Washington, D.C.
- 1996 “The Retinoids” FASEB Research Conference, Copper Mountain CO, “Retinoids & Development.”
- 1995 University of Wisconsin, Primate Research Center Seminar Series. Madison, WI.
- 1995 University of Wisconsin, Department of Anatomy Seminar Series. Madison, WI.
- 1995 Fourth Annual Perinatal Substance Abuse Conference: Issues and Strategies for the Future. Speaker on Fetal Alcohol Syndrome. Madison, WI.
- 1995 International Life Sciences Foundation Annual Meeting, North America Future Leader in Nutrition awardee, Cancun, Mexico.
- 1994 University of Wisconsin, Environmental Toxicology Seminar Series.
- 1994 Steroid Receptor Superfamily Symposium, University of Wisconsin-Madison.
- 1994 “The Retinoids” FASEB Research Conference, Saxton’s River, VT
- 1993 University of Wisconsin, Department of Zoology Seminar Series. Madison, WI.
- 1993 Medical University of South Carolina, Cell Biology & Anatomy Seminar Series.
- 1993 Fourteenth Symposium on Clinical Nutrition. Milwaukee, Wisconsin. Symposium on “Nutrient Regulation of Gene Expression.”
- 1993 University College of Wales, Dept. Biological Sciences Seminar Series. Aberystwyth, Wales, U.K.
- 1993 National Institutes for Medical Research, Genes and Cellular Controls Seminar Series. Mill Hill, London, U.K.
- 1993 Oxford University, Department of Anatomy Seminar Series. Oxford, UK.
- 1993 University of Wisconsin, Endocrinology/Reproductive Physiology Seminar Series. Madison, WI.
- 1992 Medical College of Milwaukee, Department of Cell Biology and Anatomy Seminar Series. Milwaukee.

- 1990 Johns Hopkins School of Medicine, Wilmer Eye Institute Seminar Series. Baltimore, MD.
- 1990 Cornell University Medical School, Department of Biochemistry Seminar Series. New York, NY.
- 1990 The Royal Netherlands Academy of Arts and Sciences, Academy Colloquium on “Retinoids in Development and Cancer.” Amsterdam, The Netherlands.
- 1989 Symposium sponsored by Hoffmann-LaRoche on “Retinoids and Teratogenesis: Molecular Mechanisms and Approaches.” White Plains, NY.

ABSTRACTS AND NON-REFEREED PUBLICATIONS

- 2023 Flentke GR, Wilkie T, Smith SM. Alcohol causes craniofacial malformations and mitochondrial alterations by a MDM2/p53-mediated mechanism in zebrafish and mouse neural crest models. Research Society on Alcohol. Bellevue WA.
- 2023 Smith SM, Weathers TD, Wetherill L, Virdee MS, Foroud TM, and the CIFASD Consortium. Polymorphisms in the choline transporter SLC44A1 are associated with reduced cognitive performance in individuals with heavy prenatal alcohol exposure. Research Society on Alcohol. Bellevue WA.
- 2023 Huang Y, Flentke GR, Rivera OC, Saini N, Mooney SM, Smith SM. Transcriptome analysis of alcohol-exposed fetal mouse brain reveals nucleolar stress and suppressed ribosome biogenesis. Research Society on Alcohol. Bellevue WA.
- 2023 Mooney SM, Petry HG, Munson CA, Smith SM. Metabolic deficits from prenatal alcohol exposure predict offspring cognitive performance and are mitigated by prenatal choline. Research Society on Alcohol. Bellevue WA.
- 2023 Saini N, Smith SM. Prenatal alcohol exposure disrupts maternal glucose and fatty acid metabolism that contributes to impaired fetal development. Research Society on Alcohol. Bellevue WA.
- 2022 Walter KR, Ricketts DK, Presswood BH, Smith SM, Mooney SM. Prenatal alcohol exposure causes persistent neuroinflammation and age- and sex-specific effects on cognition and metabolic outcomes in an Alzheimer’s disease model. Symposium for Learning about Alzheimer’s Disease -Related Medical Research at Duke & UNC (SLAM-DUNC!), Durham NC.
- 2022 Flentke GR, Smith SM. Alcohol causes nucleolar stress and activates MDM2/p53-mediated apoptosis in a mouse neural crest model. Research Society on Alcoholism. Orlando FL.
- 2022 Saini N, Smith SM. Gestational alcohol exposure prevents maternal adaptation to insulin resistance and reduces gluconeogenesis to limit fetal glucose availability. Research Society on Alcoholism. Orlando FL.
- 2022 Saini N, Smith SM. Alcohol causes a metabolic maladaptation of mother and fetus in a mouse model of prenatal alcohol exposure. Research Society on Alcoholism. Orlando FL.
- 2022 Mice lacking the inflammation-related receptor ALX/FPR2 have worsened behavioral deficits after prenatal alcohol exposure. McNew ML, Munson CA, Shaikh SR, Smith SM, Mooney SM. Research Society on Alcoholism. Orlando FL.
- 2022 Smith SM, Virdee MS, Wetherill L, Foroud T, CIFASD Consortium. Associations between polymorphisms in the choline transporter SLC44A1 and cognitive outcomes in individuals diagnosed with FASD: an exploratory study. Research Society on Alcoholism. Orlando FL.
- 2021 Helfrich KK, Saini N, Kwan STC, Rivera OC, Smith SM. Gestational administration of the clinical iron supplement Fer-in-Sol improves cognitive outcomes in rat offspring prenatally exposed to alcohol. FASD Study Group Annual Meeting. *Outstanding Trainee Awardee*.
- 2021 Smith SM, Virdee MS, Eckerle JK, Sandness KE, Georgieff MK, Boys C, Zeisel SH, Wozniak JR. Polymorphisms in SLC44A1 are associated with cognitive improvement in children diagnosed with Fetal Alcohol Spectrum Disorder: an exploratory study of oral choline

- supplementation. Research Society on Alcoholism. Virtual, June 2021
- 2021 Helfrich KK, Saini N, Kwan STC, Rivera OC, Smith SM. The clinical iron supplement Fer-in-Sol improves fetal iron status and brain weight in rats prenatally exposed to alcohol. Research Society on Alcoholism. Virtual, June 2021
- 2021 Saini N, Helfrich KK, Kwan STC, Smith SM. Gestational alcohol exposure prevents maternal adaptation to insulin resistance and limits fetal glucose availability required for growth. Research Society on Alcoholism. Virtual, June 2021.
- 2021 Rivera OC, Helfrich KK, Kwan STC, Saini N, Virdee MS, SM Mooney SM, Smith SM. Choline supplementation alters the transcriptome of E17.5 alcohol-exposed fetal mouse brain to reflect improved neuron generation and maturation. Research Society on Alcoholism. Virtual, June 2021.
- 2021 Virdee MS, Saini N. Kay CD, Neilson AP, Kwan STC, Helfrich KK, Mooney SM, Smith SM. An enriched biosignature of gut microbiota-dependent metabolites characterizes maternal plasma in a mouse model of Fetal Alcohol Spectrum Disorders. Research Society on Alcoholism. Virtual, June 2021
- 2021 Kwan STC, Presswood BH, Helfrich KK, Baulch JW, Flentke GR, Smith SM. Alcohol exposure during mouse pregnancy downregulates placental mTOR signaling in a fetal sex-dependent manner. Research Society on Alcoholism. Virtual, June 2021. *Enoch Gordis Finalist.*
- 2021 Flentke GR, Baulch JE, Emerson JI, Smith SM. Alcohol induces nucleolar stress and ribosome dysbiogenesis to cause p53-mediated apoptosis in chick and mouse neural crest populations. Research Society on Alcoholism. Virtual, June 2021.
- 2021 Walter KR, Presswood BH, Ricketts DK, Smith SM, Mooney SM. Sex-specific effects of prenatal alcohol exposure in an aging Alzheimer's mouse model. Research Society on Alcoholism. Virtual, June 2021.
- 2020 Kwan STC, Smith SM. Maternal nutrition, fetal sex, and litter size modulate developmental outcomes in a mouse model of fetal alcohol spectrum disorder: focus on the placenta. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Kwan STC, Saini S, Helfrich KK, Virdee M, Smith SM. Untargeted metabolomics analysis reveals altered concentration of lipid-related metabolites in mouse placentas exposed to alcohol. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Helfrich KK, Saini N, Kwan STC, Rivera OC, Smith SM. The clinical iron supplement Fer-in-Sol improves fetal iron status in rats prenatally exposed to alcohol. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Rivera OC, Helfrich KK, Kwan STC, Saini N, Virdee MS, Smith SM. Whole-transcriptome sequencing of the E17.5 alcohol-exposed fetal brain reflects impaired corticogenesis. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Rivera OC, Amos-Kroohs, RMA, Cheng AA, Huang T, Yen, CLE, Clugston RD, Smith SM. Prenatal alcohol exposure dysregulates maternal mammary gland development and maturation, and impairs lactation. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Saini N, Helfrich KK, Kwan STC, Smith SM. Global metabolomic profiling of maternal liver from C57BL/6J mice consuming alcohol during pregnancy. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Presswood BH, Friday WB, Pjetri E, Mooney SM, Smith SM. Prenatal alcohol exposure increases aging-related disease: findings through age 18 months in a mouse model of FASD. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Friday WB, Presswood BH, Pjetri E, Smith SM, Mooney SM. Sex- and age-specific effects of prenatal alcohol exposure on behavior in aging ING C57BL/6J mice. Research Society on Alcoholism. Virtual, June 2020.

- 2020 Flentke GR, Baulch JE, Emerson JI, Smith SM. Alcohol induces nucleolar stress and ribosome dysbiogenesis to cause p53-mediated apoptosis in cranial neural crest populations. Research Society on Alcoholism. Virtual, June 2020.
- 2020 Virdee M, Saini N, Helfrich KK, Kwan STC, Mooney SM, Smith SM. An Enriched Biosignature of Gut Microbiota-Derived Metabolites Defines the Alcohol-Exposed Maternal Plasma in a Mouse Model of Fetal Alcohol Spectrum Disorder. Research Society on Alcoholism. Virtual, June 2020.
- 2019 Kwan STC, Plesha C, Huebner SM, Kling PJ, Smith SM. The Modulatory Effect of Maternal Iron Nutrition on Placental Inflammatory Profile in a Rat Model of Prenatal Alcohol Exposure. American Society for Nutrition. Baltimore MD.
- 2019 Helfrich KK, Saini N, Kwan STC, and Smith SM. Fetal and Maternal Hepcidin Respond Inversely to Prenatal Alcohol Exposure in a C57BL/6J Mouse Model. American Society for Nutrition. Baltimore MD.
- 2019 Flentke GR, Baulch J, Smith SM. Altered nucleolar structure in neural crest during a p53-mediated model of alcohol-induced apoptosis. Research Society on Alcoholism. Minneapolis MN
- 2019 Al-Shaer AE, Flentke GR, Berres ME, Garic A, Smith SM. Exon-level machine learning analysis elucidates novel candidate miRNA targets in an avian model of fetal alcohol syndrome. Research Society on Alcoholism. Minneapolis MN
- 2019 Saini N, Helfrich KK, Kwan STC, Smith SM. Untargeted metabolomics analysis of maternal plasma from C57Bl/6J mice consuming alcohol during pregnancy. Research Society on Alcoholism. Minneapolis MN
- 2019 Kwan STC, Plesha C, Huebner SM, Wolfenden EE, Kling PJ, Smith SM. Maternal iron status influences placental inflammatory profile in a rat model of prenatal alcohol exposure. Research Society on Alcoholism. Minneapolis MN
- 2019 Helfrich KK, Saini N, Kwan STC, Smith SM. Prenatal alcohol exposure induces fetal hepcidin and reduces maternal hepcidin in a C57BL/6J mouse model. Research Society on Alcoholism. Minneapolis MN
- 2019 Saini S, Pjetri E, Friday WB, Kwan STC, Baulch J, Presswood B, Flentke GR, Smith SM. The Collaborative Cross Mouse RIS as a Model to Identify for Studying Genetic Polymorphisms Affecting Prenatal Alcohol Exposure. Research Society on Alcoholism. Minneapolis MN
- 2019 Zhang WL, Pjetri E, Saini N, Friday WB, Baulch J, Presswood B, Flentke GF, French JF, Smith SM. Collaborative Cross RIS as a Mouse Model to Study Alcohol Response. Research Society on Alcoholism. Minneapolis MN
- 2019 Zhang WL, Pjetri E, Saini N, Friday WB, Baulch J, Presswood B, Flentke GR, French JF, Smith SM. Collaborative Cross RIS as a mouse model to identify genetic poly morphisms that modify alcohol-related outcomes. NIDA and NIAAA Genetics and Epigenetics Research Meeting. NIDA, North Bethesda MD.
- 2018 Saini N, Helfrich KK, Huebner SM, Flentke GR, Smith SM. Dietary iron fortification attenuates the hepcidin dysregulation and inflammatory environment created by gestational iron deficiency and prenatal alcohol exposure. Research Society on Alcoholism. San Diego CA.
- 2018 Al-Shaer A, Flentke GR, Berres ME, Garic A, Smith SM. Exon-level machine learning analyses elucidate novel miRNA targets in an avian FASD model. Research Society on Alcoholism. San Diego CA.
- 2018 Flentke GR, Baulch JW, Garic A, Berres ME, Smith SM. Transient alcohol exposure enhances neural crest migration yet promotes their apoptosis through the contradictory, calcium-dependent induction of both *Snai2* and *p53*. Research Society on Alcoholism. San Diego CA.

- 2017 Amos-Kroohs RM, Nelson DW, Yen C-LE, Smith SM. Does prenatal alcohol exposure increase offspring risk for metabolic syndrome? Metabolic assessment in a moderate PAE mouse model. Research Society on Alcoholism. Denver CO.
- 2017 Amos-Kroohs RM, Clugston RD, Nettesheim E, Huang T-N, Cheng AA, Blaner WS, Yen C-LE, Smith SM. Chronic moderate gestational alcohol exposure alters maternal mammary gland structure and function in a mouse model. Research Society on Alcoholism. Denver CO.
- 2017 Flentke GR, Baulch J, Berres ME, Garic A, Smith SM. Transient alcohol exposure enhances neural crest migration and suppresses proliferation through induction of SNAI2 and p53. Research Society on Alcoholism. Denver CO.
- 2017 Huebner SM, Blohowiak SE, Cheng AA, Kling PJ, Smith SM. Supraphysiological iron intake may normalize fetal iron homeostasis in a rat model of prenatal alcohol exposure. Research Society on Alcoholism. Denver CO.
- 2017 Flentke GR, Baulch J, Berres ME, Garic A, Smith SM. Disruption of Ribosome Biogenesis as a Contributor to Alcohol-Mediated Apoptosis in the Early Embryo. Gordon Research Conference on Alcohol-Induced End-Organ Disease, Ventura CA.
- 2017 Amos-Kroohs RM, Nelson DE, Wozniak JR, Yen CLE, Smith SM. Determining the origins of increased obesity risk in children with FASD: Is a hyperphagic feeding phenotype the result of abnormal metabolic requirements or a reward system dysfunction? (oral presentation by RMAK) Developmental Neurotoxicology Society Annual Meeting, Denver CO.
- 2016 Flentke GR, Berres ME, Garic A, Smith SM. High-Throughput Transcriptome Sequencing to Identify Genetic Modifiers of Sensitivity to Alcohol. NIDA Consortium Genetics Meeting, Rockville MD.
- 2016 Berres ME, Garic A, Flentke GR, Smith SM. Transcriptome profiling and morpholino knockdown identifies ribosome biogenesis as a novel alcohol target during early neurogenesis. Research Society on Alcoholism. New Orleans, LA.
- 2016 Flentke GR, Garic A, Berres ME, Smith SM. Acute alcohol exposure induces Snai2 to suppress proliferation and enhance migration and apoptosis in neural crest progenitors. Research Society on Alcoholism. New Orleans, LA.
- 2016 Amos-Kroohs RM, Nelson DW, Yen CLE, Smith SM. Metabolic Phenotype and Increased Adiposity in a Mouse Model of Chronic Gestational Alcohol Exposure. Experimental Biology. San Diego CA.
- 2016 Amos-Kroohs RM, Cheng AA, Clugston RD, Huang TN, Blaner WS, Yen CLE, Smith SM. Mammary Gland Structure and Functional Changes in Mouse Model of Chronic Gestational Alcohol Exposure. Experimental Biology. San Diego CA. Maternal, Perinatal and Pediatric Research Interest Section of the ASN. *American Society of Nutrition, Maternal, Perinatal and Pediatric RIS Emerging Leaders, Poster Award Recipient.*
- 2016 Cheng AA, Huebner SM, Blohowiak SE, Pamela J, Kling PJ, Smith SM. High Maternal Iron Diet During Prenatal Alcohol Exposure (PAE) May Normalize Iron Homeostasis in PAE Fetuses. Experimental Biology. San Diego CA. *American Society of Nutrition, Vitamins and Minerals RIS Emerging Leaders, Poster Award Recipient.*
- 2015 Amos-Kroohs RM, L Cheng, BA Fink, Van Calcar SC, Wozniak JR, Smith SM. Disordered eating behaviors and nutritional issues in children with FASD. Research Society on Alcoholism. San Antonio TX.
- 2015 Amos-Kroohs RM, Nelson DW, Yen CLE, Smith SM. Metabolic assessment and obesity risk in a novel mouse model of chronic gestational alcohol exposure. Research Society on Alcoholism. San Antonio TX.

- 2015 Huebner SM, Blohowiak SE, Kling PJ, Smith SM. Gestational alcohol exposure impairs fetal hematological values independent of iron deficiency. Research Society on Alcoholism. San Antonio TX.
- 2015 Garic A, Berres ME, Smith SM. Transcriptome profiling and characterization of exonal expressions in gene targets associated with alcohol sensitivity in FASD. Research Society on Alcoholism, San Antonio TX.
- 2015 Huebner SM, Tran TD, Rufer ES, Smith SM. Maternal iron deficiency synergizes with prenatal alcohol to reduce associative learning and its neurocircuitry in a rat model of FASD. Research Society on Alcoholism, San Antonio TX.
- 2015 Smith S.M., Amos-Kroohs R, Cheng L, Fink BA, Van Calcar SC, Wozniak JR. Disordered eating behaviors and nutritional issues in children with Fetal Alcohol Spectrum Disorders. Experimental Biology. Boston MA.
- 2015 Huebner S, Smith SM. Gestational alcohol exposure impairs maternal-fetal iron homeostasis through hepcidin dysregulation. Experimental Biology. Boston MA.
- 2014 Huebner SM, Drew PA, Smith SM. Gestational alcohol exposure dysregulates fetal brain iron homeostasis under maternal iron sufficiency and deficiency. Society for Neuroscience. Washington, D.C.
- 2014 Smith SM, Fink BA, Van Calcar SC, Wozniak JR. Disordered eating behaviors and nutritional issues in children with FASD. Research Society on Alcoholism. Bellevue WA.
- 2014 Garic A, Berres ME, Smith SM. High-throughput transcriptome sequencing identifies candidate genetic modifiers of vulnerability to Fetal Alcohol Spectrum Disorders. Research Society on Alcoholism. Bellevue WA
- 2013 Abazi J, Smith SM, Huebner SM. Maternal iron status alters the pro-inflammatory action of gestational alcohol exposure. Research Society on Alcoholism. Orlando FL
- 2013 Garic A, Berres ME, Smith SM. High-throughput transcriptome sequencing in early neural progenitors identifies candidate genes that modify sensitivity to alcohol's neurotoxicity. Research Society on Alcoholism. Research Society on Alcoholism. Orlando FL
- 2013 Flentke GR, Klingler RH, Tanguay RL, Carvan MJ 3rd, Smith SM. An evolutionarily conserved mechanism of calcium-dependent neurotoxicity in an early zebrafish model of FASD. Research Society on Alcoholism. Orlando FL.
- 2012 Garic A, Berres ME, Smith SM. High-throughput transcriptome sequencing to identify genetic modifiers of sensitivity to alcohol. Research Society on Alcoholism. San Francisco CA.
- 2012 Huebner S, Steeber B, Smith SM. Prenatal alcohol exposure disrupts iron homeostasis in a rat model of FAS. Research Society on Alcoholism. San Francisco CA.
- 2011 Garic A, Berres ME, Smith SM. High-throughput transcriptome sequencing to identify genetic modifiers of sensitivity to alcohol. NIDA/NIAAA. Mini-convention on Genetics and Epigenetics of Substance Abuse. Washington DC, Sept 2011.
- 2011 Smith SM, Flentke GR, Garic A, Amberger E, Hernandez M. β -Catenin destabilization by calcium and CaMKII mediates neural crest apoptosis in an FASD model. Research Society on Alcoholism. Atlanta GA
- 2011 Tran T, Lloyd DH, Conchar ID, Sheffer EM, Smith SM. Maternal iron deficiency produces differential learning outcomes and cell loss in a rat model of FASD. Research Society on Alcoholism. Atlanta GA
- 2011 Palmer JA, Poenitzsch AM, Smith SM, Cezar GG. Identifying biomarkers of fetal alcohol exposure using metabolomics and derivatives of human embryonic stem cells. Research Society on Alcoholism. Atlanta GA

- 2011 Smith SM, Rufer ES, Tran TD, Attridge MM, Andrzejewski ME, Flentke GR. Maternal iron status is a critical modulator of neurotoxicity and learning outcomes in a rat model of FAS. International BioIron Society Meeting. Vancouver BC. May 2011.
- 2010 Eggenberger SE, Rufer E, Feit EC, McKee BL, Paletz EM, Smith SM, Andrzejewski. Motivational and attentional deficits in a rat model of fetal alcohol syndrome. Association for Behavior Analysis International. San Antonio TX. March 2010.
- 2010 Rufer ES, Tran TD, Attridge MM, Andrzejewski ME, Smith SM. Subclinical maternal iron deficiency exacerbates associative learning in a rat model of FASD. Research Society on Alcoholism. San Antonio TX. June 2010.
- 2010 Smith SM, Garic-Stankovic A, Hernandez M, Flentke GR. β -Catenin destabilization by calcium and CaMKII mediates neural crest apoptosis in an FASD model. Research Society on Alcoholism. San Antonio TX. June 2010.
- 2009 Rufer ES, Tran T, Smith SM. 2009. Moderate maternal iron inadequacy worsens neurobehavioral outcomes in a rat model of developmental ethanol exposure. Research Society on Alcoholism annual meeting, San Diego CA. June 2009.
- 2009 Smith SM, Garic-Stankovic A, Hernandez M, Flentke GR. 2009. Calcium-dependent repression of β -catenin instigates ethanol-induced apoptosis of neural crest. San Diego CA, June 2008.
- 2008 Garic-Stankovic A, Hernandez M, Flentke GR, Smith SM. 2008. Ethanol causes neural crest apoptosis through the Ca_i^{2+} mediated repression of nuclear β -catenin. Washington DC, June 2008.
- 2008 Flentke GR, Hacker T, Lough J, Smith SM. Hypertrophy attenuation by retinoids is via inhibition of GSK3 β /GATA4 signaling. UW Cardiovascular Research Center poster fair. December 2008.
- 2008 Rufer ES, Tran T, Smith SM. 2008. Moderate maternal iron inadequacy worsens neurobehavioral outcomes in a rat model of developmental ethanol exposure. International Society for Developmental Psychobiology, Washington DC, November 2008.
- 2008 Rufer ES, Tran T, Smith SM. 2008. Moderate maternal iron inadequacy worsens neurobehavioral outcomes in a rat model of developmental ethanol exposure. Research Society on Alcoholism annual meeting, Washington DC, June 2008. (ESR was a Gordis Awardee of RSA)
- 2008 Garic-Stankovic A, Hernandez M, Flentke GR, Smith SM. 2008. A ryanodine receptor-dependent Ca_i^{2+} asymmetry at Hensen's node mediates avian lateral identity. FASEB SRC on The Retinoids, New Haven, CT.
- 2008 Garic-Stankovic A, Hernandez M, Smith SM. 2008. Ethanol is apoptotic to neural crest because it aberrantly activates signals that normally govern neural crest apoptosis. Society of Toxicology annual meeting, Seattle, WA.
- 2008 Rufer ES, Tran T, Smith SM. 2008. Moderate maternal iron inadequacy worsens neurobehavioral outcomes in a rat model of developmental ethanol exposure. Society of Toxicology annual meeting, Seattle, WA.
- 2008 Worawong C, Lauver DR, Smith SM. A nutrition intervention focused on goals of Thai pregnant women. Midwest Nursing Research Society Conference. Indianapolis IN, March 2008.
- 2007 Rufer E, Lough J, Smith SM. Disruption of a heart development by trichloroethylene, a common groundwater contaminant. Weinstein Cardiovascular Development Meeting. Indianapolis, May 2007.
- 2007 Armant DR, Romero R, Smith SM, Leach RE. The EGF signaling system and trophoblast survival. Internatl Federation of Placental Assn. Kingston ON, Aug 07
- 2007 Rufer ES, Tran T, Smith SM. 2007. Maternal iron inadequacy enhances neurobehavioral deficits caused by ethanol to the offspring. Research Society on Alcoholism annual meeting. Chicago, IL.
- 2007 Garic-Stankovic A, Hernandez M, Smith SM. 2007. Ethanol is neurotoxic to neural crest because it activates the PLC/CaMKII-dependent endogenous cell death pathway. Research Society on Alcoholism annual meeting. Chicago, IL.

- 2006 Flentke GR, Lough J, Hacker T, Bauer C, Smith SM. 2006. Novel roles for retinoids and RBP in adult heart. FASEB Conference on "The Retinoids." Indian Wells, CA.
- 2006 Drake VJ, Lough J, Hu N, Smith SM. 2006. Environmentally-relevant trichloroethylene exposure alters cardiac hemodynamics during avian development. Society of Toxicology. San Diego, CA.
- 2005 Smith, SM, Flentke GR, Hacker TA, Schmoldt A, Springstroh B, Wendler C, Lough J. 2005. Deficiency in retinol binding protein (RBP) reveals a novel retinoid function in cardiac hypertrophy. Keystone Conference on Cardiac Hypertrophy and Disease. Steamboat Springs, CO.
- 2005 Drake VJ, Koprowski S, Lough J, Smith SM. 2005. Disruption of a heart development by trichloroethylene, a common groundwater contaminant. Weinstein Cardiovascular Development Meeting. Tucson AZ.
- 2005 Drake VJ, Koprowski S, Lough J, Smith SM. 2005. Alteration of normal heart development by trichloroethylene and its metabolite trichloroacetic acid. Society of Toxicology, New Orleans LA.
- 2005 Gilliam D, Smith S. 2005. Preconception and prenatal exposure to ethanol: effects on fetal facial morphology in mice. A preliminary report. Regional Meeting of Colorado-Wyoming Academy of Science.
- 2004 Garic-Stankovic A, Hernandez M, Kragtorp-Debelak KA, Armant DR, Smith SM. 2004. Phospholipase C signaling in ethanol-induced apoptosis during early embryo development. Research Society on Alcoholism. Vancouver BC, Canada. June 2004.
- 2004 Kragtorp-Debelak KA, Moyers M, Garic-Stankovic A, Smith SM. 2004. Cell death and developmental timing are critical determinants of facial dysmorphology in the chick model of prenatal alcohol exposure. Research Society on Alcoholism. Vancouver, BC, Canada.
- 2004 Garic-Stankovic A, Hernandez M, Kragtorp-Debelak KA, Armant DR, Smith SM. 2004. Phospholipase signaling in ethanol-induced apoptosis during early embryo development. Teratology Society, Vancouver, BC, Canada.
- 2004 Kragtorp-Debelak KA, Moyers M, Garic-Stankovic A, Smith SM. 2004. Cell death and developmental timing are critical determinants of facial dysmorphology in the chick model of prenatal alcohol exposure. Teratology Society. Vancouver, BC, Canada.
- 2004 Drake VJ, Koprowski S, Lough J, Smith SM. 2004. Disruption of heart development by trichloroethylene, a common groundwater contaminant. Teratology Society, Vancouver, BC, Canada.
- 2004 Smith, SM, KA Docterman, MW Baker, GR Flentke. 2004. Microarray approaches to identify retinoid-responsive genes in embryogenesis: increased collagen fibril production in a model of retinoid insufficiency. Teratology Society. Vancouver, BC, Canada.
- 2004 Lough J, Wendler CC, Hacker T, Flentke GR, Blaner WS, Smith SM. 2004. Increased fibronectin deposition and concomitant echocardiographic deficits in hearts of retinol-binding protein null mice. Weinstein Cardiovascular Development Meeting. Boston MA.
- 2004 Smith SM, G Flentke, CC Wendler, A Schmoldt, J Lough. 2004. Hypertrophy & diastolic cardiac dysfunction in a genetic model of subclinical vitamin A deficiency. UW Cardiovascular Research Center poster fair.
- 2003 Smith SM, Flentke GR, Baker M, Lough J, Wendler CC, Schmoldt A, Case L, Blaner WS. 2003. Altered myocardial differentiation and increased matrix deposition in retinol binding protein-null mice. UW Cardiovascular Research Center poster fair.
- 2003 Smith SM, Docterman KA, Baker MW, Flentke GR. Microarray approaches to identify retinoid-responsive genes in embryogenesis. Minisymposium on "Vitamin A and Retinoids." FASEB J. EB 2003, San Diego CA.
- 2003 Smith, SM, Su B, Flentke GR, Debelak KA, Tessmer LA, Hahn SH. Prenatal alcohol exposure represses *sonic hedgehog* signaling during craniofacial morphogenesis. Minisymposium on "Cell Signaling during the Development of Craniofacial Tissues." FASEB J. EB 2003, San Diego CA.

- 2003 Thackeberry EA, Goens B, Gabaldon D, Smith SM, Walker MK. 2003. Embryonic cardiac hypertrophy and neonatal macrosomia is dependent on AhR maternal genotype. *FASEB J. Experimental Biology*, San Diego, CA.
- 2003 Wendler CC, Smith SM, Case L, Quadro L, Blaner WS, Lough. 2003. Heart development in retinol-binding protein null embryos. *FASEB J. Experimental Biology*, San Diego CA.
- 2002 Smith SM, G Flentke, M Baker, J Lough, CC Wendler, A Schmoldt, L Case, WS Blaner. Altered myocardial differentiation and increased matrix deposition in retinol binding protein-null mice. UW Cardiovascular Research Center poster fair. Madison, WI
- 2002 Smith, SM, Flentke GR, Baker M, Lough J, Wendler CC. 2002. Altered myocardial differentiation and increased matrix deposition in retinol binding protein-null mice. *FASEB Conference on The Retinoids*. Tucson AZ
- 2002 Docterman KE, Smith SM. 2002. Microarrays to identify retinoid-dependent transcripts in vitamin A-deficient embryos. *FASEB Conference on The Retinoids*. Tucson AZ
- 2001 Kilburn BA, Smith SM, Rappolee DA, Armant DR. 2001. Ethanol rapidly induces apoptosis of mouse embryonic cells at the preimplantation and gastrulation stages. *Research Society on Alcoholism*. Montreal, Canada.
- 2001 Debelak KA, Armant DR, Smith SM. 2001. An intracellular calcium transient after ethanol exposure mediates apoptosis in neural crest cells. *Research Society on Alcoholism*. Montreal, Canada.
- 2001 Smith SM, Su B, Tessmer LA, Debelak KA, Flentke GR, Hahn SH. 2001. Prenatal alcohol exposure redirects sonic hedgehog signaling during craniofacial morphogenesis. *Research Society on Alcoholism*. Montreal, Canada.
- 2000 Thackaberry EA, MK Walker, SM Smith. Null mutation of the aryl hydrocarbon receptor activates cardiac hypoxic signaling pathways during early embryogenesis. *Society on Toxicology annual meeting*, San Francisco CA.
- 1999 Cavieres, M.F. Smith SM. 1999. Genetic and gestational modulation of cardiac defects in prenatal alcohol exposure. *NIEHS Center for Developmental Toxicology, Symposium on Developmental Toxicology*. Madison, WI.
- 1999 Power S, Lancman JL, Smith SM. 1999. Retinoids are required for limb bud outgrowth but not initiation in a model of targeted gestational retinoid deficiency. *NIEHS Center for Developmental Toxicology, Symposium on Developmental Toxicology*. Madison, WI.
- 1999 Thackaberry EA, Walker MK, Walker MK, Smith SM. 1999. Accelerated cardiomyocyte differentiation and aberrant hypoxia-mediated signaling in the Ah Receptor null mutant mouse. *Society of Toxicology Annual Meeting*.
- 1999 Debelak KA, Smith SM. 1999. Susceptibility to ethanol-induced neuronal apoptosis is influenced by genetic background. *Research Society on Alcoholism Annual Meeting*. Santa Barbara, CA.
- 1999 Smith SM, Tessmer LA, Su B, Cartwright MM. 1999. Fetal genetic background modulates sonic hedgehog signaling and craniofacial sensitivity following prenatal alcohol exposure. *Research Society on Alcoholism Annual Meeting*. Santa Barbara, CA.
- 1999 Smith SM, Ruiz-Lozano P, Dickman ED, Boss GR, Chien KR. 1999. Retinoic acid is required for cardiomyocyte differentiation and energetics. *Weinstein Cardiovascular Development Mtg*, Tucson AZ.
- 1999 Thackaberry, EA, Walker MK, Walker MK, Smith SM. 1999. Accelerated cardiomyocyte differentiation and aberrant hypoxia-mediated signaling in the Ah Receptor null mutant mouse. *Weinstein Cardiovascular Development Meeting*, Tucson AZ.
- 1999 Walker MK, Smith SM. 1999. Altered conduction signals and impaired Na/K/ATPase function in an in ovo model of prenatal TCDD (dioxin) exposure. *Weinstein Cardiovascular Development Meeting*, Tucson AZ.
- 1997 Dickman ED, Smith SM. 1997. Retinoids are required for myocardial energetics and differentiation in the early fetal heart. *Weinstein Cardiovascular Development Meeting*, Cincinnati, OH.
- 1996 Dickman ED, Smith SM. 1996. A vitamin A-deficiency model to study the retinoid requirement during early rat cardiogenesis. *FASEB J. Experimental Biology*, Washington, D.C.
- 1996 Smith SM, Cartwright MM. 1996. Craniofacial development following prenatal alcohol exposure. *Gordon Research Conference, Alcohol*, Ventura CA.
- 1995 Dickman ED, Smith SM. 1995. Selective regulation of cardiomyocyte gene expression and cardiac

- morphogenesis by retinoic acid. Weinstein Cardiovascular Development Conference, Rochester, NY.
- 1995 Walker MK, RS. Pollenz, Smith SM. 1995. Differential expression of two basic helix-loop-helix proteins, aryl hydrocarbon receptor (AhR) and AhR nuclear translocator (ARNT) in myocardium during chick cardiogenesis. Weinstein Cardiovascular Development Conference, Rochester, NY.
- 1995 Walker MK, R. Pollenz, Smith SM. 1995. Temporal and spatial expression of the Arylhydrocarbon Receptor (AHR) and Arylhydrocarbon Receptor Nuclear Translocation (ARNT) proteins during chick cardiogenesis. Seventh International Congress of Toxicology. Seattle, WA.
- 1995 Smith SM, Kirstein IJ, Wang ZS, Kelley J, Fallon JF, Bradshaw-Rouse J. 1995. Differential expression of retinoic acid receptor- β isoforms during chick limb ontogeny. FASEB J. A552. Experimental Biology, Atlanta, GA.
- 1995 Dickman ED, Smith SM. Selective regulation of cardiomyocyte gene expression and cardiac morphogenesis by retinoic acid. FASEB J A828. Experimental Biology, Atlanta, GA.
- 1995 Cartwright MM, Smith SM. Effects of ethanol on cranial neural crest cell derivatives: abnormal cranial nerve development in Fetal Alcohol Syndrome. FASEB J. A763, Experimental Biology, Atlanta, GA
- 1994 Smith SM, Kirstein IJ, Wang ZS, Kelley J, Fallon JF, Bradshaw-Rouse J. 1994. Differential expression of retinoic acid receptor- β isoforms during chick limb ontogeny. American Society of Cell Biology, San Francisco, CA
- 1994 Smith SM, Kirstein IJ, Wang ZS, Kelley J, Fallon JF, Bradshaw-Rouse J. 1994. Differential expression of retinoic acid receptor- β isoforms during chick limb ontogeny. Society for Developmental Biology, Madison, WI
- 1994 Cartwright MM, Smith SM. 1994. Effects of ethanol on cranial neural crest cells: evidence of selective elimination by ethanol-induced apoptosis. Society for Developmental Biology, Madison, WI
- 1994 Cartwright MM, Smith SM. 1994. Effects of ethanol on cranial neural crest cells: evidence of selective elimination by ethanol-induced apoptosis. FASEB J.
- 1993 Smith SM. 1993. Participation of retinoic acid and its receptors during chick embryogenesis. in: *Limb Development and Regeneration, part B*. JF Fallon *et al.*, eds. New York:Wiley. 781-791.
- 1993 Eichele G, Thaller C, Smith SM. 1993. Recent advances in the biology of retinoids. in: *The Molecular and Cellular Biology of the Bone*. M. Noda, ed. Orlando: Academic Press. 287-319.
- 1992 Smith SM, Hahn H, Dickman ED. 1992. Spatiotemporal regulation of retinoic acid receptor-beta (gRAR- β) transcripts and protein in chick embryogenesis. FASEB Journal. 6: A1659.
- 1991 Thaller C, Smith SM, Eichele G. 1991. Retinoids in vertebrate development: pattern formation in limbs and in the central nervous system. in: *Retinoids: Ten Years On*. J-H. Saurat, ed. Basel:Karger. 89-108.
- 1990 Smith SM, Eichele G. 1990. Retinoic acid receptor expression in the embryonic chick. J. Cell. Biochem. Suppl. 14E, 113.

FORMAL TEACHING RESPONSIBILITY

UNC CHAPEL HILL

Nutrition 600, Macronutrient Metabolism. 3cr. Fall 2021 to present. Co-instructor with Ian Carroll. Covers digestion, metabolism and regulation of macronutrients and energy flux in normal health and disease states.

Nutrition 620, Micronutrients. Spring 2018 to present. Present annually 6 lecture-equivalents on Vitamin A, Vitamin D, and Calcium for N. Krupenko.

Nutrition 696, Directed Readings. 1cr. Fall & Spring semesters since 2022. Co-Instructor Sandra Mooney. Weekly seminar attended by all NRI graduate students; focus is on presentation and critical discussion of research papers, and development of professional skills relevant to the profession.

Guest Lectures

Nutrition 992, Graduate Thesis. Spring 2021. Mentored MPH student Caitlin Ashley, “Feeding and Eating Disorders and Substance Use Disorders: A Review of Comorbidities and Implications for Clinical Practice”.

Nutrition 705, Human Nutrition. 3cr. Fall 2020. Assisted Assoc. Prof. Sandra Mooney in this new course, providing mentorship & technical expertise on a subject new to her. Provided lectures on chemistry, metabolism, and metabolic integration, helped guide student discussions, attended all lectures (MWF).

Nutrition 885, Doctoral Seminar. Spring 2018. Mentored 20 graduate students (Yr 1 & 2) on how to present a

seminar & critique a primary research paper. 1cr.

Nutrition 600, Macronutrient Metabolism. Present 2 lectures annually on alcohol biochemistry, physiology, and metabolism in human health and disease. 2018 to present.

Nutrition 600, Macronutrient Metabolism. Presented 5 lectures (50min each) on carbohydrate metabolism and insulin / glucagon signaling to Nutrition seniors, MPH & Nutrition grad students for R. Coleman. Fall 2017

UW-MADISON

Biochemistry/Nutritional Sciences 510, *Biochemical Principles of Human and Animal Nutrition*

Lead instructor. Required course (3cr) for nutrition, biochemistry, & premed seniors (85%) and graduate students (15%, nutrition, food science, biochem, animal science dairy). I presented 45 lectures on intermediary metabolism, micronutrient function, and ancillary topics (exercise nutrition, CVD, nutraceuticals & supplements, etc.). Enrollment averaged 65-110 students. Fall 1991 to 2015

Nutritional Sciences 627, *The Vitamins*

Lead instructor. Core course (1 cr) for nutrition and related graduate students. Covers the biochemistry and physiology of vitamins and their roles in humans, including the B vitamins, vitamins A, C, D, E, and K, and carotenoids. Enrollment averaged 12-22 students. Spring, odd years 2005 to 2015. In 2015 I taught this in a “flipped classroom” format to emphasize student-led learning.

Nutritional Sciences 881, *Human Emphasis Group Seminar*

Graduate seminar for nutrition students in the Human Emphasis research group. As head of this emphasis group I served as lead instructor, identifying the semester's topic recruited instructors, and provided constructive feedback to the student presentations. Goals were to develop speaking skills, critical thinking, and expand nutrition knowledge. Recent topics included microbiome, epigenetics, nutritional supplements, and inflammatory diseases of gut. Enrollment averaged 10-18 students. Spring 2011 to 2016.

Nutritional Sciences 500, *Capstone Seminar in Dietetics and Nutrition*

This undergraduate seminar teaches critical thinking and oral presentation skills to Dietetics seniors, as part of the ADA learning criteria. Students select a primary, peer-reviewed paper of their choosing and learn to: read the primary literature, write an abstract, present a research method, and summarize the paper in an oral presentation. 33 students. Spring 2012.

Nutritional Sciences 799, *Practicum in Teaching*

Teaching assistants for NS510 were mentored to develop their classroom teaching skills including methods of student learning, exam writing, and handling classroom problems, in a direct experiential format. 1992-2015.

Nutritional Sciences 623, *The Minerals*

Lead instructor. Core course (1 cr) for nutrition and related graduate students; biochemistry and physiology of minerals in humans. I organized course & covered DRIs, iodine, zinc, Na/Cl/K following a faculty departure. 21 students, Spring 2003.

Guest Lectures (UW-Madison)

Toxicology 626, *Toxicology of Organ Systems.* Two lectures on Principles of Teratology. Spring, 1999-2013.

Nutr Sci 875, *Vitamin A: From Molecules to Man.* Using Vitamin A as a model, surveys nutritional concepts and techniques. Two lectures on genetic modification of rodent models, their construction, use, and analysis. Fall, Odd Years, 2003-2011.

Nutr Sci 132, *Introduction to Nutrition.* Non-major introductory course, enrolling 800 students/semester. Provided lecture on Alcohol (back-to-back sections). Fall/Spring 2000 – 2009

Inter-LS 150, *Ways of Knowing.* Select faculty lead talented biology freshmen in a bi-weekly structured discussion on how science & experimentation are conducted. Fall 1995.

Environmental Toxicology 800, *Current Research in Environmental Toxicology* Co-organized seminar series in Environmental Toxicology. Fall/Spring 1998-1999.

Guest lectures in Human Oncology (steroid receptors), Zoology (Advanced Development Biology), Pharmacology (retinoid signaling), Nutrition through the Life Cycle (folate & NTDs), Inter-LS/Inter-HE 111 (Alcohol: Behavior, Culture, Science)

GRADUATE MENTOR TEACHING

Current Mentees

Dr. Nipun Saini, Ph.D., Postdoctoral (K99/R00 recipient)
 Dr. Julie Haskens, Ph.D., Postdoctoral (F32 recipient)
 Dr. Yanping Huang, Ph.D., Postdoctoral.
 Hannah Petry, B.S., Dept. Nutrition. Doctoral student. (co-mentor w/S. Mooney)

Current Faculty Mentees

Natalia Krupenko, Associate Professor
 Katie Meyer, Assistant Professor
 Sandra Mooney, Associate Professor
 Blake Rushing, Assistant Professor
 Isis Trujillo-Gonzales, Assistant Professor

Programs for which I was a graduate trainer at UW-Madison: Nutritional Sciences, Molecular and Environmental Toxicology, Cellular and Molecular Biology, Molecular Biosciences, Developmental Biology, MD/PhD, Health Disparities Research Scholars.

Master's Students – Past

Lisa Muskavitch, MS, RD – Registered Dietitian, Aurora IL
 Joseph Lancman, MS, PhD – Sanford-Burnham Medical Research Institute, La Jolla CA
 M. Fernanda Cavieres, MS, PhD – faculty in Pharmacy, University of Valparaiso, Chile

Doctoral Students – Past

Eileen Dickman, PhD, MBA – Dept Family Medicine, Medical College of Georgia, Augusta GA
 Martina Cartwright, RD, PhD – Independent contractor, Medical Liaison, Scottsdale AZ
 Mark Jackson, DVM, PhD – School of Veterinary Medicine, University of Glasgow, Scotland
 Evan Thackaberry, PhD – Scientist, Genentech, San Francisco CA
 Katherine Debelak-Kragtorp, PhD – current position unknown
 Victoria Drake, PhD – Scientist, Linus Pauling Institute, Corvallis OR
 Echoleah Rufer, PhD – Chief Dermatologist, Apple Inc., Cupertino CA
 Adrienne Cheng, MPH – currently graduate researcher fellow (transferred labs when left UW)
 Kaylee K. Helfrich, BS, Clemson University (Ph.D. Fall 2021)

Postdoctoral Fellows – Past

Sze-Ting Cecilia Kwan, Ph.D., Dept. Nutrition, Cornell University (F32 recipient)
 Olivia Rivera, Ph.D., Depts. Biomedical Sciences, & Clinical & Translational Sciences, Penn State University College of Medicine. (Diversity Supplement, NIH; F32 recipient)
 Eneida Pjetri, MD, PhD – MD Marmara University (Turkey), Ph.D. Life Sciences, Utrecht University (The Netherlands). Current position: scientist in private industry, Amsterdam, The Netherlands
 Robyn Amos-Kroohs, PhD – Neurobehavioral toxicology, Univ. Cincinnati (F32 from NIAAA). Current position, forensic toxicologist, Virginia State Police
 Shane Huebner, PhD – Nutritional Sciences, Univ. Wisconsin-Madison (F32 from NIAAA). Research scientist, UW-Madison
 Susan Power, PhD – Cell biology, Univ. Dublin. Scientist in private industry, Philadelphia PA
 Mary K. Walker, PhD – Toxicology, UW-Madison. Professor of Pharmacology & Toxicology, Univ. New Mexico
 Leah Dvorak, PhD – Anatomy & Cell Biology, UW-Madison. Professor of Biology, Concordia College, Milwaukee WI

Thesis committee member in Nutrition, Cell/Molecular Biology, Zoology, Food Science, Dairy Science, Entomology, Nursing, Pharmacology

Medical School Interns: Clarissa Bauer, Mourad Abouelleil

Undergraduate Mentoring

Research mentor – UW-Madison - Since 2004: Marie Daleo, Megha Desai, Amy Felton, Megan Attridge, Bethany Steeber, Jordan Schmerling, Juna Abazi, Emily Wolfenden, Camille Pleisha

- UNC-NRI - Ike Emerson, Nayeli Duckworth (NUTR senior thesis), Sanath Yeduri (NUTR 205)
Undergraduate advisor to 30-35 students/yr enrolled in Dietetics and Nutritional Sciences (UW-Madison)

SERVICE

National Service

- 2023 – 2025 National Academy of Sciences, committee on “Review of Evidence on Alcohol & Health Outcomes”
- 2023 Research Society on Alcohol, RSA Doctoral Student Small Grant program, reviewer.
- 2016 – 2021 External Advisory Board, National Institutes of Alcoholism and Alcohol Abuse.
- 2014 – 2017 External steering committee, U54 Cooperative Agreement grant from NIAAA between Univ. North Carolina and North Carolina Central University.
- 2012 Expert panel on FASD Diagnostic Criteria, ICC-FASD. Advisory to the American Academy of Pediatrics.
- 2010 – 2011 President, Fetal Alcohol Spectrum Disorders Study Group
- 2010 External Advisory Board for Superfund Research on Trichloroethylene (North Carolina State)
- 2009 – 2010 Vice-President, Fetal Alcohol Spectrum Disorders Study Group
- 2008 – 2009 Secretary / Treasurer, Fetal Alcohol Spectrum Disorders Study Group
- 2005 – 2006 Chair, NIH Study Section on Neurotoxicology & Alcohol (2005-2006)
- 2002 – 2004 External Advisory Board, P01 Heart Development and Role of Neural Crest (Duke University)

University-Level Committees

- 2017 – 2018 Committee member, Responsible Conduct in Research Investigating Committee. UNC.
- 2011 – 2016 Chair, all-campus Occupational Health & Safety Committee
- 2009 – 2012 Principal Investigators Committee (reviews applications from non-tenure track faculty to receive permanent PI status)
- 2008 – 2016 Human Research Protection Program (HRPP) Advisory Committee
- 2005 – 2016 All-campus Occupational Health & Safety Committee, 2005 – present
- 2003 – 2005 Biological Sciences Executive Committee (evaluate and approve tenure decisions for Biological Sciences faculty)
- 2002 – 2005 General Education Committee (academic policy decisions across campus colleges)
- 2004 Ad hoc Committee on Mathematics Entrance Standards (GenEd Subcommittee)
- 2000 – 2002 Research Committee, The Graduate School (reviews & selects named professorships, review & rank campus-wide proposals for "insurance" funding)
- 1999 – 2002 IACUC member for Northern Lights Pharmaceuticals, PPL

College-Level Committees: Public Health (UNC); Agricultural & Life Sciences (UW)

- 2014 – 2015 Chair, external review committee for UW Dept. Animal Sciences self-study
- 2013 – 2016 Curriculum Committee
- 2005 Faculty Search Committee – Poultry Scientist position, Dept. Animal Sciences (M Berres hire)
- 2001 – 2004 Training Grant Committee, Program in Environmental Toxicology
- 1999 – 2001 Chair, Curriculum Committee
- 1998 – 2000 Graduate Admissions Committee, Program in Environmental Toxicology
- 1997 – 2003 Graduate Admissions Committee, Program in Endocrinology/Reproductive Physiology
- 1995 – 1999 Curriculum Committee (reviews & approves curricular policy and changes for College)

Departmental Committees (select examples)

- 2023 – present Co-Director, Doctoral Program Committee, Dept. Nutrition, UNC
- 2021 – present Co-Director, NORC Pilot Project Core, UNC
- 2017 – present Faculty Development Committee, Dept. Nutrition, UNC
- 2017 – present Graduate Studies Committee, Dept. Nutrition, UNC
- 2017 – present Chair, Nutrigenomics faculty search committee, UNC NRI
- 2014 Equity review committee for a senior faculty member (UW-Madison)
- 2014 Equity review committee for a senior faculty member (UW-Madison)

- 2013 – 2014 Chair, promotion committee for HC Lai from Associate to Full Professor
 2013 Chair & PI on NIH proposal to upgrade departmental animal facility (not funded)
 2011 – 2016 Chair, Human and Clinical Emphasis Group of IGPNS
 2011 – 2016 IGPNS Executive Committee
 2011 – 2012 Faculty Search Committee - Extension Specialist in Nutrition, Asst/Assoc Prof (B. Olson hire)
 2007 Chair, Faculty Search Committee – Nutritional Biochemist / Metabolism (E Yen hire)
 2006 Departmental Advisory Committee, trio of 3 elected faculty providing temporary departmental administration during a leadership vacuum
 2004 - Chair, Certification Committee for IGPNS (review & approve grad student progress)
 2003 – 2012 Graduate Admissions Committee
 2003 – 2008 Mentor Committee – HC Lai (successful promotion to Assoc Prof)
 2001 CSREES documentation team, led writing of document evaluating our department’s research program and suggested future directions, part of USDA-mandated review of our department as a Land-Grant Institution; led to increased College investment in our dept.
 1998 – 2004 Chair, Curriculum Committee (review & approve curricular policy)

OTHER

- 2002 – 2010 National Board of Directors, House Rabbit Society (Richmond CA)

LAY PUBLICATIONS

These address the nutritional needs of the domestic rabbit, the third-most common companion animal in the U.S. I am a nationally recognized expert on this subject, as seen in (9) below, the standard veterinary text for small mammal care.

1. **Smith SM.** 2020. Gastrointestinal Physiology and Nutrition of the Rabbit. In: *Ferrets, Rabbits and Rodents: Clinical Medicine and Surgery, 4th Ed.* Ed: KE Quesenberry, C Mans, C Orcutt. Elsevier. (Book Chapter)
2. **Smith SM.** 2015. Invited speaker. “Fundamentals of Nutrition & Disease in Domestic Rabbits”, Wisconsin Exotic Animal Veterinary Conference, sponsored by UW Vet School. Madison WI. February 2015.
3. **Smith SM.** 2014. Invited speaker, “Practical Nutrition: Adapting Dietary Recommendations for Specific Rabbit Needs” 60 min oral presentation at the House Rabbit Society’s International Conference. St. Louis, MO.
4. **Smith SM.** 2012. “Pet Rabbits.” in: *Rabbit Production, 9th edition.* JI McNitt, NM Patton, SD Lukefahr, PR Cheeke, eds. Interstate Publishers: Danville, IL. Textbook chapter covering the care, nutrition, and medicine of companion domestic rabbits.
5. **Smith SM.** 2011. “Rabbit Nutrition.” 80 min DVD filmed by the National House Rabbit Society. Extended lecture on nutrition principles and their application to the domestic rabbit, including diet composition, how to read labels, and nutrition across the life-cycle and across disease states. Drollery Press: Alameda, CA
6. **Smith SM.** 2005. “Loving Thumper to Death.” Commissioned article in *Rabbits USA 2005-2006.* Lay article on companion rabbit obesity diagnosis and treatment.
7. **Smith SM.** 2004. “Are You Raising a Junk-Food Rabbit?” Commissioned article in *Rabbits USA 2004-2005.* Lay article on healthy food choices for pet rabbits.
8. **Smith SM.** 2002. “Beat the bad diet rap. Help your rabbit flourish using today’s nutritional know-how.” Commissioned article in *Rabbits USA. 2002-2003.* Article for the lay-person on companion rabbit health and nutrition. Rabbits USA is an annual publication sold in pet stores and bookstores across North America.
9. **Smith SM.** 1999. “Pet Rabbits.” in: *Rabbit Production, 8th edition.* JI McNitt, NM Patton, SD Lukefahr, PR Cheeke, eds. Interstate: Danville, IL. Textbook chapter covering the care, nutrition, and medicine of companion domestic rabbits.