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**Education**

<b>Research Scientist</b>	<i>Massachusetts Institute of Technology</i> Center for Environmental Health Sciences Mentor: Leona Samson	<b>2002-2008</b>
<b>Post-Doctoral Associate</b>	<i>Massachusetts Institute of Technology</i> Department of Biomaterials Science/Biology Mentor: Cho-Kyun Rha	<b>2000-2002</b>
<b>Ph.D.</b>	<i>Tulane University-Degree</i> <i>Yale University-Research</i> Degree: Biology Department of Biology Mentor: Xing-Wang Deng	<b>2000</b>
<b>M.S.</b>	<i>Tulane University</i> Degree: Biology Department of Biology Mentor: Phillip Kadowitz (Pharmacology)	<b>1997</b>
<b>B.S.</b>	<i>William Smith College</i> Degree: Biology High Honors, Magna Cum Laude, Phi Beta Kappa Mentor: Steve Kolmes	<b>1995</b>

**Professional Experiences**

Carol Remmer Angle Distinguished Professor	UNC	2017-present
Professor, Department of Environmental Sciences and Engineering	UNC	2017
Associate Professor, Department of Environmental Sciences and Engineering	UNC	2013-2017
Assistant Professor, Department of Environmental Sciences and Engineering	UNC	2008-2013
Research Scientist	MIT	2002-2008
Post-Doctoral Associate	MIT	2000-2002
Graduate Research Assistant	Yale University	1997-2000
Graduate Research Assistant	Tulane University	1995-1997
Undergraduate Research Assistant	Cornell University	1994-1995
Research Intern	SmithKline Beecham Pharmaceuticals	1994

**Other Professional Experiences**

Associate Chair, Department of Environmental Sciences and Engineering	UNC	2017-present
Director, Institute for Environmental Health Solutions	UNC	2017-present
Director, UNC Superfund Research Program	UNC	2020-present; 2015-2018

Curriculum Vitae for Rebecca C. Fry, Ph.D.		Date: April 2022
Associate Director for Translational Science, UNC Center for Environmental Health and Susceptibility		2021-
Director, Graduate Studies, Curriculum in Toxicology and Environmental Medicine UNC		2015-present
Deputy Director, UNC Superfund Research Program	UNC	2014-2015
Director, Biostatistics T32 Training Grant	UNC	2010-present
Director, CEHS Genomics and Bioinformatics Group	MIT	2006-2008

### Honors and Awards

- Translational Science Impact Award, Society of Toxicology 2021
- Teaching Innovation Award, Gillings School of Global Public Health 2014
- Teaching Innovation Award, Gillings School of Global Public Health 2012
- Newton Underwood Memorial Teaching Award 2011
- Winner of NIEHS Outstanding New Environmental Scientist (ONES) Award 2010
- PopTech Science Public Leadership Fellowship 2010
- Aspen Cancer Conference Fellow 2009
- Pfizer Scholar in Public Health 2009
- Infinite Mile Award-Massachusetts Institute of Technology 2005
- Magna Cum Laude and High Honors in Biology 1995

### Scientific Membership

- Society for Pediatric Research 2020-present
- American Chemistry Society 2012-present
- Society of Toxicology 2010-present
- Environmental Mutagen Society 2007-present
- Sigma Xi 1995-present
- Phi Beta Kappa 1995-present

Note that activities that represent a focus on diversity, equity and inclusion are annotated with a @.

### Bibliography

Peer-reviewed publications (199 published or *in press*). Note: \* indicates student mentees, \*\* indicates post-doc/senior researcher mentees, # indicates junior faculty mentee, ++ indicates senior author, & indicates co-senior author:

1. Blackwell CK, Mansolf M, Sherlock P, Ganiban J, Hofheimer JA, Barone CJ, Bekelman TA, Blair C, Cella D, Collazo S, Croen LA, Deoni S, Elliott AJ, Ferrara A, **Fry RC**, Gershon R, Herbstman JB, Karagas MR, LeWinn KZ, Margolis A, Miller RL, O'Shea TM, Porucznik CA, Wright RJ. Youth Well-being During the COVID-19 Pandemic. *Pediatrics*. 2022 Apr 1;149(4):e2021054754. doi: 10.1542/peds.2021-054754.
2. PMID: 35301542 Liu W, Sun Q, Huang L, Bhattacharya A, Wang GW, Tan X, Kuban KCK, Joseph RM, O'Shea TM, **Fry RC**, Li Y, #Santos HP Jr. Innovative computational approaches shed light on genetic mechanisms underlying cognitive impairment among children born extremely preterm. *J Neurodev Disord*. 2022 Mar 3;14(1):16. doi: 10.1186/s11689-022-09429-x. PMID: 35240980
3. Bangma JT, Reiner J, **Fry RC**, Manuck T, McCord J, Strynar MJ. Identification of an Analytical Method Interference for Perfluorobutanoic Acid in Biological Samples. *Environ Sci Technol Lett*. 2021 Nov 19;8(12):1085-1090. doi: 10.1021/acs.estlett.1c00901. PMID: 35127964
4. Bhattacharya A, \*Freedman AN, \*Avula V, Harris R, Liu W, Pan C, Lusia AJ, Joseph RM, \*\*Smeester L, \*\*Hartwell HJ, Kuban KCK, Marsit CJ, Li Y, O'Shea TM, &**Fry RC**, #Santos HP Jr. Placental genomics mediates genetic associations with complex health traits and disease. *Nat Commun*. 2022 Feb 4;13(1):706. doi: 10.1038/s41467-022-28365-x. PMID: 35121757.
5. Frazier JA, Cochran D, Kim S, Jalnapurkar I, Joseph RM, Hooper SR, #Santos HP Jr, Ru H, Venuti L, Singh R, Washburn LK, Gogeu S, Msall ME, Kuban KCK, Rollins JV, Hanson SG, Jara H, Pastyrnak SL, Roell KR, &**Fry**

- RC**, O'Shea TM; ELGAN Study Investigators. Psychiatric Outcomes, Functioning, and Participation in Extremely Low Gestational Age Newborns at Age 15 Years. *J Am Acad Child Adolesc Psychiatry*. 2021 Dec 27:S0890-8567(21)02093-1. doi: 10.1016/j.jaac.2021.12.008. PMID: 34973366.
6. #Jackson WM, #Santos HP Jr, \*\*Hartwell HJ, Gower WA, Chhabra D, Hagood JS, Laughon MM, Payton A, \*\*Smeester L, \*\*Roell K, O'Shea TM, **++Fry RC**. Differential placental CpG methylation is associated with chronic lung disease of prematurity. *Pediatr Res*. 2021 Dec 2. doi: 10.1038/s41390-021-01868-x. Online ahead of print. PMID: 34857876.
  7. \*Eaves LA, \*\*Keil AP, Rager JE, George A, **++Fry RC**. Analysis of the novel NCWELL database highlights two decades of co-occurrence of toxic metals in North Carolina private well water: Public health and environmental justice implications. *Sci Total Environ*. 2021 Nov 9:151479. doi: 10.1016/j.scitotenv.2021.151479. Online ahead of print. PMID: 34767890
  8. Belfort MB, Ramel SE, Martin CR, Fichorova R, Kuban KCK, Heeren T, **&Fry RC**, O'Shea TM. Systemic Inflammation in the First 2 Weeks after Birth as a Determinant of Physical Growth Outcomes in Hospitalized Infants with Extremely Low Gestational Age. *J Pediatr*. 2021 Sep 8:S0022-3476(21)00879-9. doi: 10.1016/j.jpeds.2021.09.006. Online ahead of print. PMID: 34508750
  9. \*Clark J, \*Eaves LA, \*Gaona AR, Santos HP Jr#, \*\*Smeester L, \*\*Bangma JT, Rager JE, O'Shea TM, **++Fry RC**. Pre-pregnancy BMI-associated miRNA and mRNA expression signatures in the placenta highlight a sexually-dimorphic response to maternal underweight status. *Sci Rep*. 2021 Aug 3;11(1):15743. doi: 10.1038/s41598-021-95051-1. PMID: 34344912 Free PMC article.
  10. Manuck TA, \*Eaves LA, Rager JE, Sheffield-Abdullah K, **Fry RC**. Nitric oxide-related gene and microRNA expression in peripheral blood in pregnancy vary by self-reported race. *Epigenetics*. 2021 Jul 24:1-15. doi: 10.1080/15592294.2021.1957576. Online ahead of print. PMID: 34308756
  11. \*Clark J, \*Avula V, Ring C, \*Eaves LA, Howard T, #Santos HP Jr, Smeester L, \*\*Bangma JT, O'Shea TM, **Fry RC**, Rager JE. Comparing the Predictivity of Human Placental Gene, microRNA, and CpG Methylation Signatures in Relation to Perinatal Outcomes. *Toxicol Sci*. 2021 Jul 13:kfab089. doi: 10.1093/toxsci/kfab089. PMID: 34255065
  12. Sun SV, Young K, **Fry RC**, Manuck TA. Sonographic and genetic findings in a case of asymptomatic spontaneous uterine rupture. *Ultrasound Obstet Gynecol*. 2021 Jun 28. doi: 10.1002/uog.23727. Online ahead of print. PMID: 34182600
  13. \*Oldenburg KS, \*Eaves LA, \*\*Smeester L, #Santos HP Jr, O'Shea TM, **++Fry RC**. Development of the genomic inflammatory index (GII) to assess key maternal antecedents associated with placental inflammation. *Placenta*. 2021 Aug;111:82-90. doi: 10.1016/j.placenta.2021.06.010. Epub 2021 Jun 18. PMID: 34182215
  14. Campbell H, Check J, Kuban KCK, Leviton A, Joseph RM, Frazier JA, Douglass LM, Roell K, Allred EN, Fordham LA, Hooper SR, Jara H, Paneth N, Mokrova I, Ru H, Santos HP Jr#, **&Fry RC**, O'Shea TM. Neonatal Cranial Ultrasound Findings Among Infants Born Extremely Preterm: Associations With Neurodevelopmental Outcomes at Ten Years of Age. *J Pediatr*. 2021 Jun 3:S0022-3476(21)00510-2. doi: 10.1016/j.jpeds.2021.05.059. Online ahead of print. PMID: 34090894
  15. Manuck TA, Lai MY, Ru H, Glover AV, Rager JE, **Fry RC**, Lu K. Metabolites from mid-trimester plasma of pregnant patients at high-risk for preterm birth. *Am J Obstet Gynecol MFM*. 2021 May 12:100393. doi: 10.1016/j.ajogmf.2021.100393. Online ahead of print. PMID: 33991707
  16. Manuck TA, \*Eaves LA, Rager JE, **Fry RC**. Mid-pregnancy maternal blood nitric oxide-related gene and miRNA expression are associated with preterm birth. *Epigenomics*. 2021 Apr 23. doi: 10.2217/epi-2020-0346. Online ahead of print. PMID: 33890487
  17. Taylor GL, Joseph RM, Kuban KCK, Douglass LM, Laux J, Andrews B, **Fry RC**, Price WA, O'Shea TM. Changes in Neurodevelopmental Outcomes From Age 2 to 10 Years for Children Born Extremely Preterm. *Pediatrics*. 2021 Apr 6:e2020001040. doi: 10.1542/peds.2020-001040. Online ahead of print. PMID: 33824183
  18. Sly PD, Trottier BA, Bulka CM, Cormier SA, Fobil J, **Fry RC**, Kim KW, Kleeberger S, Kumar P, Landrigan PJ, Lodrop Carlsen KC, Pascale A, Polack F, Ruchirawat M, Zar HJ, Suk WA. The interplay between environmental exposures and COVID-19 risks in the health of children. *Environ Health*. 2021 Mar 26;20(1):34. doi: 10.1186/s12940-021-00716-z. PMID: 33771185 Free PMC article.
  19. Stýblo M, Venkatratnam A, **Fry RC**, Thomas DJ. Origins, fate, and actions of methylated trivalent metabolites of inorganic arsenic: progress and prospects. *Arch Toxicol*. 2021 Mar 26. doi: 10.1007/s00204-021-03028-w. Online ahead of print. PMID: 33768354 Review.

20. Venkatesh KK, Leviton A, Fichorova RN, Joseph RM, Douglass LM, Frazier JA, Kuban KC, Santos HP Jr<sup>#</sup>, **Fry RC**, O'Shea TM. Prenatal tobacco smoke exposure and neurological impairment at 10 years of age among extremely preterm children: a prospective cohort. *BJOG*. 2021 Mar 7. doi: 10.1111/1471-0528.16690. PMID: 33682301
21. Khan F, Kwapiszewska K, Zhang Y, Chen Y, Lambe AT, Kołodziejczyk A, Jalal N, Rudzinski K, Martínez-Romero A, **Fry RC**, Surratt JD, Szmigielski R. Toxicological Responses of  $\alpha$ -Pinene-Derived Secondary Organic Aerosol and Its Molecular Tracers in Human Lung Cell Lines. *Chem Res Toxicol*. 2021 Mar 15;34(3):817-832. doi: 10.1021/acs.chemrestox.0c00409. Epub 2021 Mar 2. PMID: 33653028
22. \*Venkatratnam A, \*Marable CA, \*Keshava AM, **Fry RC**. Relationships among Inorganic Arsenic, Nutritional Status CpG Methylation and microRNAs: A Review of the Literature. *Epigenet Insights*. 2021 Feb 5;14:2516865721989719. doi: 10.1177/2516865721989719. eCollection 2021. PMID: 33615137 Free PMC article. Review.
23. \*\*Bulka CM, \*Avula V, **Fry RC**. Associations of exposure to perfluoroalkyl substances individually and in mixtures with persistent infections: Recent findings from NHANES 1999-2016. *Environ Pollut*. 2021 Apr 15;275:116619. doi: 10.1016/j.envpol.2021.116619. Epub 2021 Jan 30. PMID: 33578314
24. Mischler A, Karakis V, Mahinthakumar J, Carberry CK, San Miguel A, Rager JE, **Fry RC**, Rao BM. Two distinct trophectoderm lineage stem cells from human pluripotent stem cells. *J Biol Chem*. 2021 Feb 5;296:100386. doi: 10.1016/j.jbc.2021.100386. Online ahead of print. PMID: 33556374
25. Douillet C, Ji J, Meenakshi IL, Lu K, de Villena FP, **Fry RC**, Stýblo M. Diverse genetic backgrounds play a prominent role in the metabolic phenotype of CC021/Unc and CC027/GeniUNC mice exposed to inorganic arsenic. *Toxicology*. 2021 Mar 30;452:152696. doi: 10.1016/j.tox.2021.152696. Epub 2021 Jan 29. PMID: 33524430
26. Stone J, Sutrave P, Gascoigne E, Givens MB, **Fry RC**, Manuck TA. Exposure to toxic metals and per- and polyfluoroalkyl substances (PFAS) and the risk of preeclampsia and preterm birth in the United States: A review. *Am J Obstet Gynecol MFM*. 2021 Jan 11:100308. doi: 10.1016/j.ajogmf.2021.100308. Online ahead of print. PMID: 33444805
27. #Santos, HP Jr, Bhattacharya, A, Joseph, RM, \*\*Smeester, L, Kuban, KCK, Marsit, C, O'Shea, TM, **Fry RC**. Evidence for the placenta-brain axis: multi-omic kernel aggregation predicts intellectual and social impairment in children born extremely preterm. *Mol Autism*. 2020 Dec 11;11(1):97. doi: 10.1186/s13229-020-00402-w. PMID: 33308293. PMCID: PMC7730750. DOI: 10.1186/s13229-020-00402-w
28. Anderson C, **Fry RC**, \*\*Hartwell H, Kleeberger C, Sandler DP, Nichols HB. Measurement of mitochondrial DNA copy number in dried blood spots: A pilot study. *Mitochondrion*. 2020 Nov 18;56:35-39. doi: 10.1016/j.mito.2020.11.006. Online ahead of print. PMID: 33220500
29. Parada H Jr, Wu T, **Fry RC**, Farnan L, Smith GJ, Mohler JL, Bensen JT. Understanding the Relationship between Environmental Arsenic and Prostate Cancer Aggressiveness among African-American and European-American Men in North Carolina. *Int J Environ Res Public Health*. 2020 Nov 12;17(22):8364. doi: 10.3390/ijerph17228364. PMID: 33198142 Free PMC article.
30. \*\*Bangma JT, \*\*Hartwell H, Santos HP Jr<sup>#</sup>, O'Shea TM, **Fry RC**. Placental programming, perinatal inflammation, and neurodevelopment impairment among those born extremely preterm. *Pediatr Res*. 2020 Nov 12:1-10. doi: 10.1038/s41390-020-01236-1. Online ahead of print. PMID: 33184498 Free PMC article. Review.
31. \*\*Venkatratnam A, Douillet C, Topping BC, Shi Q, \*Addo KA, Ideraabdullah FY, **Fry RC**, Styblo M. Sex-dependent effects of preconception exposure to arsenite on gene transcription in parental germ cells and on transcriptomic profiles and diabetic phenotype of offspring. *Arch Toxicol*. 2020 Nov 3. doi: 10.1007/s00204-020-02941-w. Online ahead of print. PMID: 33145626
32. \*Meakin CJ, \*\*Szilagyi JT, \*Avula V, **Fry RC**. Inorganic arsenic and its methylated metabolites as endocrine disruptors in the placenta: Mechanisms underpinning glucocorticoid receptor (GR) pathway perturbations. *Toxicol Appl Pharmacol*. 2020 Oct 29;409:115305. doi: 10.1016/j.taap.2020.115305. Online ahead of print. PMID: 33129825.
33. \*Addo KA, \*Palakodety N, **Fry RC**. Acetaminophen modulates the expression of steroidogenesis-associated genes and estradiol levels in human placental JEG-3 cells. *Toxicol Sci*. 2020 Oct 24:kfaa160. doi: 10.1093/toxsci/kfaa160. Online ahead of print. PMID: 33098425
34. \*Eaves LA, Nguyen HT, \*\*Rager JE, Sexton KG, Howard T, \*\*Smeester L, \*Freedman AN, Aagaard KM, Shope C, Lefer B, Flynn JH, Erickson MH, **Fry RC**, Vizuete W. Identifying the Transcriptional Response of Cancer and Inflammation-Related Genes in Lung Cells in Relation to Ambient Air Chemical Mixtures in

- Houston, Texas. *Environ Sci Technol*. 2020 Nov 3;54(21):13807-13816. doi: 10.1021/acs.est.0c02250. Epub 2020 Oct 16. PMID: 33064461
35. Li G, Raffield L, Logue M, Miller MW, Santos HP Jr<sup>#</sup>, O'Shea TM, **Fry RC**, Li Y. CUE: CpG impUtation ensemble for DNA methylation levels across the human methylation450 (HM450) and EPIC (HM850) BeadChip platforms. *Epigenetics*. 2020 Oct 4:1-11. doi: 10.1080/15592294.2020.1827716. Online ahead of print. PMID: 33016200
  36. **Szilagyi JT**, **Avula V**, **Fry RC**. Perfluoroalkyl Substances (PFAS) and Their Effects on the Placenta, Pregnancy, and Child Development: a Potential Mechanistic Role for Placental Peroxisome Proliferator-Activated Receptors (PPARs). *Curr Environ Health Rep*. 2020 Sep;7(3):222-230. doi: 10.1007/s40572-020-00279-0. PMID: 32812200.
  37. **Eaves LA**, **Phookphan P**, **Rager JE**, **Bangma J**, **Santos HP Jr**, **Smeester L**, **O'Shea TM**, **Fry RC**. A role for microRNAs in the epigenetic control of sexually dimorphic gene expression in the human placenta. *Epigenomics*. 2020 Sep;12(17):1543-1558. doi: 10.2217/epi-2020-0062. Epub 2020 Sep 9. PMID: 32901510
  38. **Addo KA**, **Palakodety N**, **Hartwell HJ**, **Tingare A**, **Fry RC**. Placental microRNAs: Responders to environmental chemicals and mediators of pathophysiology of the human placenta. *Toxicol Rep*. 2020 Aug 15;7:1046-1056. doi: 10.1016/j.toxrep.2020.08.002. eCollection 2020. PMID: 32913718 Free PMC article.
  39. **Bulka CM**, **Bommarito PA**, **Aiello AE**, **Fry RC**. Cytomegalovirus seroprevalence, recurrence, and antibody levels: Associations with cadmium and lead exposures in the general United States population. *Environ Epidemiol*. 2020 Jun 5;4(4):e100. doi: 10.1097/EE9.000000000000100. eCollection 2020 Aug. PMID: 32832839.
  40. **Payton A**, **Clark J**, **Eaves L**, **Santos HP Jr**, **Smeester L**, **Bangma JT**, **O'Shea TM**, **Fry RC**, **Rager JE**. Placental genomic and epigenomic signatures associated with infant birth weight highlight mechanisms involved in collagen and growth factor signaling. *Reprod Toxicol*. 2020 Jul 25;96:221-230. doi:10.1016/j.reprotox.2020.07.007. Online ahead of print. PMID: 32721520
  41. **Sanderson KR**, **Chang E**, **Bjornstad E**, **Hogan SL**, **Hu Y**, **Askenazi D**, **Fry RC**, **O'Shea TM**. Albuminuria, Hypertension, and Reduced Kidney Volumes in Adolescents Born Extremely Premature. *Front Pediatr*. 2020 May 12;8:230. doi: 10.3389/fped.2020.00230. eCollection 2020. PMID: 32528916.
  42. **Bangma J**, **Eaves LA**, **Oldenburg K**, **Reiner JL**, **Manuck T**, **Fry RC**. Identifying Risk Factors for Levels of Per- and Polyfluoroalkyl Substances (PFAS) in the Placenta in a High-Risk Pregnancy Cohort in North Carolina. *Environmental Science & Technology*. *Environ Sci Technol*. 2020 Jul 7;54(13):8158-8166. doi: 10.1021/acs.est.9b07102. Epub 2020 Jun 12. PMID 32469207 DOI: 10.1021/acs.est.9b07102.
  43. **Oldenburg KS**, **O'Shea TM**, **Fry RC**. Genetic and epigenetic factors and early life inflammation as predictors of neurodevelopmental outcomes. *Semin Fetal Neonatal Med*. 2020 May 15:101115. doi: 10.1016/j.siny.2020.101115. Online ahead of print. PMID: 32444251
  44. **Szilagyi JT**, **Freedman AN**, **Kepper SL**, **Keshava AM**, **Bangma JT**, **Fry RC**. Per- and polyfluoroalkyl substances (PFAS) differentially inhibit placental trophoblast migration and invasion *in vitro*. *Toxicol Sci*. 2020 Mar 27. pii: kfaa043. doi: 10.1093/toxsci/kfaa043. PMID: 32219433
  45. **Surratt JD**, **Lin YH**, **Arashiro M**, **Vizueté WG**, **Zhang Z**, **Gold A**, **Jaspers I**, **Fry RC**. Understanding the Early Biological Effects of Isoprene-Derived Particulate Matter Enhanced by Anthropogenic Pollutants. *Res Rep Health Eff Inst*. 2019 Mar;(198):1-54. PMID: 31872748
  46. **Rager JE**, **Carberry C**, **Fry RC**. Use of Genome Editing Tools in Environmental Health Research. *Curr Opin Toxicol*. 2019 Dec;18:13-17. doi: 10.1016/j.cotox.2019.02.007. Epub 2019 Mar 2. PMID: 31656878
  47. **Buckley JP**, **Barrett ES**, **Beamer PI**, **Bennett DH**, **Bloom MS**, **Fennell TR**, **Fry RC**, **Funk WE**, **Hamra GB**, **Hecht SS**, **Kannan K**, **Iyer R**, **Karagas MR**, **Lyall K**, **Parsons PJ**, **Pellizzari ED**, **Signes-Pastor AJ**, **Starling AP**, **Wang A**, **Watkins DJ**, **Zhang M**, **Woodruff TJ**; program collaborators for ECHO. Opportunities for evaluating chemical exposures and child health in the United States: the Environmental influences on Child Health Outcomes (ECHO) Program. *J Expo Sci Environ Epidemiol*. 2020 Feb 17. doi: 10.1038/s41370-020-0211-9. [Epub ahead of print] Review. PMID: 32066883
  48. **Rager JE**, **Bangma J**, **Carberry C**, **Chao A**, **Grossman J**, **Lu K**, **Manuck TA**, **Sobus JR**, **Szilagyi J**, **Fry RC**. Review of the environmental prenatal exposome and its relationship to maternal and fetal health. *Reprod Toxicol*. 2020 Feb 22. pii: S0890-6238(20)30017-4. doi: 10.1016/j.reprotox.2020.02.004. Review. PMID:32061676
  49. **Eaves LA**, **Smeester L**, **Hartwell HJ**, **Lin YH**, **Arashiro M**, **Zhang Z**, **Gold A**, **Surratt JD**, **Fry RC**. Isoprene-Derived Secondary Organic Aerosol Induces the Expression of MicroRNAs Associated with

- Inflammatory/Oxidative Stress Response in Lung Cells. *Chem Res Toxicol.* 2020 Feb 17;33(2):381-387. doi: 10.1021/acs.chemrestox.9b00322. Epub 2019 Dec 13. PMID: 31765140
50. \*Tomlinson MS, Santos HP Jr<sup>#</sup>, Stewart JR, Joseph R, Leviton A, Onderdonk AB, Kuban KCK, Heeren T, O'Shea TM, **Fry RC<sup>++</sup>**; ELGAN Study Investigators. Neurocognitive and social-communicative function of children born very preterm at 10 years of age: Associations with microorganisms recovered from the placenta parenchyma. *J Perinatol.* 2020 Feb;40(2):306-315. doi: 10.1038/s41372-019-0505-8. Epub 2019 Oct 17. PMID:31624322
  51. Stýblo M, Douillet C, **\*\*Bangma J**, \*Eaves LA, de Villena FP, **Fry R**. Differential metabolism of inorganic arsenic in mice from genetically diverse Collaborative Cross strains. *Arch Toxicol.* 2019 Sep 6. doi: 10.1007/s00204-019-02559-7.
  52. \*Tomlinson MS, \*Bommarito P, George A, Yelton S, Cable P, Coyte R, Karr J, Vengosh A, Gray KM, **++Fry RC**. Assessment of inorganic contamination of private wells and demonstration of effective filter-based reduction: A pilot-study in Stokes County, North Carolina. *Environ Res.* 2019 Oct;177:108618. doi: 10.1016/j.envres.2019.108618. Epub 2019 Aug 2. PMID: 31419714
  53. \*Addo KA, **\*\*Bulka C**, Dhingra R, Santos HP Jr<sup>#</sup>, **\*\*Smeester L**, O'Shea TM, **++Fry RC**. Acetaminophen use during pregnancy and DNA methylation in the placenta of the extremely low gestational age newborn (ELGAN) cohort. *Environ Epigenet.* 2019 Aug 6;5(2):dvz010. doi: 10.1093/eep/dvz010. eCollection 2019 Apr. PMID: 31404209
  54. \*Bommarito PA, Kim SS, Meeker JD, **Fry RC**, Cantonwine DE, McElrath TF, Ferguson KK. Urinary trace metals, maternal circulating angiogenic biomarkers, and preeclampsia: a single-contaminant and mixture-based approach. *Environ Health.* 2019 Jul 12;18(1):63. doi: 10.1186/s12940-019-0503-5. PMID: 31300062 Free PMC Article
  55. **\*\*Bulka CM**, Dammann O, Santos HP Jr<sup>#</sup>, VanderVeen DK, **\*\*Smeester L**, Fichorova R, O'Shea TM, **++Fry RC**. Placental CpG Methylation of Inflammation, Angiogenic, and Neurotrophic Genes and Retinopathy of Prematurity. *Invest Ophthalmol Vis Sci.* 2019 Jul 1;60(8):2888-2894. doi: 10.1167/iovs.18-26466. PMID: 31266060 Free PMC Article
  56. **++Fry RC**, \*Addo KA, Bell TA, Douillet C, \*Martin E, Stýblo M, Pardo-Manuel de Villena F. Effects of preconception and *in utero* inorganic arsenic exposure on the metabolic phenotype of genetically diverse Collaborative Cross mice. *Chem Res Toxicol.* 2019 Jun 28. doi: 10.1021/acs.chemrestox.9b00107. [Epub ahead of print] PMID: 31251040
  57. **\*\*Bulka CM**, \*Bommarito PA, **++Fry RC**. Predictors of toxic metal exposures among US women of reproductive age. *J Expo Sci Environ Epidemiol.* 2019 Jun 24. doi: 10.1038/s41370-019-0152-3. [Epub ahead of print] PMID: 31235790
  58. **Fry RC**, **\*\*Bangma J**, **\*\*Szilagy J**, Rager JE. Developing novel in vitro methods for the risk assessment of developmental and placental toxicants in the environment. *Toxicol Appl Pharmacol.* 2019 Jun 21:114635. doi: 10.1016/j.taap.2019.114635. [Epub ahead of print] PMID: 31233757
  59. \*Clark J, \*Martin E, **\*\*Bulka CM**, **\*\*Smeester L**, Santos HP Jr<sup>#</sup>, O'Shea TM, **++Fry RC**. Associations between placental CpG methylation of metastable epialleles and childhood body mass index across ages one, two and ten in the Extremely Low Gestational Age Newborns (ELGAN) cohort. *Epigenetics.* 2019 Jun 19. doi: 10.1080/15592294.2019.1633865. [Epub ahead of print] PMID: 31216936
  60. Santos HP Jr<sup>#</sup>, Bhattacharya A, \*Martin EM, \*Addo K, Psioda M, **\*\*Smeester L**, Joseph RM, Hooper SR, Frazier JA, Kuban KC, O'Shea TM, **++Fry RC**. ELGAN Investigators. Epigenome-Wide DNA Methylation in Placentas from Preterm Infants: Association with Maternal Socioeconomic Status. *Epigenetics.* 2019 May 7. doi: 10.1080/15592294.2019.1614743. PMID: 31062658
  61. \*Tomlinson MS, Lu K, Stewart JR, Marsit CJ, O'Shea TM, **++Fry RC**. Microorganisms in the Placenta: Links to Early-Life Inflammation and Neurodevelopment in Children. *Clin Microbiol Rev.* 2019 May 1;32(3). pii: e00103-18. doi: 10.1128/CMR.00103-18. Print 2019 Jun 19. Review. PMID: 31043389
  62. **\*\*Bangma JT**, Kwiatkowski E, Psioda M, Santos HP Jr<sup>#</sup>, Hooper SR, Douglass L, Joseph RM, Frazier JA, Kuban KCK, O'Shea TM, **++Fry RC**. ELGAN Investigators. Early life antecedents of positive child health among 10-year-old children born extremely preterm. *Pediatr Res.* 2019 Apr 20. doi: 10.1038/s41390-019-0404-x. PMID: 31005057

63. Vora NL, Parker JS, Mieczkowski PA, **\*\*Smeester L, ++Fry RC, Boggess KA.** RNA-Sequencing of Umbilical Cord Blood to Investigate Spontaneous Preterm Birth: A Pilot Study. *AJP Rep.* 2019 Jan;9(1):e60-e66. doi: 10.1055/s-0039-1678717. Epub 2019 Mar 7. PMID: 30854245 Free PMC Article
64. **\*Meakin CJ, \*Martin EM, \*Szilagyi JT, Nylander-French LA, ++Fry RC.** Inorganic Arsenic as an Endocrine Disruptor: Modulation of the Glucocorticoid Receptor Pathway in Placental Cells via CpG Methylation. *Chem Res Toxicol.* 2019 Mar 18;32(3):493-499. doi: 10.1021/acs.chemrestox.8b00352. Epub 2019 Mar 4. PMID: 30746931
65. **\*Bommarito PA, Beck R, Douillet C, Del Razo LM, Garcia-Vargas GG, Valenzuela OL, Sanchez-Peña LC, Styblo M, ++Fry RC.** Evaluation of plasma arsenicals as potential biomarkers of exposure to inorganic arsenic. *J Expo Sci Environ Epidemiol.* 2019 Feb 6. doi: 10.1038/s41370-019-0121-x. PMID: 30728485
66. Holmes BE, **\*\*Smeester L, Fry RC, Weinberg HS.** Disinfection Byproducts Bind Human Estrogen Receptor- $\alpha$ . *Environ Toxicol Chem.* 2019 May;38(5):956-964. doi: 10.1002/etc.4377. Epub 2019 Mar 20. PMID: 30698843
67. **\*Bommarito PA, Xu X, González-Horta C, Sánchez-Ramírez B, Ballinas-Casarrubias L, Luna RS, Pérez SR, Ávila JEH, García-Vargas GG, Del Razo LM, Stýblo M, Mendez MA, ++Fry RC.** One-carbon metabolism nutrient intake and the association between body mass index and urinary arsenic metabolites in adults in the Chihuahua cohort. *Environ Int.* 2019 Feb;123:292-300. doi: 10.1016/j.envint.2018.12.004. Epub 2018 Dec 13. PMID: 30553202 Free
68. Beck R, **\*Bommarito P, Douillet C, Kanke M, Del Razo LM, García-Vargas G, Fry RC, Sethupathy P, Stýblo M.** Circulating miRNAs Associated with Arsenic Exposure. *Environ Sci Technol.* 2018 Dec 18;52(24):14487-14495. doi: 10.1021/acs.est.8b06457. Epub 2018 Dec 4. PMID: 30457847
69. Santos HP Jr<sup>#</sup>, Nephew BC, Bhattacharya A, Tan X, Smith L, Alyamani RAS, **\*Martin EM, Perreira K, Fry RC, Murgatroyd C.** Discrimination exposure and DNA methylation of stress-related genes in Latina mothers. *Psychoneuroendocrinology.* 2018 Dec;98:131-138. doi: 10.1016/j.psyneuen.2018.08.014. Epub 2018 Aug 16. PMID: 30144780
70. **\*\*Bangma JT, Kwiatkowski E, Psioda M, Santos HP Jr<sup>#</sup>, Hooper SR, Douglass L, Joseph RM, Frazier JA, Kuban KCK, O'Shea TM, ++Fry RC.** Assessing Positive Child Health among Individuals Born Extremely Preterm. *J Pediatr.* 2018 Aug 2. pii: S0022-3476(18)30836-9. doi: 10.1016/j.jpeds.2018.06.037. PMID:30078720
71. **\*Laine JE, Ilievski V, Richardson DB, Herring AH, Stýblo M, Rubio-Andrade M, Garcia-Vargas G, Gamble MV, ++Fry RC.** Maternal one carbon metabolism and arsenic methylation in a pregnancy cohort in Mexico. *J Expo Sci Environ Epidemiol.* 2018 Aug 1. doi: 10.1038/s41370-018-0041-1. PMID:30068932.
72. Vora NL, Grace MR, **\*\*Smeester L, Dotters-Katz SK, Fry RC, Bae-Jump V, Boggess K.** Targeted Multiplex Gene Expression Profiling to Measure High-Fat Diet and Metformin Effects on Fetal Gene Expression in a Mouse Model. *Reprod Sci.* 2018 Jan 1:1933719118786453. doi: 10.1177/1933719118786453. PMID: 29976116
73. To KT, **Fry RC, Reif DM.** Characterizing the effects of missing data and evaluating imputation methods for chemical prioritization applications using ToxPi. *BioData Min.* 2018 Jun 13;11:10. doi: 10.1186/s13040-018-0169-5. eCollection 2018. PMID: 29942350
74. **\*Meakin CJ, \*\*Martin EM, Santos HP Jr<sup>#</sup>, Mokrova I, Kuban K, O'Shea TM, Joseph RM, \*\*Smeester L, ++Fry RC.** Placental CpG methylation of HPA-axis genes is associated with cognitive impairment at age 10 among children born extremely preterm. *Horm Behav.* 2018 May;101:29-35. doi: 10.1016/j.yhbeh.2018.02.007. Epub 2018 Mar 5. PMID: 29477804; PMCID: PMC6354776
75. Manuck TA, **Fry RC, McFarlin BL.** Quality Improvement in Perinatal Medicine and Translation of Preterm Birth Research Findings into Clinical Care. *Clin Perinatol.* 2018 Jun;45(2):155-163. doi: 10.1016/j.clp.2018.01.003. Epub 2018 Feb 23. Review. PMID:29747880
76. **\*\*Tilley SK, \*\*Martin EM, \*Smeester L, Joseph RM, Kuban KCK, Heeren TC, Dammann OU, O'Shea TM, ++Fry RC.** Placental CpG methylation of infants born extremely preterm predicts cognitive impairment later in life. *PLoS One.* 2018 Mar 7;13(3):e0193271. doi: 10.1371/journal.pone.0193271. eCollection 2018. PMID:29513726
77. **\*\*Smeester L, ++Fry RC.** Long-Term Health Effects and Underlying Biological Mechanisms of Developmental Exposure to Arsenic. *Curr Environ Health Rep.* 2018 Feb 6. doi: 10.1007/s40572-018-0184-1. Review. PMID:29411302
78. **\*\*Adebambo OA, Shea D, ++Fry RC.** Cadmium disrupts signaling of the hypoxia-inducible (HIF) and transforming growth factor (TGF- $\beta$ ) pathways in placental JEG-3 trophoblast cells via reactive oxygen species. *Toxicol Appl Pharmacol.* 2018 Mar 1;342:108-115. doi: 10.1016/j.taap.2018.01.010. Epub 2018 Feb 9. PMID:29408318

79. \*Martin EM, **++Fry RC**. Environmental Influences on the Epigenome: Exposure-Associated DNA Methylation in Human Populations. *Annu Rev Public Health*. 2018 Jan 12. PMID:29328878
80. Arashiro M, Lin YH, Zhang Z, Sexton KG, Gold A, Jaspers I, **Fry RC**, Surratt JD. Effect of secondary organic aerosol from isoprene-derived hydroxyhydroperoxides on the expression of oxidative stress response genes in human bronchial epithelial cells. *Environ Sci Process Impacts*. 2018 Jan 2. doi: 10.1039/c7em00439g. PMID:29292423
81. Manuck TA, **\*\*Smeester L**, \*Martin EM, \*Tomlinson MS, Smith C, Varner MW, **++Fry RC**. Epigenetic Regulation of the Nitric Oxide Pathway, 17- $\alpha$  Hydroxyprogesterone Caproate, and Recurrent Preterm Birth. *Am J Perinatol*. 2017 Dec 14. doi: 10.1055/s-0037-1613682. No abstract available. PMID:29241278
82. \*Tomlinson MS, \*Bommarito PA, \*Martin EM, **\*\*Smeester L**, Fichorova RN, Onderdonk AB, Kuban KCK, O'Shea TM, **++Fry RC**. Microorganisms in the human placenta are associated with altered CpG methylation of immune and inflammation-related genes. *PLoS One*. 2017 Dec 14;12(12):e0188664. doi: 10.1371/journal.pone.0188664. eCollection 2017. PMID: 29240761.
83. **\*\*Smeester L**, \*Martin EM, Cable P, Bodnar W, Boggess K, Vora NL, **++Fry RC**. Toxic metals in amniotic fluid and altered gene expression in cell-free fetal RNA. *Prenat Diagn*. 2017 Dec;37(13):1364-1366. doi: 10.1002/pd.5183. PMID:29111618
84. Rager JE, Auerbach SS, Chappell GA, \*Martin E, Thompson CM, **Fry RC**. Benchmark Dose Modeling Estimates of the Concentrations of Inorganic Arsenic That Induce Changes to the Neonatal Transcriptome, Proteome, and Epigenome in a Pregnancy Cohort. *Chem Res Toxicol*. 2017 Oct 16;30(10):1911-1920. doi: 10.1021/acs.chemrestox.7b00221. Epub 2017 Sep 27. PMID:28927277
85. Holmes BE, **\*\*Smeester L**, **Fry RC**, Weinberg HS. Identification of endocrine active disinfection by-products (DBPs) that bind to the androgen receptor. *Chemosphere*. 2017 Aug 22;187:114-122. doi: 10.1016/j.chemosphere.2017.08.105. PMID:28843117
86. \*Bommarito PA, \*Martin E, **\*\*Smeester L**, Palys T, Baker ER, Karagas MR, **++Fry RC**. Fetal-Sex Dependent Genomic Responses in the Circulating Lymphocytes of Arsenic-Exposed Pregnant Women in New Hampshire. *Reprod Toxicol*. 2017 Aug 6. pii: S0890-6238(17)30187-9. doi: 10.1016/j.reprotox.2017.07.023. PMID:28793237
87. **\*\*Brooks SA**, **++Fry RC**. Cadmium inhibits placental trophoblast cell migration via miRNA regulation of the transforming growth factor beta (TGF- $\beta$ ) pathway. *Food Chem Toxicol*. 2017 Aug 1. pii: S0278-6915(17)30441-6. doi: 10.1016/j.fct.2017.07.059. PMID:28774740
88. Lin YH, Arashiro M, Clapp PW, Cui T, Sexton KG, Vizuete W, Gold A, Jaspers I, **Fry RC**, Surratt JD. Gene Expression Profiling in Human Lung Cells Exposed to Isoprene-Derived Secondary Organic Aerosol. *Environ Sci Technol*. 2017 Jun 21. doi: 10.1021/acs.est.7b01967. PMID:28636383.
89. \*Tilley SK, Joseph RM, Kuban KCK, Dammann OU, O'Shea TM, **++Fry RC**. Genomic biomarkers of prenatal intrauterine inflammation in umbilical cord tissue predict later life neurological outcomes. *PLoS One*. 2017 May 11;12(5):e0176953. PMID:28493900. PMCID:PMC5426658
90. \*Rager JE, Ring CL, **Fry RC**, Suh M, Proctor DM, Haws LC, Harris MA, Thompson CM. High-Throughput Screening Data Interpretation in the Context of In Vivo Transcriptomic Responses to Oral Cr(VI) Exposure. *Toxicol Sci*. 2017 May 2. PMID: 28472532
91. \*Martin EM, Stýblo M, **++Fry RC**. Genetic and epigenetic mechanisms underlying arsenic-associated diabetes mellitus: a perspective of the current evidence. *Epigenomics*. 2017 May;9(5):701-710. doi: 10.2217/epi-2016-0097. Epub 2017 May 4. PMID: 28470093.
92. **\*\*Smeester L**, \*Bommarito P., \*Martin, E., Recio-Vegas, R Tania Gonzalez-Cortes, T., Olivas-Calderon, E., Lantz, C. and **++Fry RC**. Chronic early childhood exposure to arsenic is associated with a TNF-mediated proteomic signaling response. *Environmental Toxicology and Pharmacology* 52 (2017) 183–187. PMID:28433805.
93. \*Tilley, S.K., Kim, W. and **++Fry RC**. Analysis of Bladder Cancer Tumor CpG Methylation and Gene Expression within The Cancer Genome Atlas Identifies GRIA1 as a Prognostic Biomarker for Basal-Like Bladder Cancer. *Am J Cancer Res*. 2017 Sep 1;7(9):1850-1862. PMID:28979808
94. \*Martin, E., **\*\*Smeester L**, \*Bommarito, P.A., Grace, M.R., Boggess, K., Kuban, K., Karagas, M.R., Marsit, C.J., O'Shea, T.M., **Fry, R.C**<sup>++</sup>. Sexual epigenetic dimorphism in the human placenta: Implications for susceptibility to stressors during the prenatal period. *Epigenomics*. 2017 Mar;9(3):267-278. PMID:28234023.



95. \*Bommarito, P.A., **Fry, R.C<sup>++</sup>**. Developmental windows of susceptibility to inorganic arsenic: a survey of current toxicologic and epidemiologic data. *Toxicology Research*, Volume 5, Issue 6, November 2016, Pages 1503–1511.
96. \*Bommarito, P.A., \*Martin, E., **Fry, R.C<sup>++</sup>**. Effects of Prenatal Exposure to Endocrine Disruptors and Toxic Metals on the Fetal Epigenome. *Epigenomics*. 2017 Mar;9(3):333-350. PMID:28234024.
97. \*Laine, J., \*\*Bailey, K., Olshan, A., \*\*Smeester, L., Drobna, Z., Stýblo, M., Douillet, C., García-Vargas, G., Rubio-Andrade, M., Pathmasiri, W., McRitchie, S., Sumner, S., ++**Fry, RC**. Neonatal Metabolomic Profiles Related to Prenatal Arsenic Exposure. *Environmental Science and Technology*, 2017 Jan 3;51(1):625-633. PMID: 27997141.
98. \*Tilley, S.K., Reif, D.M., ++**Fry, RC**. Incorporating ToxCast and Tox21 Datasets to Rank Biological Activity of Chemicals at Superfund Sites in North Carolina. *Environment International*, 2017 Jan 30. pii: S0160-4120(16)30555-4. PMID: 28153528
99. Thompson CM, \*\*Rager JE, Suh M, Ring CL, Proctor DM, Haws LC, **Fry RC**, Harris MA. Transcriptomic responses in the oral cavity of F344 rats and B6C3F1 mice following exposure to Cr(VI): Implications for risk assessment. *Environ Mol Mutagen*. 2016 Dec;57(9):706-716. doi: 10.1002/em.22064. PMID: 27859739
100. Zabinski JW, Garcia-Vargas G, Rubio-Andrade M, **Fry RC**, Gibson JM. Advancing Dose-Response Assessment Methods for Environmental Regulatory Impact Analysis: A Bayesian Belief Network Approach Applied to Inorganic Arsenic. *Environ Sci Technol Lett*. 2016 May 10;3(5):200-204. Epub 2016 Apr 20.
101. Vizuete, W., Sexton, K.G., Nguyen, H., \*\*Smeester, L., Aagaard, K.M., Shope, C., Lefer, B, Flynn, J.H. Alvarez, S., Erickson, M.H. and ++**Fry, RC**. From the Field to the Laboratory: Air Pollutant-Induced Genomic Effects in Lung Cells. *Environmental Health Insights* 2016:Suppl. 4 15-2. PMID: PMC4760675
102. Vora NL, \*\*Smeester L, Boggess K, ++**Fry RC**. Investigating the Role of Fetal Gene Expression in Preterm Birth. *Reprod Sci*. 2016 Sep 27. pii: 1933719116670038. PMID: 27678095.
103. Franceschini N, **Fry RC**, Balakrishnan P, Navas-Acien A, Oliver-Williams C, Howard AG, Cole SA, Haack K, Lange EM, Howard BV, Best LG, Francesconi KA, Goessler W, Umans JG, Tellez-Plaza M. Cadmium body burden and increased blood pressure in middle-aged American Indians: the Strong Heart Study. *J Hum Hypertens*. 2016 Sep 15. doi: 10.1038/jhh.2016.67. PMID: 27629244.
104. Lewis MM, Flynn MR, Lee EY, Van Buren S, Van Buren E, Du G, **Fry RC**, Herring AH, Kong L, Mailman RB, Huang X. Longitudinal T1 relaxation rate (R1) captures changes in short-term Mn exposure in welders. *Neurotoxicology*. 2016 Aug 24;57:39-44. doi: 10.1016/j.neuro.2016.08.012. PMID:27567731
105. Manuck TA, Stoddard GJ, **Fry RC**, Esplin MS, Varner MW. Nonresponse to 17-alpha hydroxyprogesterone caproate for represent spontaneous preterm birth prevention: clinical prediction and generation of a risk scoring system. *Am J Obstet Gynecol*. 2016 Jul 11. pii: S0002-9378(16)30447-1. doi: 10.1016/j.ajog.2016.07.013. PMID: 27418444.
106. \*\*Brooks SA, \*Martin E, \*\*Smeester L, Grace MR, Boggess K, ++**Fry RC**. miRNAs as common regulators of the transforming growth factor (TGF)- $\beta$  pathway in the preeclamptic placenta and cadmium-treated trophoblasts: Links between the environment, the epigenome and preeclampsia. *Food Chem Toxicol*. 2016 Jun 29. pii: S0278-6915(16)30203-4. PMID: 27375191
107. Xu X, Drobna Z, Voruganti VS, Barron K, González-Horta C, Sánchez-Ramírez B, Ballinas-Casarrubias L, Cerón RH, Morales DV, Baeza Terrazas FA, Ishida MC, Gutiérrez-Torres DS, Saunders RJ, Crandell J, **Fry RC**, Loomis D, García-Vargas GG, Del Razo LM, Stýblo M, Mendez MA. Association between Variants in Arsenic (+3 Oxidation State) Methyltransferase (AS3MT) and Urinary Metabolites of Inorganic Arsenic: Role of Exposure Level. *Toxicol Sci*. 2016 Sep;153(1):112-23. PMID: 27370415
108. \*Laine JE, ++**Fry RC**. A Systems Toxicology-based Approach Reveals Biological Pathways Dysregulated by Prenatal Arsenic Exposure. *Ann Glob Health*. 2016 Jan-Feb;82(1):189-96. PMID: 27325076
109. \*\*Sollome J, \*Martin E, Sethupathy P, ++**Fry RC**. Environmental contaminants and microRNA regulation: Transcription factors as regulators of toxicant-altered microRNA expression. *Toxicol Appl Pharmacol*. 2016 Jun 10. pii: S0041-008X(16)30143-0. doi: 10.1016/j.taap.2016.06.009. PMID: 27292125
110. \*Martin E, Clapp PW, Rebuli ME, Pawlak EA, Glista-Baker EE, Benowitz NL, **Fry RC**, Jaspers I. E-cigarette use results in suppression of immune and inflammatory-response genes in nasal epithelial cells similar to cigarette smoke. *Am J Physiol Lung Cell Mol Physiol*. 2016 Jun 10;ajplung.00170.2016. doi: 10.1152/ajplung.00170.2016. PMID: 27288488

111. Chitforoushzadeh Z, Ye Z, Sheng Z, LaRue S, **Fry RC**, Lauffenburger DA, Janes KA. TNF-insulin crosstalk at the transcription factor GATA6 is revealed by a model that links signaling and transcriptomic data tensors. *Sci Signal*. 2016 Jun 7;9(431):ra59. doi: 10.1126/scisignal.aad3373.PMID: 27273097
112. Drobná Z, \*Martin E, Kim KS, \*\*Smeester L, \*Bommarito P, Rubio-Andrade M, García-Vargas GG, Stýblo M, Zou F, ++**Fry RC**. Analysis of maternal polymorphisms in arsenic (+3 oxidation state)-methyltransferase AS3MT and fetal sex in relation to arsenic metabolism and infant birth outcomes: Implications for risk analysis. *Reprod Toxicol*. 2016 Jun;61:28-38. doi: 10.1016/j.reprotox.2016.02.017. PMID: 26928318
113. Vizuete W, Sexton KG, Nguyen H, \*\*Smeester L, Aagaard KM, Shope C, Lefer B, Flynn JH, Alvarez S, Erickson MH, ++**Fry RC**. From the Field to the Laboratory: Air Pollutant-Induced Genomic Effects in Lung Cells. *Environ Health Insights*. 2016 Feb 18;9(Suppl 4):15-23. doi: 10.4137/EHI.S15656. eCollection 2015. PMID: 26917966.
114. \*Martin EM, ++**Fry RC**. A cross-study analysis of prenatal exposures to environmental contaminants and the epigenome: support for stress-responsive transcription factor occupancy as a mediator of gene-specific CpG methylation patterning. *Environ Epigenet*. 2016 Jan;2(1). pii: dvv011. PMID: 27066266.
115. Huang MC, Douillet C, Su M, Zhou K, Wu T, Chen W, Galanko JA, Drobná Z, Saunders RJ, \*Martin E, **Fry RC**, Jia W, Stýblo M. Metabolomic profiles of arsenic (+3 oxidation state) methyltransferase knockout mice: effect of sex and arsenic exposure. *Arch Toxicol*. 2016 Feb 16. PMID: 26883664
116. Lee EY, Flynn MR, Du G, Li Y, Lewis MM, Herring AH, Van Buren E, Van Buren S, Kong L, **Fry RC**, Snyder AM, Connor JR, Yang QX, Mailman RB, Huang X. Increased R2\* in the caudate nucleus of asymptomatic welders. *Toxicol Sci*. 2016 Jan 14. PMID: 26769335
117. Wilmot B, **Fry RC**, \*\*Smeester L, Musser ED, Mill J, Nigg JT. Methylomic analysis of salivary DNA in childhood ADHD identifies altered DNA methylation in VIPR2. *J Child Psychol Psychiatry*. 2016 Feb;57(2):152-60. doi: 10.1111/jcpp.12457. Epub 2015 Aug 25. PMID: 26304033.
118. Sikkeland L, Alexis NE, **Fry RC**, \*Martin E, Danielsen TE, Sørstrand P, Kongerud J. Inflammation in induced sputum after aluminium oxide exposure: an experimental chamber study. *Occup Environ Med*. 2016 Jan 19. PMID: 26786756.
119. Vidal AC, Semenova V, Darrah T, Vengosh A, Huang Z, King K, \*\*Nye MD, **Fry RC**, Skaar D, Maguire R, Murtha A, Schildkraut J, Murphy S, Hoyo C. Maternal cadmium, iron and zinc levels, DNA methylation and birth weight. *BMC Pharmacol Toxicol*. 2015 Jul 15;16:20. doi: 10.1186/s40360-015-0020-2. PMID: 26173596; PMCID: PMC4502530.
120. \*Martin E, González-Horta C, Rager J, Bailey KA, Sánchez-Ramírez B, Ballinas-Casarrubias L, Ishida MC1, Gutiérrez-Torres DS, Hernández Cerón R, Viniegra Morales D, Baeza Terrazas FA, Saunders RJ, Drobná Z, Mendez MA, Buse JB, Loomis D, Jia W, García-Vargas GG, Del Razo LM, Stýblo M, ++Fry RC. Metabolomic characteristics of arsenic-associated diabetes in a prospective cohort in Chihuahua, Mexico. *Toxicol Sci*. 2015 Apr;144(2):338-46. doi: 10.1093/toxsci/kfu318. Epub 2015 Jan 9. PMID: 25577196. PMCID: PMC4372663.
121. \*Martin E, \*\*Ray PD, \*\*Smeester L, Grace MR, Boggess K, ++**Fry RC**. Epigenetics and Preeclampsia: Defining Functional Epimutations in the Preeclamptic Placenta Related to the TGF- $\beta$  Pathway. *PLoS One*. 2015 Oct 28;10(10):e0141294. PMID: 26510177; PMCID: PMC4624949
122. \*Adebambo OA, \*\*Ray PD, Shea D, ++**Fry RC**. Toxicological responses of environmental mixtures: Environmental metal mixtures display synergistic induction of metal-responsive and oxidative stress genes in placental cells. *Toxicol Appl Pharmacol*. 2015 Oct 17. pii: S0041-008X(15)30108-3. doi: 10.1016/j.taap.2015.10.005. PMID: 26472158
123. \*Laine JE, \*\*Ray P, Bodnar W, Cable PH, Boggess K, Offenbacher S, ++**Fry RC**. Placental Cadmium Levels Are Associated with Increased Preeclampsia Risk. *PLoS One*. 2015 Sep 30;10(9):e0139341. doi: 10.1371/journal.pone.0139341. PMID: 26422011
124. \*Gona S, \*Sanders AP, Miranda ML, ++**Fry RC**. Prenatal Exposure to cadmium and Cotinine and CpG island DNA methylation in Mother-Infant Pairs. *Genom Data*. 2015 Sep 1;5:378-380. PMID: 26295018
125. Harrington JM, Young DJ, **Fry RC**, Weber FX, Sumner SS, Levine KE. Validation of a Metallomics Analysis of Placenta Tissue by Inductively-Coupled Plasma Mass Spectrometry. *Biol Trace Elem Res*. 2015 Jul 9. PMID:26155965

126. \*\*Bailey KA, Smith AH, Tokar EJ, Graziano JH, Kim KW, Navasumrit P, Ruchirawat M, Thiantanawat A, Suk WA, **++Fry RC.** Mechanisms Underlying Latent Disease Risk Associated with Early-Life Arsenic Exposure: Present Research Trends and Scientific Gaps. *Environ Health Perspect.* 2015 Jun 26. PMID:26115410
127. Mendez MA, González-Horta C, Sánchez-Ramírez B, Ballinas-Casarrubias L, Hernández Cerón R, Viniegra Morales D, Baeza Terrazas FA, Ishida MC, Gutiérrez-Torres DS, Saunders RJ, Drobná Z, **Fry RC**, Buse JB, Loomis D, García-Vargas GG, Del Razo LM, Stýblo M. Chronic Exposure to Arsenic and Markers of Cardiometabolic Risk-A Cross-Sectional Study in Chihuahua, Mexico. *Environ Health Perspect.* 2015 Jun 12. PMID:26068977
128. \*Rager JE,\*Tilley SK, \*Tulenko SE, \*Smeester L, \*\*Ray PD, \*Yosim A, Currier JM, Ishida MC, González-Horta MD, Sánchez-Ramírez B, Ballinas-Casarrubias L, Gutiérrez-Torres DS, Drobná Z, Del Razo LM, García-Vargas GG, Kim WY, Zhou YH, Wright FA, Stýblo M, **++Fry RC.** Identification of Novel Gene Targets and Putative Regulators of Arsenic-Associated DNA Methylation in Human Urothelial Cells and Bladder Cancer. *Chem Res Toxicol.* 2015 Jun 3. PMID:26039340.
129. \*Rager JE, \*Yosim A, **++Fry RC.** Prenatal exposure to arsenic and cadmium impacts infectious disease-related genes within the glucocorticoid receptor signal transduction pathway. *Int J Mol Sci.* 2014 Dec 3;15(12):22374-91. PMID: 25479081 PMCID: PMC4284714
130. Nylander-French LA, Wu MC, French JE, Boyer JC, \*\*Smeester L, \*Sanders AP, **++Fry RC.** DNA methylation modifies urine biomarker levels in 1,6-hexamethylene diisocyanate exposed workers: A pilot study. *Toxicol Lett.* 2014 Dec 1;231(2):217-26. Epub 2014 Oct 22. PMID: 25445006
131. \*Laine JE, \*\*Bailey KA, Rubio-Andrade M, Olshan AF, \*\*Smeester L, Drobná Z, Herring AH, Stýblo M, García-Vargas GG, **++Fry RC.** Maternal Arsenic Exposure, Arsenic Methylation Efficiency, and Birth Outcomes in the Biomarkers of Exposure to ARsenic (BEAR) Pregnancy Cohort in Mexico. *Environ Health Perspect.* 2014 Oct 17. PMID: 25325819 PMCID: PMC4314242
132. \*Rojas D, \*Rager JE, \*\*Smeester L, \*\*Bailey KA, Drobná Z, Rubio-Andrade M, Stýblo M, García-Vargas G, **++Fry RC.** Prenatal arsenic exposure and the epigenome: Identifying sites of 5-methyl cytosine alterations that predict functional changes in gene expression in newborn cord blood and subsequent birth outcomes. *Toxicol Sci.* 2014 Oct 10. PMID: 25304211 PMCID:PMC4274382
133. \*Johnston JE, Valentiner E, Maxson P, Miranda ML, **++Fry RC.** Maternal Cadmium Levels during Pregnancy Associated with Lower Birth Weight in Infants in a North Carolina Cohort. *PLoS One.* 2014 Oct 6;9(10):e109661. doi: 10.1371/journal.pone.0109661. PMID: 25285731 PMCID: PMC4186854
134. \*Sanders AP, Desrosiers TA, Warren JL, Herring AH, Enright D, Olshan AF, Meyer RE, **++Fry RC.** Association between arsenic, cadmium, manganese, and lead levels in private wells and birth defects prevalence in North Carolina: a semi-ecologic study. *BMC Public Health.* 2014 Sep 15;14(1):955. PMID: 25224535 PMCID:PMC4190372
135. Ihlaseh-Catalano SM, \*\*Bailey KA, Cardoso AP, Ren H, **Fry RC**, Camargo JL, Wolf DC. Dose and temporal effects on gene expression profiles of urothelial cells from rats exposed to diuron. *Toxicology.* 2014 Aug 23;325C:21-30. doi: 10.1016/j.tox.2014.08.005. PMID: 25152437
136. \*\*Ray PD, \*Yosim A, **++Fry RC.** Incorporating epigenetic data into the risk assessment process for the toxic metals arsenic, cadmium, chromium, lead, and mercury: strategies and challenges. *Front Genet.* 2014 Jul 16;5:201. doi: 10.3389/fgene.2014.00201. Review. PMID: 25076963 PMCID:PMC4100550
137. Edwards SE, Maxson P, Miranda ML, **++Fry RC.** Cadmium levels in a North Carolina cohort: Identifying risk factors for elevated levels during pregnancy. *J Expo Sci Environ Epidemiol.* 2014 Jul 30. doi: 10.1038/jes.2014.53. PMID:25073434 PMCID:PMC4312255
138. Currier JM, Ishida MC, González-Horta C, Sánchez-Ramírez B, Ballinas-Casarrubias L, Gutiérrez-Torres DS, Hernández Cerón R, Viniegra Morales D, Baeza Terrazas FA, Del Razo LM, García-Vargas GG, Saunders RJ, Drobná Z, **Fry RC**, Matoušek T, Buse JB, Mendez MA, Loomis D, Stýblo M. Associations between Arsenic Species in Exfoliated Urothelial Cells and Prevalence of Diabetes among Residents of Chihuahua, Mexico. *Environ Health Perspect.* 2014 Jun 27. PMID:25000461 PMCID:PMC4181927
139. \*\*Nye MD, **Fry RC**, Hoyo C, Murphy SK. Investigating Epigenetic Effects of Prenatal Exposure to Toxic Metals in Newborns: Challenges and Benefits. *Med Epigenet.* 2014;2(1):53-59. PMID:24955086. PMCID: PMC4061711

140. \*\*Smeester L, \*Yosim AE, Nye MD, Hoyo C, Murphy SK, **++Fry RC**. Imprinted genes and the environment: links to the toxic metals arsenic, cadmium, lead and mercury. *Genes (Basel)*. 2014 Jun 11;5(2):477-96. doi: 10.3390/genes5020477. PMID: 24921406 PMCID: PMC4094944
141. \*\*Bailey KA, **++Fry RC**. Arsenic-Associated Changes to the Epigenome: What Are the Functional Consequences? *Curr Environ Health Rep*. 2014 Jan 19;1:22-34. Review. PMID: 24860721 PMCID:PMC4026129
142. **Fry RC**, \*\*Rager JE, Bauer R, \*Sebastian E, Peden DB, Jaspers I, Alexis NE. Air toxics and epigenetic effects: ozone altered microRNAs in the sputum of human subjects. *Am J Physiol Lung Cell Mol Physiol*. 2014 Jun 15;306(12):L1129-37. doi: 10.1152/ajplung.00348.2013. Apr 25. PMID: 24771714. PMCID:PMC4060009
143. \*\*Bailey KA, \*Laine J, \*\*Rager JE, \*Sebastian E, Olshan A, \*\*Smeester L, Drobná Z, Styblo M, Rubio-Andrade M, García-Vargas G, **++Fry RC**. Prenatal Arsenic Exposure and Shifts in the Newborn Proteome: Inter-Individual Differences in Tumor Necrosis Factor (TNF)-Responsive Signaling. *Toxicol Sci*. 2014 Mar 27. PMID: 24675094. PMCID:PMC4031624
144. \*\*Bailey K, **++Fry RC**. Long-term health consequences of prenatal arsenic exposure: links to the genome and the epigenome. *Rev Environ Health*. 2014 Feb 19. PMID: 24552957. PMCID:PMC4049250
145. \*Sanders AP, \*Miller SK, Nguyen V, Kotch JB, **++Fry RC**. Toxic metal levels in children residing in a smelting craft village in Vietnam: a pilot biomonitoring study. *BMC Public Health*. 2014 Feb 4;14(1):114. PMID:24495283. PMCID:PMC3922956
146. \*Prasad RY, Simmons SO, Killius MG, Zucker RM, Kligerman AD, Blackman CF, **Fry RC**, Demarini DM. Cellular interactions and biological responses to titanium dioxide nanoparticles in HepG2 and BEAS-2B cells: Role of cell culture media. *Environ Mol Mutagen*. 2014 Jan 21. PMID: 24446152.
147. \*Rager JE, \*\*Bailey KA, \*\*Smeester L, \*Miller SK, Parker JS, Laine JE, Drobná Z, Currier J, Douillet C, Olshan AF, Rubio-Andrade M, Stýblo M, García-Vargas G, **++Fry RC**. Prenatal arsenic exposure and the epigenome: Altered microRNAs associated with innate and adaptive immune signaling in newborn cord blood. *Environ Mol Mutagen*. 2013 Dec 10. PMID: 24327377 PMCID: PMC4023469
148. \*Rager JE, Moeller BC, \*Miller SK, Kracko D, Doyle-Eisele M, Swenberg JA, **++Fry RC**. Formaldehyde-associated changes in microRNAs: tissue and temporal specificity in the rat nose, white blood cells, and bone marrow. *Toxicol Sci*. 2014 Mar;138(1):36-46. PMID: 24304932 PMCID: PMC3930361
149. \*Sanders AP, \*\*Smeester L, \*Rojas D, Debusscher T, Wu MC, Wright FA, Zhou YH, \*Laine JE, \*Rager JE, Swamy GK, Ashley-Koch A, Lynn Miranda M, **++Fry RC**. Cadmium exposure and the epigenome: Exposure-associated patterns of DNA methylation in leukocytes from mother-baby pairs. *Epigenetics*. 2013 Oct 28;9(2). PMID: 24169490. PMCID:PMC3962531
150. \*Rager JE, Bauer R, Muller LL, \*\*Smeester L, Carson JL, Brighton LE, **Fry RC**, Jaspers I. DNA methylation in nasal epithelial cells from smokers: identification of ULBP3-related effects. *Am J Physiol Lung Cell Mol Physiol*. 2013 Jul 5. PMID: 23831618. PMCID:PMC3763036
151. \*Rager JE, Moeller BC, Doyle-Eisele M, Kracko D, Swenberg JA, **++Fry RC**. Formaldehyde and Epigenetic Alterations: MicroRNA Changes in the Nasal Epithelium of Nonhuman Primates. *Environ Health Perspect*. 2013 Jan 15. PMID: 23322811.
152. \*\*Ahir B., \*Sanders AP, \*Rager JE, **++Fry RC**. Systems Biology and Birth Defects Prevention: Blockade of the Glucocorticoid Receptor Prevents Arsenic-Induced Birth Defects. *Environ Health Perspect*, 2013 Jan. (10 pages) PMID: 23458687 PMCID:PMC3616967
153. \*\*Bailey KA, Wu MC, Ward WO, \*\*Smeester L, \*Rager JE, García-Vargas G, Del Razo LM, Drobná Z, Stýblo M, **++Fry RC**. Arsenic and the Epigenome: Interindividual Differences in Arsenic Metabolism Related to Distinct Patterns of DNA Methylation. *J Biochem Mol Toxicol*. 2013 Jan 11. PMID:23315758; PMCID: PMC3892431
154. Swenberg JA, Moeller BC, Lu K, \*Rager JE, **Fry RC**, and Starr TB. Formaldehyde Carcinogenicity Research: 30 Years and Counting for Mode of Action, Epidemiology, and Cancer Risk Assessment. *Toxicol Pathol*. 2012 Nov 16. PMID: 23160431 PMCID:PMC3893912
155. Spencer PS, **Fry RC**, Palmer VS, Kisby GE. Western Pacific ALS-PDC: a prototypical neurodegenerative disorder linked to DNA damage and aberrant proteogenesis? *Front Neurol*. 2012;3:180. doi: 10.3389/fneur.2012.00180. Epub 2012 Dec 21. PMID: 23267344 PMCID: PMC3527830

156. **\*\*Bailey KA, Wallace K, \*\*Smeester L, Sheau-Fung T, Wolf DC, Edwards SW, ++Fry RC.** Transcriptional Modulation of the ERK1/2 MAPK and NF-kB Pathways in Human Urothelial Cells After Trivalent Arsenical Exposure: Implications for Urinary Bladder Cancer. *Journal of Cancer Research Updates*, 2012, Vol. 1, No.1. PMID: PMC3593739
157. Spencer P., **Fry RC**, Kisby G. Unraveling 50-year-old clues linking neurodegeneration and cancer to cycad toxins: are microRNAs a common mediator? *Front Genet.* 2012;3:192.
158. **Fry RC**, \*Rager JE, Zhou H, Zou B, Brickey JW, Ting J, Lay JC, Peden DB, Alexis NE. Individuals with increased inflammatory response to ozone demonstrate muted signaling of immune cell trafficking pathways. *Respir Res.* 2012 Oct 3;13(1):89. PMID:23033980; PMID:PMC3607990
159. Bauer RN, Brighton LE, Mueller L, Xiang Z, \*Rager JE, **Fry RC**, Peden DB, Jaspers I. Influenza enhances caspase-1 in bronchial epithelial cells from asthmatic volunteers and is associated with pathogenesis. *J Allergy Clin Immunol.* 2012 Oct;130(4):958-967.e14. PMID:23021143; PMID:PMC3470476
160. Tsang V, **Fry RC**, Niculescu MD, \*Rager JE, Saunders J, Paul DS, Zeisel SH, Waalkes MP, Stýblo M, Drobná Z. The epigenetic effects of a high prenatal folate intake in male mouse fetuses exposed in utero to arsenic. *Toxicol Appl Pharmacol.* 2012 Aug 31 (e pub). Nov 1; 264 (3):439-50. PMID:22959928; PMID:PMC3478409
161. \*Prasad RY, Chastain PD, Nikolaishvili-Feinberg N, \*\*Smeester, LM, Kaufmann, WK, **++Fry RC.** Titanium dioxide nanoparticles activate the ATM-Chk2 DNA damage response in human dermal fibroblasts. *Nanotoxicology.* 2012 Aug 23. PMID:22770119; PMID:PMC3867138
162. Svensson JP, **Fry RC**, Wang E, Somoza LA, Samson LD. Identification of Novel Human Damage Response Proteins Targeted through Yeast Orthology. *PLoS One.* 2012;7(5):e37368. Epub 2012 May 16.
163. \*Rager JE, **++Fry RC.** The Aryl Hydrocarbon Receptor Pathway: A Key Component of the microRNA-Mediated AML Signalosome. *Int. J. Environ. Res. Public Health.* 2012 May; 9:1939-53. PMID:22754483; PMID:PMC3386597
164. \*Sanders A, Flood K, Chiang S, Herring AH, Wolf L, **++Fry RC.** Towards prenatal biomonitoring in North Carolina: Assessing arsenic, cadmium, mercury, and lead levels in pregnant women. *PLoS One.* 2012;7(3):e31354. Epub 2012 Mar 9. PMID:22427803; PMID:PMC3302877
165. Hernandez M, Brickey WJ, Alexis NE, **Fry RC**, \*Rager JE, Zhou B, Ting JP, Zhou H, Peden DB. Airway cells from atopic asthmatic patients exposed to ozone display an enhanced innate immune gene profile. *J Allergy Clin Immunol.* 2012 Jan; 129(1):259-61.e1-2. PMID:22196529; PMID:PMC3254026
166. \*Sanders A, Messier K, Shehee M, Rudo K, Serre M, **++Fry RC.** Arsenic in North Carolina: Public Health Implications. *Environ Int.* 2012 Jan; 38(1):10-6. Epub 2011 Sep 10. PMID:21982028; PMID:PMC3539775
167. Svensson JP, Quiros Pseudo L, **Fry RC**, Adeleye YA, Carmichael P, Samson LD. Genomic phenotyping of the essential and non-essential yeast genome detects novel pathways for alkylation resistance. *BMC Syst Biol.* 2011 Oct 6;5(1):157.
168. \*Rager JE, Lichtveld K, Ebersviller S, \*\*Smeester L, Jaspers I, Sexton KG, **++Fry RC.** A Toxicogenomic Comparison of Primary and Photochemically Altered Air Pollutant Mixtures. *Environ Health Perspect.* 2011 Jul 14. PMID:21757418; PMID:PMC3226493
169. Kisby GE, **Fry RC**, Lasarev MR, Bammler TK, Beyer RP, Churchwell M, Doerge DR, Meira LB, Palmer VS, Ramos-Crawford AL, Ren X, Sullivan RC, Kavanagh TJ, Samson LD, Zarbl H, Spencer PS. The Cycad Genotoxin MAM Modulates Brain Cellular Pathways Involved in Neurodegenerative Disease and Cancer in a DNA Damage-Linked Manner. *PLoS One.* 2011;6(6):e20911.
170. Sheh A, Ge Z, Parry NM, Muthupalani S, \*Rager JE, Raczynski AR, Mobley MW, McCabe AF, **Fry RC**, Wang T, Fox JG. 17(beta)-estradiol and Tamoxifen prevent gastric cancer by modulating leukocyte recruitment and oncogenic pathways in *Helicobacter pylori*-infected INS-GAS male mice. *Cancer Prev Res (Phila).* 2011 Jun 16 e pub. Sep; 4 (9): 1426-35. PMID:21680705; PMID:PMC3168115
171. Dansithong W, Jog SP, Paul S, Mohammadzadeh R, Tring S, Kwok Y, **Fry RC**, Marjoram P, Comai L, Reddy S. RNA steady-state defects in myotonic dystrophy are linked to nuclear exclusion of SHARP. *EMBO Rep.* 2011 Jul 1;12(7):735-42.

172. \*Benton MA, \*Rager JE, \*\*Smeester L, ++**Fry RC**. Comparative genomic analyses identify common molecular pathways modulated upon exposure to low doses of arsenic and cadmium. *BMC Genomics*. 2011 Apr 1;12:173. PMID:21457566; PMCID:PMC3082247
173. \*\*Smeester L, \*Rager J, Zhang L, Guan X, \*\*Bailey K, \*Smith N, Garcia-Vargas G, Del Razo L, Drobna Z, Kelkar H, Schroth G, Styblo M, ++**Fry RC**. Altered DNA Methylation Patterns in Individuals with Arsenicosis. *Chemical Research in Toxicology*. 2011. Feb 4 e pub. Feb 18; 24 (2): 165-167. PMCID: PMC3042796
174. \*Rager JE, \*\*Smeester L, Jaspers I, Sexton KG, ++**Fry RC**. Epigenetic Changes Induced by Air Toxics: Formaldehyde Exposure Alters miRNA Expression Profiles in Human Lung Cells. *Environ Health Perspect*. 2010. Dec 9 e pub. April 119 (4): 494-500. PMID:21147603; PMCID:PMC3080931
175. \*Liu Q, Zhang H, \*\*Smeester L, Zou F, Kesic M, Jaspers I, Pi J, ++**Fry RC**. The NRF2-mediated oxidative stress response pathway is associated with tumor cell resistance to arsenic trioxide across the NCI-60 panel. *BMC Med Genomics*. 2010. Aug 13;3:37. PMID:20707922; PMCID:PMC2939609
176. Fox JG, Feng Y, Theve EJ, Raczynski AR, Fiala JL, Doernte AL, Williams M, McFaline JL, Essigmann JM, Schauer DB, Tannenbaum SR, Dedon PC, Weinman SA, Lemon SM, **Fry RC**, Rogers AB. Gut microbes define liver cancer risk in mice exposed to chemical and viral transgenic hepatocarcinogens. *Gut*. 2010. Jan;59(1):88-97.
177. Jardim MJ, **Fry RC**, Jaspers I, Dailey L, Diaz-Sanchez D. Disruption of MicroRNA Expression in Human Airway Cells by Diesel Exhaust Particles is Linked to Tumorigenesis-Associated Pathways. *Environ Health Perspect*. 2009. June 18 e pub. Nov; 117 (11): 1745-51.
178. Erlich RL, **Fry RC**, Begley TJ, Dae DL, Lahue RS, Samson LD. Anc1, a protein associated with multiple transcription complexes, is involved in postreplication repair pathway in *S. cerevisiae*. *PLoS ONE*. 2008. 3(11):e3717.
179. **Fry RC**, Svensson JP, Valiathan C, Wang E, Hogan BJ, Bhattacharya S, Bugni JM, Whittaker CA and Samson LD. Genomic Predictors of Inter-Individual Differences in Response to DNA Damaging Agents. *Genes and Development*, Oct 2008. 22: 2621 - 2626.
180. Borenshtein D, **Fry RC**, Groff EB, Nambiar PR, Carey VJ, Fox JG, Schauer DB. Diarrhea as a cause of mortality in a mouse model of infectious colitis. *Genome Biol*. 2008. Aug 4; 9(8):122.
181. Liu S, Bhattacharya S, Han A, Suragani RN, Zhao W, **Fry RC**, Chen JJ. Haem-regulated eIF2alpha kinase is necessary for adaptive gene expression in erythroid precursors under the stress of iron deficiency. *Br J Haematol*. 2008. Volume 143, Issue 1, pages 129–137.
182. García A, Ihrig MM, **Fry RC**, Feng Y, Xu S, Boutin SR, Rogers AB, Muthupalani S, Samson LD, Fox JG. Genetic susceptibility to chronic hepatitis is codominantly inherited in *Helicobacter hepaticus*-infected AB6F1 and B6AF1 hybrid male mice and progression to hepatocellular carcinoma is linked to hepatic expression of lipogenic genes and immune associated networks. *Infect Immun*. 2008. Feb 19 e pub. May; 76 (5):1866-76.
183. Rogers AB, Theve EJ, Feng Y, **Fry RC**, Taghizadeh K, Clapp KM, Boussahmain C, Cormier KS, Fox JG. Hepatocellular carcinoma associated with liver-gender disruption in male mice. *Cancer Res*. 2007. Dec 15; 67(24):11536-46.
184. **Fry RC**, Navasumrit P, Valiathan C, Svensson JP, Hogan, BJ, Luo M, Bhattacharya S, Kandjanapa K, Soontararuks S, Nookabkaew S, Mahidol C, Ruchirawat M and Samson LD. Activation of Inflammation/NF-κB Signaling in Infants Born to Arsenic Exposed Mothers. *PLOS Genetics*. 2007. 3(11): e207.
185. Rusyn I, **Fry RC**, Begley TJ, Klapacz J, Svensson JP, et al. Transcriptional Networks in *S. cerevisiae* Linked to an Accumulation of Base Excision Repair Intermediates. *PLoS ONE*. 2007. 2(11): e1252.
186. Beyer RP, **Fry RC**, Lasarev MR, McConnachie LA, Meira LB, Palmer VS, Powell CL, Ross PK, Bammler TK, Bradford BU, Cranson AB, Cunningham ML, Fannin RD, Higgins GM, Hurban P, Kayton RJ, Kerr KF, Kosyk O, Lobenhofer EK, Sieber SO, Vliet PA, Weis BK, Wolfinger R, Woods CG, Freedman JH, Linney E, Kaufmann WK, Kavanagh TJ, Paules RS, Rusyn I, Samson LD, Spencer PS, Suk W, Tennant RJ, Zarbl H; Members of the Toxicogenomics Research Consortium. Multicenter study of acetaminophen hepatotoxicity reveals the importance of biological endpoints in genomic analyses. *Toxicol Sci*. 2007. Sep; 99(1):326-37.

187. Hwa AJ, **Fry RC**, Sivaraman A, So PT, Samson LD, Stolz DB, Griffith LG. Rat liver sinusoidal endothelial cells survive without exogenous VEGF in 3D perfused co-cultures with hepatocytes. *FASEB J.* 2007. Apr 10. 21:2564-2579.
188. **Fry RC**, DeMott MS, Cosgrove JP, Begley TJ, Samson LD, Dedon PC. The DNA-damage signature in *Saccharomyces cerevisiae* is associated with single-strand breaks in DNA. *BMC Genomics.* 2006. 7:313.
189. Benn J, Hu J., Hogan BJ, **Fry RC**, Samson LD, Thorsen T. Comparative modeling and analysis of microfluidic and conventional DNA microarrays. *Analytical Biochemistry.* 2006. 15; 348(2):284-93.
190. Sivaraman A, Leach JK, Townsend S, Iida T, Hogan BJ, Stolz DB, **Fry RC**, Samson LD, Tannenbaum SR, Griffith LG. A Microscale In Vitro Physiological Model of the Liver: Predictive Screens for Drug Metabolism and Enzyme Induction. *Present Drug Metabolism.* 2005. Volume 6; 569-591.
191. **Fry RC**, Begley T, Samson LD. Genome-Wide Responses to DNA-damaging agents. *Annual Reviews of Microbiology.* 2005. 59:357-77.
192. **Fry RC** and Members of the Toxicogenomics Research Consortium (listed alphabetically). Standardizing Global Gene Expression Analysis Between Laboratories and Across Platforms. *Nature Methods.* 2005. May;2(5):351-6. Boutin SR, Rogers AB, Shen Z, **Fry RC**, Love JA, Nambiar PR, Suerbaum S, Fox JG. Hepatic temporal gene expression profiling in *Helicobacter hepaticus*-infected A/JCr mice. *Toxicol Pathol.* 2004. Nov-Dec;32(6):678-93.
193. Qin LX, Kerr KF. Contributing Members of the Toxicogenomics Research Consortium (**Fry RC** and Samson LD). Empirical evaluation of data transformations and ranking statistics for microarray analysis. *Nucleic Acids Res.* 2004. 32 (18): 5471-5479.
194. **Fry RC** and Samson LD. Methods of Microarray Data Analysis II. *DNA Repair.* 2003. 21; 2 (11):1289-91.
195. **Fry RC**, Sambandan TG, Rha, CK. DNA damage and stress transcripts in *Saccharomyces cerevisiae* mutant sgs1. *Mechanisms of Aging and Development.* 2003. 124: 839-846.
196. **Fry RC**, Habashi J, Okamoto H, and Deng XW. Characterization of a strong dominant phyA mutation unique to phytochrome A signal propagation. *Plant Physiology.* 2002. 130: 457-465.
197. **Fry RC**, Champion H, Lawrence T, Murphy W, Coy D, and Kadowitz P. Proadrenomedullin NH2-terminal peptide (PAMP) 12-20 has vasodepressor activity in the rat and cat. *Life Sciences Journal.* 1997. 60 (10): 161-167.
198. Champion H, **Fry RC**, Murphy W, Coy D, and Kadowitz P. Catecholamine release mediates pressor effects of adrenomedullin (15-22) in the rat. *Hypertension.* 1996. 28 (6): 1041-1046.
199. **Fry RC**, Kolmes-Fergusson L, Kolmes S, Villani M. Radiographic study of the response of Japanese beetle larvae (Coleoptera: Scarabaeidae) to soil-incorporated mycelial particles of *Metarhizium anisopliae* (Deuteromycetes). *Journal of New York Entomological Society.* 1997. 105 (1-2): 113-120.

Books and Chapters: (16 total; 2 edited books, 14 chapter submissions). Note: \* indicates student mentees, \*\* indicates post-doc/senior researcher mentees, ++ indicates senior author):

#### Books (2):

1. ++**Fry RC**. *Systems Biology in Toxicology and Environmental Health*, 1st Edition. Edited by Fry, RC. 2015. London and Waltham: Elsevier.
2. ++**Fry RC**. *Environmental Epigenetics in Toxicology and Public Health*, Translational Epigenetics Series. Edited by Fry, RC. 2020. London and Cambridge: Elsevier.

#### Chapter contributions (14):

1. \*Eaves, LA, \*Gardner, AJ, and ++**Fry RC**. 'Tools for the assessment of epigenetic regulation' in *Environmental Epigenetics in Toxicology and Public Health*, Translational Epigenetics Series. Edited by Fry, RC. 2020. London and Cambridge: Elsevier. pp. 33-60.

2. **\*\*Bulka, CM, Manuck, TA, and ++Fry RC.** ‘Pregnancy and birth outcomes: A role for environment-epigenome interactions’ in *Environmental Epigenetics in Toxicology and Public Health, Translational Epigenetics Series*. Edited by Fry, RC. 2020. London and Cambridge: Elsevier. pp. 109-118.
3. **\*Pinder, Margaret, Fry RC and Alexis, NE.** ‘Environmental contaminants and the immune system: A systems perspective’ in *Environmental Epigenetics in Toxicology and Public Health, Translational Epigenetics Series*. Edited by Fry, RC. 2020. London and Cambridge: Elsevier. pp. 217-235.
4. **\*Palakodety, Niharika, \*Gardner, AJ and Fry RC++.** ‘Intergenerational and transgenerational effects of environmental factors and a role for the epigenome’ in *Environmental Epigenetics in Toxicology and Public Health, Translational Epigenetics Series*. Edited by Fry, RC. 2020. London and Cambridge: Elsevier. pp. 267-290.
5. **\*\*Venkatratnam, Abhishek and ++Fry RC.** ‘The role of nutrition and epigenetics in environmental Toxicology’ in *Environmental Epigenetics in Toxicology and Public Health, Translational Epigenetics Series*. Edited by Fry, RC. 2020. London and Cambridge: Elsevier. pp. 303-322.
6. **\*\*Smeester, L., \*Yosim, A.E. and ++Fry RC.** ‘Chemical hazards’, in Bartram, J., with Baum, R., Coclanis, P.A., Gute, D. M., Kay, D., McFayden, S., Pond, K., Robertson, W. and Rouse, M.J. (eds). 2015. *Routledge Handbook of Water and Health*. London and New York: Routledge. pp. 107-121.
7. **\*Yosim, A., and ++Fry RC.** ‘Systems Biology in Toxicology and Environmental Health’, in *Systems Biology in Toxicology and Environmental Health, 1st Edition*. Edited by Fry, RC. 2015. London and Waltham: Elsevier. pp. 1-10.
8. **\*\*Ray, P. and ++Fry RC.** ‘The Cell: The Fundamental Unit in Systems Biology’ in *Systems Biology in Toxicology and Environmental Health, 1st Edition*. Edited by Fry, RC. 2015. London and Waltham: Elsevier. pp. 11-42.
9. **\*Tilley, SK and ++Fry RC.** ‘Priority Environmental Contaminants: Understanding Their Sources of Exposure, Biological Mechanisms and Impacts on health’ in *Systems Biology in Toxicology and Environmental Health, 1st Edition*. Edited by Fry, RC. 2015. London and Waltham: Elsevier. pp. 117-169.
10. **\*\*Sollome, J. and ++Fry RC.** ‘Environmental Contaminants and the Immune System: A Systems Perspective’ in *Systems Biology in Toxicology and Environmental Health, 1st Edition*. Edited by Fry, RC. 2015. London and Waltham: Elsevier. pp. 171-186.
11. **\*Tilley, SK and ++Fry RC.** ‘Hormone Response Pathways as Responders to Environmental Contaminants and Their Roles in Disease’ in *Systems Biology in Toxicology and Environmental Health, 1st Edition*. Edited by Fry, RC. 2015. London and Waltham: Elsevier. pp. 225-238.
12. **\*Rager J and ++Fry RC.** *Network Biology: Theories, Methods and Applications*. Edited by WenJun Zhang. Published 2013 by Nova Publishers. pp. 81-132.
13. **\*\*Bailey K and ++Fry RC.** *Arsenic and the Epigenome. Toxicology and Epigenetics, First Edition*. Edited by Saura C. Sahu. John Wiley & Sons, Ltd. Published 2012 by John Wiley & Sons, Ltd. pp. 149-183.
14. **Fry RC and Samson LD.** 2003. *Methods of Microarray Data Analysis II. DNA Repair*, 21; 2 (11):1289-91.

Oral presentations/abstracts (172 Total Invited Speaker; 7 Keynote, 95 invited presentations, 70 poster presentations):

Keynote Speaker (7 total)

1. *Environmental drivers of pregnancy and child health outcomes: ties to the epigenome. Department of comparative Biomedical Sciences, Louisiana State University. Web-based presentation. February, 2021.*
2. *The placenta: A driver of early and later life disease. Developmental Programming and Disease: Environmental Risk Factors, Mechanics and Strategies Workshop, Rochester, NY. September 2018*
3. *Mapping metals contamination in NC. Water and Health Conference, Chapel Hill, NC. October 2016.*
4. *Toxicant-induced epigenetic alterations in children; causes and effects. Oklahoma State University Center for Health Sciences, Tulsa, OK. February 2016.*
5. *Using genomics to inform the risk assessment process. GEMS, NIEHS, Durham, NC. October 2014*
6. *Identifying sites of DNA methylation that are functionally predictive. Duke Epigenetic Symposium, Durham, NC. October 2014.*



7. *Systems Biology in Environmental Health*. Third International Toxicogenomics Integrated with Environmental Sciences (TIES) conference, NC. September 2011.

Invited Speaker (95 total, \* denotes international venue)

1. *Introduction to one approach to integrate PFAS research findings into life science instruction*; Part of the Interactive Design to engage all learners: Investigating the human health effects of PFAS exposure Part I Design Institute, March 2022.
2. *The placental origins of health and disease: A recorder and transducer of environmental toxics*, Department of Physiology & Pharmacology, West Virginia University, March 2022.
3. *The placental origins of health and disease: A recorder and transducer of Environmental Toxics*, Oklahoma State University Center for Health Sciences, ITP, Integrated Toxicology Program (ITP), March 2022.
4. *Cadmium: An epigenetic placental toxicant tied to preeclampsia, within the symposium of cadmium and the developmental origins of disease: the implications of early life exposures on health later in life*; Society of Toxicology, March 2022.
5. *Poor water quality and its impacts on pregnant women and children*. Federation of American Societies for Experimental Biology (FASEB); The Nexus of Soil and Water Quality: Impacts on the Health of Humans, Animals and Ecosystems. February 2022.
6. *Are there toxic metals in your drinking water?* Silent Spring 2.0 Reproductive Environmental Health, environmental Disparities and the Imperative for Environmental Justice. Society for Maternal-fetal Medicine, 42<sup>nd</sup> Annual Pregnancy Meeting. January 2022.
7. *Environmental Diabetogens: The Case for arsenic*. North Carolina Diabetes Research Center. January 2022.
8. *Current Understanding of Mechanisms Underlying Arsenic-Induced Developmental Toxicity*. Society of Toxicology (SOT) and Food and Drug Administration (FDA) Colloquia on Emerging Toxicological Science Challenges in Food and Ingredient Safety, Arsenic and Children's Health. December 2021.
9. *My career in academia: How did I get here and what did I learn?* US Developmental Origins of Health and Disease Society meeting. November 2021.
10. *The Placental; A recorder and transducer of environmental toxics*. Department of Environmental and Public Health Sciences. University of Cincinnati College of Medicine, Cincinnati, Ohio. November 2021.
11. *PFAS and Placental Function. The Placenta: A recorder and transducer of environmental toxics. American Diabetes Association's Virtual 81st Scientific Sessions; PFAS exposure in Pregnancy: Disrupting Endocrine Milieu of Pregnancy—Mechanisms of Per- and Polyfluoroalkyl Substances (PFAS) in Maternal-Fetal Health*. June 2021
12. *The placenta: The placenta: sensor, recorder and transducer of toxics in the environment. Tox-I ACS meeting. Web-based presentation*. March, 2021.
13. *The placenta: The placenta: sensor, recorder and transducer of toxics in the environment. Society of Toxicology Award Presentation for Translational Impact. Web-based presentation*. March, 2021.
14. *Early Life Origins of Health Among Individuals Born Extremely Preterm, Environmental Influences of Child Health Outcomes (ECHO) Discovery. Web-based presentation*. February, 2021.
15. *Environmental drivers of pregnancy and child health outcomes. Department of Obstetrics and Gynecology Department, Baylor University. Web-based presentation*. January, 2021.
16. *UNC Superfund Research Program. Superfund Research Program Progress in Research Webinar Part 1: Metals, Web-based presentation*. October, 2020.
17. *Environmental Drivers of Cancer, Lineberger Cancer Center*. October, 2020.
18. *Identifying Epigenetic Biomarkers of Arsenic-Induced Fetal Birthweight. Predicting the Human Health Effects from Environmental Exposures: Applying Translatable and Accessible Biomarkers of Effect. National Academies of Science. Web-based presentation*. August, 2020
19. *Arsenic and its latent health effects. SRP Risk eLearning Webinar. Web-based presentation*. May, 2020.
20. *PFAS and the placenta, N.C. DEQ and DHHS Secretaries' Science Advisory Board (SSAB)*, Raleigh, NC. November 2019.
21. *PFAS and the placenta, PFAS Testing Network*, Raleigh, NC. October 2019.

22. *The Placenta: a Driver of Early and Later Life Disease*, University of Southern California. October 2019 Los Angeles, CA.
23. *CffRNA: a biomarker of toxic metals exposure*, 9<sup>th</sup> Rodent Pathology Symposium. October 2019 Raleigh, NC.
24. *The Placental Epigenome as a Driver of Human Health and Disease*, Teratology Society Meeting. June 2019 San Diego, CA.
25. *The Placental Epigenome as a Driver of Human Health and Disease*, University of Connecticut, School of Pharmacy, Department of Pharmaceutical Sciences. June 2019 Storrs, Connecticut.
26. *\*The placental epigenome as a driver of the developmental origins of health and disease*. Society for Reproductive Investigation. March 2019 Paris, France.
27. *Genomic and Epigenomic Perturbations by Fetal Exposure to Endocrine Disruptors*. ENDO. January 2019. Chicago, Ill.
28. *Barriers and Challenges to Report-Back from the Toxicologist Perspective*. December 2018. Partnerships for Environmental Public Health Annual Meeting, National Institute of Environmental Health Sciences, Research Triangle Park, NC
29. *Global "OMICS" Approaches Targeting Adverse Pregnancy and Neonatal Outcomes Utilizing Existing Cohorts*, Grantee Meeting, November 2018. Washington, DC
30. *The Placental Epigenome as a Driver of Later Life Disease*, October 2018. Tenth Conference on Metal Toxicity & Carcinogenesis, University of New Mexico, Albuquerque, NM
31. *A Healthy Start for Every Child: How the Environment Influences Health and Development*, October 2018. U.S. Congress Briefing, Washington, DC
32. *Circulating Cell-Free RNA as Biomarkers of Exposure to Toxic Substances*, September 2018. National Institute of Environmental Health Sciences, Durham, NC
33. *\*Identifying epigenetic links for arsenic-associated bladder cancer: from human population data to The Cancer Genome Atlas (TCGA)*. June 2018. International Agency on Cancer Research. Lyon, France.
34. *The placental epigenome as a driver of the developmental origins of health and disease*. May 2018. Department of Environmental Health Sciences and Engineering. Oregon State University, Corvallis, OR.
35. *\*Links between Placental Bacteria, Epigenetic Variation, and Child Outcomes*. May 2018. Pediatric Academy Society Meeting. Toronto, Canada.
36. *Toxic metals exposure: understanding mechanism of action and risk assessment*. April 2018. Department of Environmental Health. Columbia University. New York, NY.
37. *The placental epigenome as a driver of the developmental origins of health and disease*. April 2018. Department of Environmental Health Sciences and Engineering. Johns Hopkins University. Baltimore, MD.
38. *Prenatal Arsenic Exposure and the Epigenome: Informing Disease Mechanisms and the Risk Assessment Process*. March 2018. Society of Toxicology (SOT) Annual Meeting. March 2018. San Antonio, TX.
39. *Genomic and Epigenomic Perturbations by Fetal Exposure to Endocrine Disruptors*. March 2018. ENDO2018. Chicago, Ill.
40. *The placental epigenome as a driver of the developmental origins of health and disease*. February 2018. Department of Environmental Sciences and Epidemiology. University of Buffalo. Buffalo, NY
41. *Genome editing research for translational toxicology solutions*. January 2018. The promise of genome editing tools to advance environmental health research. National Academies of Sciences, Engineering and Medicine. Washington, D.C.
42. *The placental epigenome as a driver of the developmental origins of health and disease*. September 2017. Duke University Integrated Toxicology and Environmental Health Program. Durham, NC.
43. *Identifying an epigenetic basis for arsenic-associated bladder cancer in a population in Chihuahua, Mexico*. September 2017. AACR Conference on Health Disparities. Atlanta, GA.
44. *Building AOPs for Arsenic-Induced Developmental Outcomes for Improved Risk Assessment*. July 2017. OpenTox USA. Durham, NC.
45. *Incorporating epigenetic data into the risk assessment Process: A case study on inorganic Arsenic*. May 2017. EPA, Raleigh, NC.
46. *Translational approaches to understand the role of the epigenome in metals-induced toxicity*. May 2017. Chromatin Meeting, UNC-Chapel Hill. Chapel Hill, NC.
47. *Translational approaches to understand the role of the epigenome in metals-induced toxicity*. May 2017. Department of EOHS, University of Pittsburgh. Pittsburgh, PA.

48. *Protecting Women and Children from Toxic Metals Exposure in the Home*. Women's health Awareness Day. April 2017. Raleigh, NC.
49. *Building AOPs for arsenic-induced developmental outcomes for improved risk assessment*. Society of Toxicology (SOT) Annual Meeting. March 2017. Baltimore, MD.
50. *Systems Toxicology Approaches to Understand the Harms of Toxic Metals in Vulnerable Populations*. Society of Toxicology (SOT) Annual Meeting. March 2017. Baltimore, MD.
51. *Toxic metals and children's environmental health*. The Children's Research Institute Retreat. UNC-Chapel Hill. Chapel Hill, NC. November 2016.
52. *\*Prenatal exposure to arsenic and miRNA expression as a modulator of immune response in children*. 8<sup>th</sup> Princess Chulabhorn International Science Congress. Bangkok, Thailand. November 2016.
53. *Metals induced toxicity and the epigenome*. Toxicoepigonomics: The Interface of Epigenetics and Risk Assessment. Tysons Corner, VA. November 2016.
54. *What's in your water?* Tarheel ToxTalks. Chapel Hill, NC. October 2016.
55. *Health effects of inorganic arsenic*. National Institute of Environmental Health Sciences (NIEHS) Superfund Research Program (SRP) and EPA's Contaminated Site Clean-Up Information (CLU-IN), Risk e-Learning webinars, SRP Water Innovation – An Integrated Approach to Sustainable Solutions: Session IV - Communicating Risk and Engaging Communities: Arsenic and Well Testing, Clu in Webinar, SRP. July 2016.
56. *Novel Approaches for the Assessment of Environmentally-Induced Birth Defects*. Teratology Society Annual Meeting. San Antonio, TX. July 2016
57. *\*Epigenetic regulation of toxic metal-induced disease in children*. Epigenetics and Environmental Origins of Cancer Meeting. IARC. Lyon, France. June 2016.
58. *Early Life Exposures, Later Life Disease: The Role of the Genome and the Epigenome*. Predictive Toxicology and Disease Group. NIEHS. Durham, NC. May 2016.
59. *Protecting children around the globe from the harms of toxic metals*. ONES Awardee Symposium. NIEHS. Durham, NC. May 2016.
60. *Building Academic-Government-Community Partnerships for Improved Public Health*. GEMS. US-EPA, Raleigh, NC. April 2016.
61. *Temporal issues related to prenatal and early life exposure to inorganic arsenic*. USEPA Workshop on Temporal Exposure Issues for Environmental Pollutants. Research Triangle Park, NC. January 2016.
62. *Temporal issues related to prenatal and early life exposure to inorganic arsenic*. USEPA Workshop on Temporal Exposure Issues for environmental Pollutants. Research Triangle Park, NC. January 2016.
63. *Maternal genotype for arsenic 3 methyltransferase AS3MT is associated with arsenic metabolism and newborn birth outcomes with interactions between fetal sex*. Annual Superfund Research Program Meeting. San Juan, Puerto Rico. November 2015.
64. *Arsenic in private wells in North Carolina: potential public health implications*. Environmental Health Summit. Research Triangle Park, NC. October 2015
65. *Critical scientific issues in assessing health risk from oral exposure to inorganic arsenic*. Environmental Mutagenesis and Genomics Society Meeting. New Orleans, LA. September 2015
66. *Epigenetic impacts of prenatal exposure to inorganic arsenic*. Environmental Mutagenesis and Genomics Society Meeting. New Orleans, LA. September 2015.
67. *Epigenetic effects of arsenic and other toxic metals*. EPA Workshop on Epigenetics and Cumulative Risk Assessment. Washington DC. September 2015
68. *Systems Toxicology of Environmental Metals: Identifying Key Molecular Pathways Linking Environmental Exposure with Disease Prenatal metal exposure and the epigenome*. Pittcon. New Orleans, LA. March 2015.
69. *Prenatal metal exposure and the epigenome*. SRP annual Meeting. San Jose, CA November 2014.
70. *Prenatal Arsenic Exposure, Shifts in Cell Signaling Pathways and Newborn Health Effects*. ONES Awardee Symposium. NIEHS, Durham, NC. July 2014.
71. *The Glucocorticoid Receptor: A Role in Mediating Arsenic Toxicity*. Receptor Mechanisms Discussion Group. NIEHS, Durham, NC. April 2014.

72. *Prenatal arsenic exposure and shifts in the fetal proteome*. Toxicology and Risk Assessment Guidance: From principles to practice in the age of omics, osomes and new opportunities. West Chester, OH. April 2014.
73. *Systems biology and toxic metals: Linking biological pathways with health effects*. Vanderbilt University. Nashville, TN. January 2014.
74. *Prenatal arsenic exposure and the proteome*. 15th International Pacific Basin Consortium for Environment and Health. Honolulu, Hawaii. October 2013.
75. *Arsenic and the DNA methylome, linked by proteomic shifts*. Society of Toxicology, 52nd Annual Meeting and ToxExpo. San Antonio, TX. March 2013.
76. *Arsenic and the DNA methylome, linked by proteomic shifts*. Dartmouth College. Hanover, NH. March 2013.
77. *\*Arsenic and the DNA methylome, linked by methylation*. 7<sup>th</sup> Princess Chulabhorn International Science Congress. Bangkok, Thailand. November 2012.
78. *Arsenic and the DNA methylome, links to exposure and disease*. Arsenicals and the Epigenome. University of Arizona. Tuscon, AZ. September 2012.
79. *Prenatal Cadmium Exposure and Changes to the DNA methylome*. ATSDR (Connecting Research and Practice). CDC. Atlanta, GA. August 2012.
80. *Arsenic and the Epigenome*. NC-State University. Raleigh, NC. April 2012.
81. *Early Life Exposures-long term health consequences*. Superfund Webinar. NC. March 2012.
82. *Is your drinking water safe?* NC State Health Directors Meeting. Raleigh, NC. March 2012.
83. *Arsenic and the Epigenome*. Brown University. Providence, RI. March 2012.
84. *Arsenic and the Epigenome*. The North Carolina Society of Toxicology Fall Meeting. Durham, NC. September 2011.
85. *Altered DNA Methylation Patterns in Individuals with Arsenicosis*. The Society of Toxicology. Washington DC. March 2010.
86. *Toxicogenomics Approaches to Understand the Impact of Prenatal Arsenic Exposure*. International Society of Exposure Science (ISES). MN. November 2009.
87. *Identification of Genetic and Epigenetic Biomarkers of Metal Exposure and Metal-Induced Disease Using Environmental Toxicogenomics and Systems Biology*. Keystone Science Lecture: Division of Extramural Research and Training. NIEHS. Durham, NC. October 2009.
88. *\*Activation of Inflammation/NF- $\kappa$ B Signaling in Infants Born to Arsenic Exposed Mothers*. International Meeting on Environmental Mutagens (ICEM). Florence, Italy. August 2009.
89. *Activation of Inflammation/NF- $\kappa$ B Signaling in Infants Born to Arsenic Exposed Mothers*. ICCA-LRI workshop Connecting Innovations in Biological, Exposure and Risk Sciences: Better Information for Better Decisions. Charleston, SC. June 2009.
90. *\*Genomic Predictors of Inter-Individual Differences in Response to DNA Damaging Agents*. 3rd US-EU Systems Biology Workshop, Systems level understanding of DNA damage responses. The Netherlands. April 2009
91. *Genomics Applications: Detecting human exposures and predicting inter-individual susceptibilities*. Exposure Science Community of Practice. EPA. Durham, NC. March 2009.
92. *Genomics Applications: Detecting human exposures and predicting inter-individual susceptibilities*. EPA. Durham, NC. March 2009.
93. *Activation of Inflammation/NF- $\kappa$ B Signaling in Infants Born to Arsenic Exposed Mothers*. Annual Environmental Health Sciences Symposium. MDIBL. Salisbury Cove, ME. July 2008.
94. *Activation of Inflammation/NF- $\kappa$ B Signaling in Infants Born to Arsenic Exposed Mothers*. Environmental Mutagen Society Meeting. Atlanta, GA. 2007.
95. *Standardization across microarray platforms*. Toxicogenomics Gordon Conference. Bates College. Lewiston, ME. 2007.

Poster Presentations (70 total)

1. Marable, CA, O'Shea TM, Roell, K, ++Fry RC. Origins of Cerebral White Matter Damage: Exploring the Placental Transcriptome Brain Axis. US Developmental Origins of Health and Disease Society Conference 2021. Chapel Hill, NC. November 2021.
2. Huff, KK, Roell, K, Clark, J, Bulka, CM, O'Shea, TM, and ++Fry RC. Evaluating the Associations Between Maternal Environment During Pregnancy and Placental Epigenetic Age Acceleration & Clock CpG Methylation. US Developmental Origins of Health and Disease (DOHAD) Annual Meeting. November 2021.
3. Eaves LA, Bulka CM, Rager JE, Parsons PJ, Galusha AL, O'Shea TM, ++Fry RC. Prenatal exposure to toxic and essential metal/metalloid mixtures is associated with placental genomic signatures. Developmental Origins of Health and Disease Annual Meeting. November 2021.
4. Eaves, LA, Keil, AP, Tomlinson, M, and ++Fry RC. Multi-metal Analysis of Private Well Water in North Carolina: Implications for Exposure Assessment and Public Health. Society of Toxicology (SOT) Annual Meeting. March 2021.
5. Meakin, CJ, Szilagyi, JT and ++Fry RC. University. Arsenic-Induced Alterations in Glucocorticoid Receptor Regulated Gene Expression in Full-Term Placental Explants. Society of Toxicology (SOT) Annual Meeting. March 2021.
6. Clark, J, Bommarito, P, Laine, J, Stýblo, M, García-Vargas, Gamble, and ++Fry RC. Micronutrients Promoting Inorganic Arsenic (iAs) Methylation Efficiency Modify the Negative Association between iAs Exposure and Lower Birth Weight. Society of Toxicology (SOT) Annual Meeting. March 2021.
7. A. Venkatratnam, A, Fry RC, and M. Styblo, M. Sex-Dependent Effects of Preconception Exposure to Arsenite on Gene Transcription in Parental Germ Cells and on Transcriptomic Profiles and Diabetic Phenotype of Offspring. Society of Toxicology (SOT) Annual Meeting. March 2021.
8. Register, H., O'Shea, T.M. and ++Fry RC. Infant growth after discharge from neonatal intensive care: associations with health and developmental outcomes in adolescents born extremely preterm. Pediatric Academy Society. 2020.
9. \*Huff, K, \*Clark, J., \*\*Bulka, C. and ++Fry RC. The Placental Epigenetic Clock as a Mediator of the Effects of Perinatal Exposures on Neurological Outcomes. NC Society of Toxicology (NC-SOT) Annual Meeting. September 2020 (zoom).
10. \*Tilley, S.K., Joseph, R.M., Kuban K.C.K., Dammann, O.U., O'Shea, T.M. and ++Fry RC. Genomic Biomarkers of Prenatal Intrauterine Inflammation in Umbilical Cord Tissue Predict Later Life Neurological Outcomes. Society of Toxicology (SOT) Annual Meeting. March 2017. Baltimore, MD.
11. \*Clark, J., \*Martin, E., \*Smeester, L., Rubio-Andrade, M., Styblo, M., García-Vargas, G. ++Fry RC. Prenatal Arsenic Exposure and Sexual Epigenetic Dimorphism: Sexual Dimorphism of 5-methylcytosine Alterations in Newborn Cord Blood from the BEAR Cohort. Society of Toxicology (SOT) Annual Meeting. March 2017. Baltimore, MD.
12. \*Martin, E., \*\*Smeester, L. M. Rubio-Andrade, M. G. García-Vargas, G. M. Styblo, M. ++Fry RC. Proteomic Analysis of Maternal Circulating Blood Reveals That Mothers Pregnant with Males Have More Arsenic-Associated Protein Alterations Than Mothers Pregnant with Females. Society of Toxicology (SOT) Annual Meeting. March 2017. Baltimore, MD.
13. \*Gallo, G., \*Martin, E., Drobná, Z., Douillet, C., Kim, K., Rubio-Andrade, M., García-Vargas, G., Styblo, M., Zou, F., Fry RC Maternal Genotype for Arsenic (+3 Oxidation State) Methyltransferase Is Associated with Cord Serum Levels of Methylated Arsenicals. Society of Toxicology (SOT) Annual Meeting. March 2017. Baltimore, MD.
14. \*Bommarito, P.A., \*Martin, E., \*Smeester, L., Baker, E., Karagas, M.R. and ++Fry RC. Fetal-Sex Dependent Expression of Immune Genes in the Circulating Lymphocytes of Arsenic-Exposed Pregnant Women in New Hampshire. NIEHS SRP Annual Meeting/EHS Fest. December 2016. Durham, NC.
15. \*Laine J.E., Ilievski V., García-Vargas G., Gamble M.V. and ++Fry RC. Maternal nutritional biomarkers involved in one carbon metabolism and arsenic exposure during the prenatal period. NIEHS SRP Annual Meeting/EHS Fest. December 2016. Durham, NC.
16. \*\*Brooks, S., \*Martin, E., \*Smeester, L., Grace, M.R., Boggess, K. and ++Fry RC. miRNAs as Common Regulators of the Transforming Growth Factor (TGF)- $\beta$  Pathway in the Preeclamptic Placenta and Cadmium-treated Trophoblasts: Links between the Environment, the Epigenome and Preeclampsia. NIEHS SRP Annual Meeting/EHS Fest. December 2016. Durham, NC.
17. \*Martin, E., \*Smeester, L., \*Bommarito, P.A., Grace, M.R., Boggess, K., Kuban, K., O'Shea, T.M. Fry RC Sexual epigenetic dimorphism in the human placenta: Implications for susceptibility to stressors during the prenatal period. Toxicoepigenetics, November 2016, Tysons Corner, VA.
18. \*Adebambo O.A., Shea D. and ++Fry RC. Synergistic Induction of Metal-Responsive and Oxidative

Stress Gene Biomarkers in Placental JEG-3 Cells by Environmental Arsenic & Cadmium Mixtures. SETAC Annual Meeting. 2016. Orlando, FL.

19. \*Adebambo O.A., Ray P.D., Shea D. and **++Fry RC.** Induction of Metal-Responsive and Oxidative Stress Gene Biomarkers in Placental JEG-3 Cells by Arsenic & Cadmium Mixtures from Polluted Waste Sites. SOT Annual Meeting 2016, New Orleans, LA
20. \*Laine JE, W Bodnar, P Cable, K Boggess, S. Offenbacher, **++Fry RC.** Assessment of Toxic and Essential Metals in the Placenta and Risk of Preeclampsia in a Pregnancy Cohort. Society of Toxicology. March 2016. New Orleans, LA.
21. \*\*Brooks SA, \*Martin E, \*\*Smeester L, Grace MR, Boggess K, **++Fry RC.** Cadmium Exposure influences angiogenic pathways in preeclamptic placenta and placental cells Via epigenetic mechanisms. Society of Toxicology. March 2016. New Orleans, LA.
22. \*Martin E,\*\*Smeester L, \*Bommarito PA, Grace M.R., Boggess K, Kuban, K, O'Shea T.M., **++Fry RC.** Sexual epigenetic dimorphism in the human placenta: Implications for susceptibility to stressors during the prenatal period. Toxicopigenomics: The Interface of Epigenetics and Risk Assessment. November 2016. Tysons Corner, VA.
23. \*Adebambo OA, \*\*Ray PD, Shea D and **++Fry RC.** Synergistic induction of metal-responsive and oxidative stress gene biomarkers in placental JEG-3 cells by arsenic and cadmium mixtures from hazardous waste sites. Annual Superfund Meeting. November 2015. San Juan, Puerto Rico.
24. \*Laine JE, Bodnar W, Cable P, Boggess K, Offenbacher S, **++Fry RC.** Assessment of Toxic and Essential Metals in the Placenta and Risk of Preeclampsia in a Pregnancy Cohort. Annual Superfund Meeting. November 2015. San Juan, Puerto Rico.
25. \*Laine JE, Bodnar W, Cable P, Boggess K, Offenbacher S, **++Fry RC.** Assessment of Toxic and Essential Metals in the Placenta and Relationship to Preeclampsia in a Pregnancy Cohort. Society for Epidemiological Research. June 2015. Denver, CO.
26. \*E Martin, \*Rager J, Bailey K, González-Horta C, Sánchez-Ramírez B, Ballinas-Casarrubias L, Ishida M, Gutiérrez-Torres D, Cerón RH, Morales DV, Terrazas FB, Del Razo LM, Vargas GG, Saunders RJ, Jia W, Buse J, Loomis D, Drobna Z, Styblo M, **++Fry RC.** Identification of a metabolomics fingerprint of arsenic-associated diabetes in a prospective cohort in Mexico. Annual Superfund Research Program. November 2015. San Juan, Puerto Rico.
27. \*Miller SK, \*Rager JE, Moeller BC, Kracko D, Doyle-Eisele M, Swenberg JA, **++Fry RC.** Formaldehyde-associated changes in gene and cytokine expression profiles within a nonhuman primate nose and circulating blood. Society of Toxicology. 54th Annual Meeting and ToxExpo. March 2015. San Diego, California.
28. \*\*Sollome, J, \*\*Ray, P,\* Laine, J, Grace, M \*Martin, E \*\*Smeester, S, Cable, P, Barrow, D, Bodnar, W, Boggess, K, **++Fry RC.** Cadmium-associated dysregulation of pro-inflammatory cytokines in the human placenta. Society of Toxicology. 54th Annual Meeting and ToxExpo. March 2015. San Diego California.
29. \*Rager JE, \*\*Bailey KA, \*Smeester L, \*Miller SK, Parker JS, \*Laine JE, Drobna Z, Currier J, Douillet C, Olshan AF, Rubio-Andrade M, Styblo M, García-Vargas G, **++Fry RC.** Prenatal arsenic exposure and the epigenome: altered microRNAs associated with innate and adaptive immune signaling in newborn cord blood. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.
30. \*Sanders AP, \*Miller SK, Nguyen V, Kotch JB, **++Fry RC.** Toxic Metal Levels in Children Residing in a Smelting Craft Village in Vietnam: A Pilot Biomonitoring Study. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.
31. \*Laine JE, \*\*Bailey, KA, Rubio-Andrade MR, Olshan A, \*\*Smeester L, Drobna Z, Styblo M, Herring, AH, Garcia-Vargas G, **++Fry RC.** Biomarkers of Exposure to Arsenic (BEAR) pregnancy cohort in Mexico: Arsenic methylation is linked to poorer birth outcomes. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.
32. \*Laine JE, Rubio-Andrade MR, Olshan A, Styblo M, Garcia-Vargas G, **++Fry RC.** Prenatal exposure to inorganic arsenic in Gómez Palacio, Mexico, links to contaminated drinking water. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.
33. \*Sanders AP, Desrosiers TA, Herring AH, Enright D, Olshan AF, Meyer R, **++Fry RC.** Association between copper, iron, and zinc levels in private wells and birth defects prevalence in North Carolina. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.

34. \*Rojas D, \*\*Bailey K, \*Sanders AP, \*\*Smeester L, \*\*Ahir B, \*Rager J, ++Fry RC. Cadmium and the epigenome: DNA methylation patterns as “environmental footprints” of transcription factor occupancy. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.
35. \*Rager JE, Moeller BC, Doyle-Eisele M, Swenberg JA, ++Fry RC. Formaldehyde-Induced Changes in MicroRNA Signaling. Society of Toxicology. 53rd Annual Meeting and ToxExpo. March 2014. Phoenix, Arizona.
36. \*Rager JE, Moeller BC, Doyle-Eisele M, Swenberg JA, ++Fry RC. Formaldehyde-Induced Changes in MicroRNA Signaling. NC SOT. February 2013. Research Triangle Park.
37. \*Sanders AP, \*Rojas D, \*\*Bailey KA, \*\*Ahir B, ++Fry RC. A systems biology approach to cadmium toxicity in human cardiomyocytes and choriocarcinoma JEG-3 placental cells. National Birth Defects Prevention Network Annual Meeting. February 2013. Atlanta, GA.
38. \*Sanders AP, Desrosiers TA, Herring AH, Enright D, Olshan AF, Meyer RE, ++Fry RC. Association between arsenic, cadmium, lead, and manganese levels in private wells and birth defects prevalence in North Carolina. Annual Superfund Center Meeting. October 2012. Raleigh, NC.
39. \*Laine J, \*Sanders A, Garrett M, Miranda M, Ashley-Koch A, ++Fry RC. Genes and the Environment: Genetic Variants Of Th1/Th2 Cytokines Associated With Cd-Induced Racial Differences In Birth Weight. Annual Superfund Center Meeting. October 2012. Raleigh, NC.
40. \*Gruber J, \*Patel R, \*Rager JE, \*Sanders AP, Edwards S, Gallagher J, ++Fry RC. Exposure to metals mixtures: Genomic alterations of infectious disease response pathways in children exposed to environmental metals. Environmental Mutagen Society. September 2012. Seattle, Washington.
41. \*Sanders AP, \*\*Smeester L, DeBussycher T, Wu MC, Wright FA, Zhou Y, \*Laine JE, \*Rager JE, Swamy GK, Ashley-Koch A, Miranda ML, ++Fry RC. Identifying Cadmium-Specific Patterns of DNA Methylation in Mother-Baby Pairs. Environmental Mutagen Society. September 2012. Seattle, Washington.
42. \*Sanders AP, \*Rager JE, Wu M, \*Laine JE, \*\*Smeester L, Kelkar H, Swamy GK, Ashley-Koch A, Miranda ML, ++Fry RC. Prenatal cadmium exposure and altered gene-specific DNA methylation in newborn cord blood. Fetal Programming and Environmental Exposures. June 2012. New York, NY.
43. \*Rager JE, Moeller BC, \*\*Smeester L, Sexton KG, Jaspers I, Swenberg JA, ++Fry RC. Formaldehyde Induces Significant Changes in MicroRNA Expression Profiles In Vitro and In Vivo. Visiting Pulmonary Scholar Symposium. May 2012. Chapel Hill, NC.
44. \*Rager JE, \*\*Smeester L, Sexton KG, Jaspers I, Swenberg JA, ++Fry RC. Epigenetic Effects of Formaldehyde Exposure. Society of Toxicology, 51st Annual Meeting and ToxExpo. May 2012. San Francisco, CA. \*student speaker
45. \*Sanders AP, Desrosiers TA, Herring AH, Olshan AF, Meyer R, ++Fry RC. Association between arsenic, cadmium, lead, and manganese in private wells and birth defects prevalence. Epidemiology and Evaluation Annual Poster Day. North Carolina Division of Public Health. April 2012. Raleigh, NC.
46. \*\*Bailey KA, \*\*Smeester L, Ward WO, \*Rager JE, Guan X, \*Smith N, García-Vargas G, Del Razo L-M, Drobná Z, Kelkar H, Stýblo M, ++Fry RC. Arsenical-Specific DNA Methylation Profiles. Poster Presentation Society of Toxicology. 51st Annual Meeting and ToxExpo. March 2012. San Francisco, CA.
47. \*Sanders AP, Desrosiers TA, Herring AH, Olshan AF, Meyer R, ++Fry RC. Association between toxic metals in private wells and birth defects prevalence. National Birth Defects Prevention Network Annual Conference. February 2012. Washington, DC.
48. \*\*Bailey KA, \*\*Smeester L, Ward WO, \*Rager JE, Guan X, \*Smith N, García-Vargas G, Del Razo LM, Drobná Z, Kelkar H, Stýblo M, ++Fry RC. Arsenic and the Epigenome: Linked by Methylation. Center for Environmental Health and Susceptibility (CEHS) annual symposium. November 2011. Chapel Hill, NC.
49. Kotch JB, Fry RC, \*Sanders AP, Ngyugen V. Heavy metal contamination among children in the Red River Basin in Vietnam. Center for Environmental Health and Susceptibility. November 2011. UNC-Chapel Hill, NC.
50. \*Sanders AP, \*Rager JE, \*\*Smeester L, Kelkar H, Ashley-Koch A, Miranda ML, ++Fry RC. Cadmium exposure in utero: epigenetic effects. Superfund Research Program Annual Meeting. October 2011. Lexington, KY.
51. \*Sanders AP, \*Rager JE, \*\*Smeester L, Kelkar H, Ashley-Koch A, Miranda ML, ++Fry RC. Epigenetic effects of prenatal cadmium exposure: inflammatory pathways targeted. Environmental Mutagen Society Annual Meeting. October 2011. Montreal, Quebec, Canada.

52. \*Rager JE, Lichtveld K, Ebersviller S, \*\*Smeester L, Jaspers I, Sexton KG, ++Fry RC. A Toxicogenomic Comparison of Primary versus Photochemically Altered Air Pollutant Mixtures. International Toxicology of Mixtures Conference. October 2011. Arlington, VA.
53. \*Rager JE, Lichtveld K, Ebersviller S, \*\*Smeester L, Jaspers I, Sexton KG, ++Fry RC. A Toxicogenomic Comparison of Primary versus Photochemically Altered Air Pollutant Mixtures. Visiting Pulmonary Scholar Symposium. October 2011. Chapel Hill, NC.
54. \*Sanders AP, Messier KP, Sheehee M, Rudo K, Serre ML, ++Fry RC. Assessing Arsenic Levels in North Carolina Domestic Well Water. Legislative Day: North Carolina General Assembly. May 2011. Raleigh, NC.
55. \*\*Bailey KA, Wallace K, \*\*Smeester L, Thai, SF, Doug C. Wolf DC, Edwards, SC, ++Fry RC. Differential Modulation of Cancer-Related Molecular Networks in Human and Rat Urinary Bladder Cells Exposed to Trivalent Arsenicals. Society of Toxicology Annual meeting. March 2011. Washington, D.C.
56. \*Sanders AP, Gallagher JE, McGee J, Rhoney S, Hudgens E, Özkaynak H, ++Fry RC. Assessing Metal Levels in Children from the Mechanistic Indicators of Childhood Asthma (MICA) Study. Society of Toxicology Annual Meeting. March 2011. Washington, DC.
57. \*\*Bailey K., \*\*Smeester L, Ward W, \*Rager J, Guan X, \*Smith N, García-Vargas G, Del Razo LM, Kelkar H, Styblo M, ++Fry RC. Arsenical-Specific DNA Methylation Profiles. NC SOT. February 2011. Research Triangle Park, NC.
58. \*Prasad PY, Chastain PD, Nikolaishvili-Feinberg N, \*\*Smeester L, Kaufmann WK, ++Fry RC. An ATM-Dependent DNA Damage Response Induced by Titanium Dioxide Nanoparticles. Environmental Mutagen Society Annual Meeting. October 2011. Montreal, Canada.
59. \*Sanders AP, \*Rager J, \*\*Smeester L, Kelkar H, Ashley-Koch A, Miranda ML, ++Fry RC. Epigenetic effects of prenatal cadmium exposure: inflammatory pathways targeted. Environmental Mutagen Society Annual Meeting. October 2011. Montreal, Canada.
60. \*Sanders AP, Messier KP, Neal J, Sheehee M, Rudo K, Serre ML, Fry RC, Pfaender F, Gray K, Bouma B, Slaughter T. Tracking and Analyzing Contaminants in North Carolina Private Well Waters. Superfund Research Program Annual Meeting. November 2010. Portland, OR.
61. \*Sanders AP, Messier KP, Neal J, Sheehee M, Rudo K, Serre ML, ++Fry RC. Mapping Arsenic Levels in North Carolina Private Well Waters. Environmental Mutagen Society Annual Meeting. October 2010. Fort Worth, Texas.
62. \*Sanders AP, Gallagher J, McGee J, Rhoney S, Hudgens E, ++Fry RC. Identifying Concomitant Metals in Dust, Urine, and Fingernails from Children in Detroit, Michigan. Environmental Mutagen Society Annual Meeting. October 2010. Fort Worth, Texas.
63. \*Rager J, \*\*Smeester L, Jaspers I, Sexton K, ++Fry RC. Formaldehyde Exposure Alters MicroRNA Expression Profiles in Human Lung Cells. Environmental Mutagen Society Annual Meeting. October 2010. Fort Worth, Texas.
64. \*\*Smeester L, \*Rager J, Zhang L, Guan X, \*\*Bailey K, \*Smith N, Garcia-Vargas G, Del Razo L, Drobna Z, Kelkar H, Schroth G, Styblo M and ++Fry RC. Altered DNA Methylation Patterns in Individuals with Arsenicosis. Genetics and Environmental Mutagenesis Society Fall Meeting. October 2010. Durham, NC.
65. \*Rager JE, Lichtveld K, Ebersviller S, \*\*Smeester L, Jaspers I, Sexton KG, ++Fry RC. A Toxicogenomic Comparison of Primary and Photochemically Altered Air Pollutant Mixtures. Environmental Mutagen Society Annual Meeting. March 2010. Fort Worth, Texas.
66. Drobna Z, Niculescu M, Fry RC et al. Epigenetic alterations in fetal mouse livers after in utero exposure to arsenic. 49th Annual SOT Meeting and ToxExpo. March 2010. Utah, Nevada.
67. Fry RC et al. Identifying genomic predictors of chemotherapeutic response. 24th Aspen Cancer Conference. July 2009. Denver, Colorado.
68. Fry RC, Kean O, Rha CK. Analysis of transcriptional responses of mouse fibroblasts to extracts of *Eurycoma longifolia* using DNA microarrays. Second Malaysia-MIT Biotechnology Partnership Program (MMBPP) Symposium. October 2002. Kuala Lumpur, Malaysia.
69. Fry RC and Deng XW. The isolation and characterization of novel mutations within the phytochrome A light signal transduction pathway. 10th International Conference on Arabidopsis Research. June 1999. Melbourne, Australia.



70. **Fry RC**, Champion H, Erickson C, Fitzgerald W, Bivalacqua T, Garrison E and Kadowitz P. Comparison of responses to proadrenomedullary peptide and PAMP (12-20) in the mesenteric vascular bed of the cat. *Experimental Biology*. October 1996. Washington, D.C.

### Teaching Activities

(@ indicate activities that emphasize support of diversity, equity and inclusion (DEI))

**Course Director** **ENVR 630-001, UNC** **Fall, 2009-present**  
 Title: **Systems Biology in Environmental Health**. New Course launched in the Department of Environmental Sciences and Engineering. Course ID: 630-001; Number of Enrolled Students: Fall 2009 (n=16); Spring 2011 (n=11); Spring 2012 (n=17); Spring 2013 (n=18); Fall 2013 (n=13); Fall 2014 (n=12); Fall 2015 (n=14); Fall 2016 (n=21); Fall 2017 (n=28); Fall 2018 (n=20); Fall 2019 (n=31); Fall 2020 (n=17); Fall 2021 (n=22); Credit Hours: 3; Role in the Course: Instructor (100%).

**@Course Director** **ENVR 240-001, UNC** **Spring, 2020-present**  
 Title: **Introduction to Human Exposure and Health Effects Research**. New Course launched in the Department of Environmental Sciences and Engineering with an emphasis on recruiting historically under-represented undergraduate students in STEM. Course ID: 240-001; Number of Enrolled Students: Spring 2020 (n=10); Spring 2021 (n=20); Credit Hours: 1; Role in the Course: Instructor (100%). Note that there are typically two graduate students who assist me with this course.

**Course Co-Director** **ENVR 442-001, UNC** **Fall, 2014-present**  
 Title: **Molecular and Biochemical Toxicology**. Course ID: 442-001; Number of Enrolled Students: Fall 2014 (n=14); Fall 2015 (n=11); Fall 2016 (n=14); Fall 2017 (n=14); Fall 2018 (n=15); Fall 2019 (n=14). Credit Hours: 3; Role in the Course: ESE Co-Instructor, Jaspers: Toxicology Instructor.

**Course Co-Director** **ENVR 601-001, UNC** **Fall, 2012- 2019**  
 Title: **Epidemiology for Environmental Scientists**. New Course launched in the Department of Environmental Sciences and Engineering. Course ID: 890-007; Number of Enrolled Students: Fall 2012 (n=6); Spring 2014 (n=19); Spring 2015 (n=23); Spring 2016 (n=25); Spring 2017 (n=13); 2018 (n=17); 2019 (n=9). Credit Hours: 3; Role in the Course: ESE Co-Instructor, Yeatts: Epidemiology Co-Instructor.

**Course Co-Director** **ENVR 890-004, UNC** **Fall, 2015-2016**  
 Title: **Risk Assessment in the 21<sup>st</sup> Century**. Course ID: 890-004; Number of Enrolled Students: Fall 2015 (n=6); Fall 2016 (n=2, 3 auditors). Credit Hours: 1; Role in the Course: ESE Instructor, MacDonald-Gibson-Co-Instructor.

**Guest Lecturer** **ENVR 732, Duke University** **Spring, 2014-present**  
 Title: Mechanisms in Environmental Toxicology. Course instructor: Joel Meyer; Role in course: Guest lecturer.

**Guest Lecturer** **ENVR 732, UNC** **Fall, 2012-2018**  
 Title: Health Effects of Air Pollutants. Course instructor: Milan Hazucha; Role in course: Guest lecturer.

**Guest Lecturer** **Pathology 726, UNC** **Fall, 2010-2018**  
 Title: Human Environmental Disease. Course instructor: William Kaufmann; Role in course: Guest lecturer.

**Guest Lecturer** **ENVR 442, UNC** **Fall, 2009-2014**  
 Title: Biochemical Toxicology. Course instructor: Ivan Rusyn; Role in course: Guest lecturer.

**Guest Lecturer** **ENVR 431, UNC** **Fall, 2008-2012**  
 Title: Techniques in Environmental Health Sciences. Coordinated and taught laboratories on microarray technology for ENVR 431. Course instructor: Louise Ball; Role in course: Guest lecturer.

**Module Instructor** **MIT** **2002-2008**  
 Developed short courses on microarray processing/analysis for the Computational and Systems Biology Initiative at MIT, BE109 and IAP courses; Role in Course: Instructor (CSBi), Guest Lecturer (BE109 and IAP).

**Summary of Graduate Advising/Mentoring**Current Graduate Student Supervision-Primary Advisor (7 total; 7 Ph.D.):

Ph.D.

1. **Amaree Gardner (Ph.D.)** **2021 -present**  
Primary advisor of supervisory committee. Topic: TBD. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Topic: Community-engagement in environmental health science.
2. **Jeliyah Clark (Ph.D.)** **2018 -present**  
Primary advisor of supervisory committee. Topic: Nutritional Modulation of Arsenic Toxicity. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Topic: Metal-essential element interactions.
3. **Lauren Eaves (Ph.D.)** **2018 -present**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Topic: Metal mixtures and child health outcomes.
4. **Katelyn Huff (Ph.D.)** **2019 -present**  
Primary advisor of supervisory committee. Topic: Epigenetic aging and toxic substances. Department: Curriculum in Toxicology and Environmental Medicine, UNC-Chapel Hill, NC.
5. **Carmen Marable (Ph.D.)** **2019 -present**  
Primary advisor of supervisory committee. Topic: Placenta-brain axis. Department: Neuroscience, UNC-Chapel Hill, NC.
6. **Anastasia Freedman (Ph.D.)** **2020-present**  
Primary advisor of supervisory committee. Topic: Toxic metals and placental toxicity. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC.
7. **Eric Brown (Ph.D.)** **2020 -present**  
Primary advisor of supervisory committee. Topic: Superfund sites and their association with demographic factors. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC.

Former Graduate Student Supervision-Primary Advisor (33 total; 12 Ph.D., 21 M.S.):

Ph.D.:

1. **Kezia Addo (Ph.D.)** **2018-2020**  
Primary advisor of supervisory committee. Department: Curriculum in Toxicology, UNC. Title: *Acetaminophen and developmental toxicity. A Translational Approach to Examine the Effects of Acetaminophen on the Human Placenta.*
2. **Bevin Blake (Ph.D.)** **2017-2020**  
Co-advisor of supervisory committee. Department: Curriculum in Toxicology, UNC. Title: *Assessing the Effects of Perfluoroalkyl Substance Exposure Using Transdisciplinary Science.*
3. **Cassandra Meakin (Ph.D.)** **2017 -2020**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Inorganic arsenic as an endocrine disruptor in the placenta: implication for the glucocorticoid receptor (GR) signaling pathway in trophoblasts.*
4. **Paige Bommarito (Ph.D.)** **2015-2020**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Focus: Cadmium, miRNAs and pregnancy. Title: *Associations between Toxic Metals and Preeclampsia: A Transdisciplinary Approach.*
5. **Lisa Smeester (Ph.D.)** **2013-2018**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *A Critical Role for Imprinted Genes in The Placenta in The Developmental Origins of Health and Disease.*
6. **Martha Scott Tomlinson (Ph.D.)** **2014-2018**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Placental microbes as an indicator of neurocognitive outcomes in children born preterm.*

**2013-2018**

7. **Dami Adebambo (Ph.D.)**  
Co-advisor of supervisory committee. Department: Biological Sciences (Toxicology & Zoology), NC-State University. Title: *Cadmium Exposure and its Impact on the Pathogenesis of Preeclampsia*. Awards: Best Poster, Health Sciences Section at the NIEHS Superfund Research Program Meeting, San Juan, Puerto Rico 2015; KC Donnelly Award.
8. **Jessica Laine (Ph.D.)** **2011-2017**  
Primary advisor of supervisory committee. Department: Epidemiology, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Investigation of exposure to iAs during pregnancy, nutritional biomarkers, iAs metabolism and adverse birth outcomes.* Awards: KC Donnelly Award.
9. **Elizabeth Sebastian (Ph.D.)** **2014-2017**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *The use of metabolomics profiling to elucidate mechanisms underlying arsenic-associated diabetes.* Awards: Karen Wetterhahn Award.
10. **Allison Sanders (Ph.D.)** **2009-2013**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Environmental metals and birth defects: New approaches to understanding the role of metals in congenital heart defects.* Awards: GEAB Impact Award, UNC-Chapel Hill. 2013; Poster Presentation Award, National Birth Defects Prevention Network Annual Meeting, Alexandria VA 2012; GEAB Impact Award, UNC-Chapel Hill. 2011.
11. **Raju Prasad (Ph.D.)** **2009-2013**  
Co-advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Evaluation of genotoxicity and cellular responses upon exposure to titanium dioxide nanoparticles.* Awards: EMS travel award (2012); SOT travel award (2012).
12. **Julia Rager (Ph.D.)** **2009-2013**  
Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *A Systems Biology-Based Approach to Investigating Formaldehyde's Effects on MicroRNA Expression Profiles.* Awards: Poster Award (NC SOT 2013); Syngenta Award (SOT 2013); Graduate Student Fellowship – Novartis Award (SOT 2012); George C. Bunker Award for Outstanding Scholarship and Professional Promise in Environmental Engineering (UNC 2011); Best Student Presentation in Mixture Toxicology (SOT 2011).

## M.S./M.S.E.E./M.S.P.H.:

1. **Arjun Keshava (M.P.H.)** **2020-2021**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Effect of Climate Change on Environmental Effects, Health Outcomes, and Interventions.* Practicum advisor: Paul Lanier
2. **Niharika Palakodety (M.S.P.H.)** **2019-2020**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Effects of Cadmium Exposure on Syncytialization in Relation to Placental Cell Formation and Function.*
3. **Caroline Reed (M.S.)** **2018-2019**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Toxic and essential metals accumulation in the placenta and fetal membrane: an examination in relation to preterm birth risk in a NC cohort.*
4. **Gabriella Gallo (M.S.)** **2017-2018**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Prenatal arsenic exposure is associated with decreased mitochondrial DNA copy number and increased genomic indicators of reactive oxygen species in newborn cord blood leukocytes.*
5. **Cassandra Meaken (M.S.)** **2016-2018**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, UNC-Chapel Hill, NC. Title: *Inorganic arsenic as an endocrine disruptor: modulation of the Glucocorticoid Receptor Pathway and implications for placental physiology.*
6. **Sloane Tilley (M.S.)** **2015-2017**

Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Title: *Analysis of Bladder Cancer Tumor CpG Methylation and Gene Expression within The Cancer Genome Atlas Identifies GRIA1 as a Prognostic Biomarker for Basal-Like Bladder Cancer*

7. **Andrew Nguyen (M.S.)** **2015-2016**  
Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Title: *Using Tox-Pi to Rank ATSDR chemicals.*
8. **Cataia Ives (M.S.)** **2015-2016**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Title: *Adverse outcome pathways.*
9. **Lisa Smeester (M.S.)** **2013-2016**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Title: *Epigenetic changes associated with arsenic exposure.*
10. **Samantha Tulenko (M.S.P.H.)** **2014-2015**  
Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Title: *Identifying biological pathways associated with highest ranking ATSDR chemicals.*
11. **Andrew Yosim (M.S.)** **2014-2015**  
Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Title: *Estimating relationships between arsenic exposure through rice consumption and disease.*
12. **Yvette Nguyen (M.S.)** **2013-2014**  
Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Focus: *Inflammation-related proteins and preeclampsia.*
13. **Joann Gruber (M.S.)** **2011-2012**  
Primary advisor of supervisory committee. Department: Epidemiology, Gillings School of Global Public Health, North Carolina, UNC. Focus: *Gene-Environment Interactions and newborn health effects.*
14. **Rhea Patel (M.S.)** **2010-2012**  
Primary advisor of supervisory committee: Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Graduation: May 2012. Thesis title: *The NF-kB pathway integrates metals biomarkers in children*
15. **Paul Ebohon (M.S.)** **2009-2011**  
Co-advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2012. Thesis title: *Screening Disinfection By-Products and Phenolic Compounds for Estrogenic Activity.* Primary Advisor: Howard Weinberg.
16. **Julia Rager (M.S.E.E.)** **2009-2010**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Graduation: May 2010. Thesis title: *A Systems Biology Approach to Investigate Human Lung Cell Response to Air Pollutants*
17. **Nikia Smith (M.S.)** **2008-2010**  
Primary advisor of supervisory committee: Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Graduation: May 2010. Thesis title: *Environmental Epigenomics: Altered DNA Methylation Patterns in Humans Exposed to Inorganic Arsenic.*
18. **Margaret Ann Benton (M.S.P.H.)** **2008-2010**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2010. Thesis title: *Comparative Genomic Analysis Identifies Common Tumorigenesis-Associated Pathways Modulated by Exposure to Low Dose Arsenic or Cadmium*
19. **Qian Liu (M.S.P.H.)** **2008-2010**  
Primary advisor of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Graduation: May 2010. Thesis title: *Using systems biology approaches to identify gene biomarkers of tumor cell response to chemical compounds.*
20. **Daniel Rojas (M.S.)** **2012-2014**

Primary advisor of supervisory committee. Department: Curriculum in Toxicology, School of Medicine, UNC.

Focus: *Epigenetic changes associated with environmental contaminants.*

21. **Gayatri Ankem (M.S.)**

**2010-2013**

Primary advisor of supervisory committee: Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Graduation: Focus: *Metals exposure and neurodevelopmental effects.*

Former undergraduate Honors Student Supervision-Primary Advisor (4 honors students)

1. **Vennela Avula**

**2019-2020**

Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Focus: *Effects of Inorganic Arsenic on the Epithelial-Mesenchymal Transition, Migration, and Invasion of Placental Cells.*

2. **Kirsi Oldenburg**

**2019-2020**

Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Focus: *The Evaluation of Placental Inflammation via the Genomic Inflammatory Index (GII) in Relation to Key Perinatal Factors.*

3. **Saideep Gona**

**2015-2016**

Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Focus: *Transcription factor occupancy and DNA methylation patterns.*

4. **Yvette Nguyen**

**2013-2014**

Primary advisor of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Focus: *Inflammation-related proteins and preeclampsia.*

Former undergraduate Honors Student Supervision-Committee Member (2 honors students)

1. **Celeste Carberry**

**2019-2020**

Committee member of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Primary advisory: Julia Rager. Focus: *Non-targeted analysis of placentas from preeclamptic patients identifies links to acetaminophen and molecular alterations relevant to cell death.*

2. **Alexis Payton**

**2019-2020**

Committee member of supervisory committee Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC. Primary advisory: Julia Rager. Focus: *Placental Genomic and Epigenomic Signatures Regulating Infant Birth Weight Highlight Mechanisms Involved in Collagen and Growth Hormone Signaling.*

Graduate Student Supervision-Committee Member (ESE) (20 total: 13 Ph.D., 7 M.S. or M.S.P.H.)

Ph.D.:

1. **Jennifer Griggs (Ph.D)**

**2015-2020**

Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *Thesis title: "Bioaccessibility of arsenic and the impact of the microbiome."* Academic Advisor: Rebecca Fry; Research advisor: Karen Bradham.

2. **Elizabeth Corteselli (Ph.D)**

**2012-2019**

Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *Thesis title: "Polyunsaturated fatty acids as determinants of redox changes and inflammatory responses in human airway epithelial cells exposed to ozone"* Academic Advisor: Rebecca Fry; Research advisor: Jim Samet.

3. **Sean Watford (Ph.D)**

**2012-2017**

Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *Thesis title: "Interoperability in Toxicology: Connecting Chemical, Biological, and Complex Disease Data."* Academic Advisor: Rebecca Fry; Research advisor: Matt Martin.

4. **Breanne Holmes (Ph.D.)**

**2012-2017**

Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *Thesis title: "Occurrence and control of estrogenic and androgenic activity in water."* Advisor: Howard Weinberg.

5. **Joseph Zabinski (Ph.D.)** **2015-2017**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *Thesis title: "Advancing environmental human health risk assessment through Bayesian network analysis."* Advisor: Jackie Macdonald-Gibson.
6. **Maiko Arashiro (Ph.D.)** **2011-2017**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2017. *Thesis title: "Understanding the Biological Effects of Isoprene-derived Secondary Organic Aerosol."* Advisor: Jason Surratt.
7. **Maya Nadmipalli (Ph.D.)** **2011-2015**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2015. *Thesis title: "Exposure to zoonotic Staphylococcus aureus among industrial hog operation workers and their household contacts in North Carolina, and dissemination into the household environment."* Advisor: Jill Stewart.
8. **Sarah Hatcher (Ph.D.)** **2011-2015**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2015. *Thesis title: "Environmental and occupational transmission routes of antibiotic-resistant staphylococcus aureus in regions of high industrial hog operation density."* Advisor: Jill Stewart.
9. **Grace Chappell (M.S.P.H., Ph.D.)** **2012-2015**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: April 2014. *Thesis title: "Assesment of DNA copy number alterations in mouse and human hepatocellular carcinoma."* Advisor: Ivan Rusyn.
10. **Connie Kang (Ph.D.)** **2008-2010**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2010. *Thesis title: "Keratin Adducts as biomarkers for dermal exposure to jet fuel JP-8 in USAF fuel-cell maintenance personnel."* Advisor: Leena Nylander-French.
11. **Rebecca Clewell (Ph.D.)** **2008-2010**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2010. *Thesis Title: "Mode of Action Studies with Phthalate Acid Monoesters: Pharmacokinetic and Pharmacodynamic Factors Affecting Steroidogenesis."* Advisor: Louse Ball.
12. **Dan Gatti (Ph.D.)** **2008-2010**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2010. *Thesis title: "Genome-wide Analysis of Transcriptional Regulation in the Murine Liver."* Advisor: Ivan Rusyn.
13. **Courtney Woods (Ph.D.)** **2003-2006**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2006. *Thesis title: "Role of Nuclear Receptor-Independent Pathways in the Mechanism of Action of Peroxisome Proliferators."* Advisor: Ivan Rusyn.

## M.S./M.S.E.E./M.S.P.H.:

1. **Katlyn Phillips (M.S.)** **2015-2017**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *"Viability of Cultured Primary Human Skin Cells Treated with HDI monomer and HDI Isocyanurate."* Advisor: Leena Nylander French.
2. **Laura Taylor (M.S.)** **2015-2017**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; *"Influence of Genetic Variance on Occupational Exposure to 1,6-Hexamethylene diisocyanate isocyanurate"* Advisor: Leena Nylander French.
3. **Kathleen Mcdermott (M.S.)** **2015-2017**

Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; “*Monitoring the Removal of Estrogenic Activity in Wastewater Treated by a Pilot-Scale Constructed Wetland using the Yeast Estrogen Screen*” Advisor: Howard Weinberg.

4. **Sean Watford (M.S.P.H.)** **2012-2014**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: April 2014. Thesis title: “*Building bridges between toxicity testing in the 21<sup>st</sup> century and regulatory decision making through interactive web applications.*” Advisor: Ivan Rusyn.
5. **Andrew Shapiro (M.S.P.H.)** **2012-2014**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: April 2014. Thesis title: “*Health Assessment Workspace Collaborative (HAWC).*” Advisor: Ivan Rusyn.
6. **Jimmy Phuong (M.S.P.H.)** **2012-2014**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: April 2014. Thesis title: “*Structured Application of Biological Ontologies to Annotate High-Throughput Screening Assays and their targets of activity.*” Advisor: Ivan Rusyn.
7. **Rebecca Milsk (M.S.)** **2010-2012**  
Member of supervisory committee. Department: Environmental Sciences and Engineering, Gillings School of Global Public Health, North Carolina, UNC; Graduation: May 2012. Thesis title: “*Comparative cytotoxicity of drinking water disinfection by-product mixtures produced during chlorination and chloramination.*” Advisor: Howard Weinberg.

Graduate Student Supervision-Committee Member, Curriculum in Toxicology (13 total; 13 Ph.D.)

1. **Brittany Rickard (Ph.D.)** 2020-current  
Chair of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Imran Rizvi/ Sue Fenton
2. **Jessica Jimenez (Ph.D.)** 2018-2022  
Chair of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Mark Zylka.
3. **Yael Escobar (Ph.D.)** **2015-2020**  
Chair of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Ilona Jaspers.
4. **Ryan Snyder (Ph.D.)** **2014-2019**  
Chair of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Ilona Jaspers.
5. **Alisa Suen (Ph.D.)** **2012-2017**  
Chair of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Carmen Williams.
6. **Samira Brooks (Ph.D.)** **2010-2015**  
Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Kim Rathmell.
7. **Jenna Currier (Ph.D.)** **2008-2013**  
Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Mirek Styblo.
8. **Madisa Macon (Ph.D.)** **2008-2014**  
Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Sue Fenton.
9. **Jessica Sorrentino (Ph.D.)** **2008-2013**  
Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Ned Sharpless.
10. **Emma Bowers (Ph.D.)** **2012-2018**

- Curriculum Vitae for Rebecca C. Fry, Ph.D. Date: April 2022  
 Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: David Diaz-Sanchez.
11. **Andres Henriquez-Coria (Ph.D.)** **2012-2018**  
 Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Urmila Kodavanti.
  12. **Mimi Huang (Ph.D.)** **2013-2018**  
 Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: Mirek Styblo.
  13. **Katelyn Lavrach (Ph.D.)** **2013-2018**  
 Member of supervisory committee. Curriculum in Toxicology, School of Medicine, North Carolina, UNC; Advisor: James Samet.
- Graduate Student Supervision-Committee member, Department of Epidemiology, UNC-Chapel Hill (1 total; 1 Ph.D.)
1. **Evans Lodge (Ph.D.)** **2017-2022**  
 Member of supervisory committee. Department of Epidemiology, UNC-Chapel Hill, North Carolina, Advisor: Alison Aiello.
- Graduate Student Supervision-Committee member, Duke University (2 total; 2 Ph.D.)
2. **Chris Leonetti (Ph.D.)** **2011-2016**  
 Member of supervisory committee. Duke University, North Carolina, Advisor: Heather Stapleton.
  3. **Sam Hall (Ph.D.)** **2019-present**  
 Member of supervisory committee. Duke University, North Carolina, Advisor: Heather Stapleton.
- Graduate Student Supervision-Committee member, UNC-School of Medicine (1 total; 1 Ph.D.)
1. **Alex Carlson (M.D., Ph.D.)** **2017-2019**  
 Member of supervisory committee. UNC-School of Medicine, North Carolina, Advisor: Rebecca Santelli.
- Post-doctoral advisees (13 total; 1 current, 12 former)**
1. Catherine Bulka **2017-present**  
    - Current position: Post-doctoral researcher, UNC Chapel Hill, NC
  2. Lei Zhang **2020-2022**  
    - Next position: Assistant Professor, Duke Kunshan University, China
  3. Abhishek Venkatratnam **2017-2021**  
    - Next position: Post-doctoral researcher, UNC Chapel Hill, NC
  4. John Szilagyi **2018-2020**  
    - Next position: Researcher, Bristol Myers Squibb, Summit, NJ
  5. Jackie Bangma **2017-2020**  
    - Next position: Post-doctoral researcher, EPA
  6. Samira Brooks **2015-2017**  
    - Next position: NCI Cancer Fellow; MS Johns Hopkins
  7. James Sollome **2014-2015**  
    - Next position: Regulatory Protein Biochemist BASF
  8. Monica Nye **2014-2015**  
    - Next position: Lecturer, UNC Charlotte
  9. Jill Johnston (co-advisor) **2014-2015**  
    - Next position: Assistant Professor, University of Southern California
  10. Paul Ray **2014-2015**  
    - Next position: Scientist Synchrogenix
  11. Bhavesh Ahir **2010-2013**  
    - Next position: Research Scientist at U. of Illinois, Chicago
  12. Kathryn Bailey **2010-2013**  
    - Next position: Scientist, Syngenta, NC
  13. Elyse Lee **2009-2010**  
    - Next position: US-EPA, Washington, D.C.



**Junior faculty mentees (4 current)**

- |   |                     |
|---|---------------------|
| 1. Tracy Manuck, K24 (Department of Obstetrics and Gynecology, UNC-Chapel Hill) | <b>2020-present</b> |
| 2. Folami Ideraabdulah, K22 (Department of Genetics, UNC-Chapel Hill)           | <b>2016-present</b> |
| 3. Hudson Santos, K23 (Department of Nursing, UNC-Chapel Hill)                  | <b>2017-present</b> |
| 4. Aisha Dickerson, K99 (Harvard University)                                    | <b>2018-2020</b>    |
| 5. Kasia Kordas, Associate Professor (University of Buffalo)                    | <b>2018-2022</b>    |

**Graduate Student Supervisor****2002-2003**

Supervised research projects of graduate students in the Biological Engineering Department, MIT.

**UROP Supervisor****2000-2003**

Trained and supervised undergraduates in microarray and genomics research techniques through the Undergraduate Research Opportunity Program (UROP), MIT.

**Teaching Assistant****1995-1996**

Coordinated and taught laboratories: Vertebrate Physiology, General Ecology, and Introductory Biology, Tulane University.

**Contracts and Grant Support****Active Grant Support:**

- |   |                                       |                       |
|---|---------------------------------------|-----------------------|
| • Burroughs Welcome<br>Total Amount: <b>\$115,993</b><br>Equity and Environmental Justice Program (QUEST) internship<br><b>Role: Principal Investigator</b>                           | (Fry)                                 | 07/01/2021-06/30/2022 |
| • Burroughs Welcome<br>Total Amount: <b>\$45,000</b><br>Linking climate change and preterm birth in NC<br><b>Role: Principal Investigator</b>   | (Fry)                                 | 12/01/2021–11/30/2022 |
| • Lineberger Comprehensive Cancer Center<br>Total Amount: <b>\$49,823</b><br>Toxic Metals in Private Well Drinking Water and Cancer Prevalence<br><b>Role: Principal Investigator</b> | (Fry)                                 | 07/1/2022-06/30/2023  |
| • NINR, R01NR019245<br>Total Amount: <b>\$1,917,272</b><br>Genetic and epigenetic effects on childhood cognitive trajectories<br>Role: Co-Investigator                                | (Santos)                              | 12/01/2021–11/30/2022 |
| • NIH, P42ES031007<br>Total Amount: <b>\$12,240,332</b><br>The UNC-Chapel Hill Superfund Research Program<br><b>Role: Principal Investigator</b>                                      | (Fry)                                 | 02/20/2020-01/31/2025 |
| • NIH, R01ES029925<br>Total Amount: <b>\$3,327,437</b><br>Genetic underpinning of diabetes associated with arsenic exposure<br><b>Role: Principal Investigator</b>                    | (Fry/Styblo, Pardo-Manuel de Villena) | 02/01/2019-01/31/2024 |
| • NIH, UH3OD023348<br>Total Amount: <b>\$20,053,762</b><br>Environment, Epigenetics, Neurodevelopment & Health of Extremely Preterm Children<br><b>Role: Principal Investigator</b>   | (Fry/O'Shea)                          | 09/21/2016–08/31/2023 |

- NIH, R01ES029531-01 (Fry/Keil) 09/01/2018–05/31/2023  
Total Amount: **\$1,460,827**  
Public Health Priority Setting for Environmental Metals Mixtures and Birth Defects  
**Role: Principal Investigator**
- NIEHS, R01ES028721 (Fry/Styblo) 09/01/2018–05/31/2023  
Total Amount: **\$3,696,679**  
Developmental windows for arsenic-associated diabetes  
**Role: Principal Investigator**
- NIMHD, R01-MD013349 (Harris) 08/14/2018-03/31/2023  
Total Amount: **\$3,500,000**  
The ADD Health Epigenome Resource: Life Course Stressors and Epigenomic Modifications in Adulthood  
Role: Co-Investigator
- NIH R01HD092374 (Fry/O'Shea) 09/08/2017–05/31/2022  
Total amount: **\$3,490,000**  
Placental Epigenome and Brain Dysfunction After Preterm Birth  
**Role: Principal Investigator**
- NIH, R01-HD087061 (Harris) 09/09/2016–05/31/2021  
Total amount: **\$1,894,105**  
Social Context, the Life Course, and Genetic Transcription in Add Health  
Role: Co-Investigator
- NIH, R01 ES026973 (Heaney) 07/01/2016–06/30/2021  
Total amount: **\$38,124**  
Arsenic and Immune Response to Influenza Vaccination in Pregnant Women and Newborns  
Role: Principal Investigator of UNC subcontract
- NIH, R01 ES025124 (Peden) 03/01/2016–02/28/2021  
Total amount: **\$1,921,410**  
Gamma Tocopherol Chemoprevention of Wood Smoke PM2.5-Induced Airway Inflammation  
Role: Investigator  
Role: Co-Investigator
- NIEHS, T32-ES007018 (Fry) 07/01/2017-06/30/2022  
Total Amount: **\$1,712,823**  
Project: Biostatistics for Research in Environmental Health  
**Role: Principal Investigator**

**Prior Grant Support:**

- NIH, UG3OD023348 (Fry/O'Shea) 09/21/2016–08/31/2018  
Total Amount: **\$5,053,762**  
Environment, Epigenetics, Neurodevelopment & Health of Extremely Preterm Children  
**Role: Principal Investigator**
- NIEHS, R01-ES022697 (Styblo) 12/31/2013-10/31/2017  
Total Amount: **\$1,045,000**  
Project: Mechanisms of Arsenic-Induced Diabetes Mellitus  
Role: Co-Investigator
- NIH, P50-HL120100 (Tarran) 09/19/2013-08/31/2018  
Total Amount: **\$2,648,046**  
Project: The Impact of Tobacco Exposure on the Lung's Innate Defense System
- USEPA (CR-83591401) (Jaspers) 12/01/2015–01/30/2018  
Total amount: **\$1,008,228**  
Cooperative Training Partnership between the U.S. EPA and the UNC-CH Training Collaboration in Toxicology and Environmental Sciences (TC-ToxES)  
Role: Co-Investigator
- NIEHS, R21 (Satterwhite) 09/01/2016-08/31/2018  
Total amount: **\$195,255**

Protecting Neurodevelopment in Latino Migrant Children by Reduced Exposure to Organophosphate Pesticides

Role: Co-Investigator

- NIEHS, P42 ES005948 (Fry) 04/01/2011- 03/31/2018  
Total Amount: **\$3,179,000**  
Project: UNC-Superfund Research Program  
**Role: Principal Investigator**
- NIEHS R13-ES027335 (Fry) 07/01/2016-06/30/2017  
Total amount: **\$8,000**  
Prenatal Environmental Toxicants: Risk Factors for Infectious Disease in Children  
**Role: Principal Investigator**
- NIH, R01-ES024950 (Lu) 02/05/2015-11/30/2016  
Total amount: **\$2,958,130**  
Functional Interaction between the Gut Microbiome and Arsenic Exposure  
Role: PI of UNC subcontract
- NIH, R03 HD80788 (Vora) 08/15/2014–07/31/2016  
Total Amount: **\$100,000**  
Project: Determination of Fetal Gene Expression in Women with Preterm and Term Birth  
Role: Co-Investigator
- Texas Commission on Environmental Quality (Swenberg/Fry) 05/01/2012- 04/31/2015  
Total Amount: **\$200,000**  
Project: Formaldehyde and Epigenetic Changes  
**Role: Principal Investigator**
- NIEHS, R01-ES019315 (Fry) 10/01/2010- 05/31/2016  
Total Amount: **\$2,300,000**  
Project: In Utero Exposure to Arsenic, Links to Epigenetic Alterations and Disease  
**Role: Principal Investigator**
- NIEHS, R01 Victor (Styblo) 10/01/2010- 09/30/2015  
Total Amount: **\$900, 000**  
Project: Arsenic and Diabetes.  
Role: Co-Investigator
- Gillings Innovation Laboratory (Fry) 07/01/2010-6/30/2012  
Total Amount: **\$80, 000**  
Project: Body-on-a-Chip: A New *In Vitro* Testing System to Predict Toxicity of Environmental Contaminants  
**Role: Principal Investigator**
- Water Research Foundation (Weinberg/Fry) 04/15/2010-04/31/2013  
Total Amount: **\$300, 000**  
Title: Screening Endocrine Activity of DBP's  
**Role: Principal Investigator**
- Pfizer Scholar Grant in Public Health (Fry) 09/01/2009–08/31/2011  
Total Amount: **\$130, 000**  
Project: Establishing a Biomonitoring Program in NC for Prenatal Metals Exposure.  
**Role: Principal Investigator**
- NIH, ARRA Supplement (Swenberg) 07/01/2009-06/30/2011  
Total Amount: **\$215,195**  
Project: ARRA-SBRP: Environmental Exposure and Effect of Hazardous Chemicals (Administrative Supplement)  
Role: Co-Investigator
- CEHS-UNC Pilot project award (Fry) 06/01/2009–06/01/2010  
Total Amount: **\$30, 000**  
Project: Mapping methylated DNA sites associated with arsenical-induced skin disease.  
**Role: Principal Investigator**
- NCTRACS Institute UNC (Fry) 03/01/2009-04/01/2010  
Total Amount: **\$10, 000**  
Project: Identifying CpG Site Methylation Associated with Prenatal Metal (Cadmium) Exposure.

**Role: Principal Investigator**

- NCTRACS Institute UNC (Jaspers) 03/01/2009-04/01/2010  
Total Amount: **\$10,000**  
Project: Identifying CpG methylation associated with ETS exposure.  
Role: Investigator
- Grant Number: 2 P30 CA014051-34 (Jacks) 06/30/2005-04/30/2010  
National Cancer Institutes  
Cancer Center Support (Core) Grant  
Role: Research Scientist; Director, Microarray Group
- P30-ES02109 (Samson) 04/15/2005-03/31/2010  
National Institute of Environmental Sciences  
MIT Center for Environmental Health Sciences  
Role: Research Scientist; Director, Genomics and Bioinformatics Group
- 5-U19-ES11399 (Samson) 09/30/2001-07/31/2006  
National Institute of Environmental Health Sciences  
Global Responses to Aflatoxin B1 and Alkylating Agents  
Project #2  
Role: Research Scientist

**Professional Service****To Discipline:***Committee member*

- Environmental Influences of Child Health Outcomes (ECHO) Program, Evaluation and Mentoring Committee Co-Chair 2021-current
- Chair, Peer Review Meeting of the Draft NTP 2021  
(Developmental and Reproductive Toxicity Technical Reports on 2-Hydroxy-4-methoxybenzophenone and 2-Ethylhexyl p-Methoxycinnamate)
- Search Committee member, National Toxicology Program Director 2020-2021
- External Advisor, Dartmouth College, Superfund (P42) Research Program 2019-present
- External Advisor, University of Buffalo, MSPH program 2021
- External Advisor, Harvard University P30 Center 2019-present
- External Advisor, Emory Hercules P30 Center 2019-present
- External Advisor, MIT Superfund (P42) Research Program 2018-present
- Environmental Influences of Child Health Outcomes (ECHO) Strategic Planning Task
  - Force Co-Chair 2019-2020
- International Agency for Research on Cancer, Fellowship Selection Committee Chair 2018-2019
- 2018 NC Women's Health Report Card Advisory Board Charge 2017-2019
- All of Us: Child Enrollment Scientific Vision Working Group 2017-2018
- ECHO Steering Committee 2017-present
- External Advisor, TaRGET II Consortium (T2C) 2016-2020
- International Agency for Research on Cancer, Fellowship Selection Committee 2015-2018
- Food and Drug Administration, Risk review panel 2015-2016
- National Research Council on Inorganic Arsenic 2012-2015

*Editorial Board Member:*

- Toxicological Sciences 2019-present
- Environmental Epigenetics 2015-present
- Mutation Research—Reviews 2015-present
- International Scholarly Research Network (ISRN), Genetics 2012-present

*Invited reviewer:*

- Environmental Science & Technology 2010-present
- Toxicological Sciences 2009-present
- Mutation Research/ Fundamental and Molecular Mechanisms of Mutagenesis 2009-present
- Physiological Genomics 2009
- Environmental Health Perspectives 2008-present

*Invited member of review panel:*

- NIH, Behavioral Genetics and Epidemiology (BGES) 2021
- NIEHS Environmental Health committee (T32 and P30) 2017-2020
- NIEHS ONES review committee 2015-present
- Department of Defense (DoD) review committee 2017
- NIEHS, R21 Study section (Chair) 2017
- NIEHS, P30 and T32 Study section 2016-current
- NIEHS, R13 Study section (Chair) 2016
- NAME study section 2014
- NIEHS Career Awards Grant Review Panel (K applications) 2012-2015
- NIEHS Superfund Project Grant Review Panel 2011-2015
- NIH Director's Early Independence Award 2015
- National Science Foundation (NSF) East Asia and Pacific Summer Institutes (EAPSI) program Grant Review Panel 2010

*Member/leadership roles within scientific societies:*

- SOT Metals Specialty Section, President 2017-2018
- SOT Metals Specialty Section, Vice-President 2016-2017
- SOT Metals Specialty Section, Vice-President elect 2015-2016
- Councilor, Genetics and Environmental Mutagenesis Society (GEMS), NC 2010-2012
- SOT, Councilor for Stem Cell Specialty Section 2011-2012
- SOT, Secretary for Metals Specialty Section 2013-2015

To the Academy:

- Chair, National Toxicology Program (NTP) Review of the Developmental and Reproductive Toxicity (DART) Reports on 2-Hydroxy-4-methoxybenzophenone (2H4MBP) and 2-Ethylhexyl p-methoxycinnamate (EHMC) September 2021
- Scientific expert for the Department of Defense (DOD): Trichloroethylene: occupational exposure levels August 2021
- Panel member, National Academies of Science (NAS) National Research Council for the Integrated Risk Information System (IRIS) review of inorganic arsenic 2013

To the State of North Carolina:*Committees:*

1. Member, Selection Committee for Toxicologic Analysis of Coal Ash. Chapel Hill, NC 2019

*Invited presentations:*

1. *&Environmental Justice at Home; EJ@HOME: UNC Gillings School of Global Public Health (virtual), UNC Science Expo, Chapel Hill, NC. April 2021.*
2. *PFAS and the placenta, N.C. DEQ and DHHS Secretaries' Science Advisory Board (SSAB), Raleigh, NC. November 2019.*
3. *Health effects of toxic metals exposure in children. Local Citizens Meeting, Lee County, NC. April 2016.*

4. *Health effects of toxic metals exposure in children.* Civil Rights Meeting. Walnut Cove, NC. April 2016
5. *Health effects of toxic metals exposure in children.* North Carolina DHHS. July 2015.
6. *Examining the biological mechanism underlying adverse health outcomes of arsenic exposure.* Water Quality and Human Health. UNC Superfund Research Program Teacher Training Activity. March 2015
7. *Toxic metals in the Environment and Children's Health.* North Central Environmental Health District. NC Public Health Association. 4<sup>th</sup> Quarterly Meeting. December 2014.
8. *Toxic metals in the Environment and Children's Health.* City Council Town of Eden. November 2014.
9. *Health effects of toxic metals on children.* NC Healthy Homes Task Force. May 2014.
10. *Toxic metals in the environment.* Science Café for the NC community. February 2014.
11. *Epigenetics: Genes and the Environment Integrating this Topic into your Biology Curriculum.* Professional Development Workshop for Biology Teachers from NC. July 2012.
12. *Is your well water safe?"* North Carolina Health Director's Meeting. February 2012.
13. *Tracking and Analyzing Contaminants in North Carolina's Private Wells.* North Carolina, DHHS. November, 2010

### International

1. Member, External review committee for the Molecular and Carcinogenesis Group, International Agency for Research on Cancer Research (IARC) March 2020
2. Member, Fellowship selection committee, International Agency for Research on Cancer Research (IARC), March 2015-March 2019

### Internal Service to SPH

1. *CoChair, ESE Centennial Planning Committee* 2018-2021
2. *Member, Research Council SPH* 2021-present  
Member of research council for the SPH
3. *Chair, Search Committee (Assistant Dean for Academic Affairs)* February 2020  
Directed search committee for a new Associate Dean for SPH
4. *Chair, Search Committee (Associate Dean for Research)* July 2018  
Directed search committee for a new Associate Dean for SPH
5. *Member, ESE Promotions Committee* 2017-present  
Serve as member of the ESE promotions committee
6. *Chair, SPH APT Committee* 2020-present  
Serve as Chair of the SPH APT committee
7. *Member, SPH APT Committee* 2017-2019  
Serve as member of the SPH APT committee
8. *Member, Post-tenure Review Committee*, Served as member of a post-tenure review committee in ESE  
Fall 2016, Fall 2020,  
Spring 2020
9. *Member, Search Committee (Chair)* April 2016  
Served as member of the search committee for a new Chair in ESE
10. *Chair, Search Committee (Faculty hire)* May 2015  
Directed search committee for a new environmental health faculty member in ESE
11. *Member, ESE Academic Programs Committee* 2014-present  
Serve as member of APC committee
12. *Member, UNC Faculty Council* 2013-present  
Serve as Gillings School of Global Public Health Representative
13. *Member of ESE Admissions Committee* 2013-2015  
Served as head of health-related admissions
14. *Member of Curriculum in Toxicology Executive Committee:* 2012-present

Serve on Toxicology Committee

15. *Member of ESE Committee for BSPH Program* 2012  
Served on ESE Committee to refine BSPH requirements.
16. *Director of Search Committee* July 2011  
Served as director of the search committee for a new Director for the Curriculum in Toxicology.
17. *Member of Search Committee* December 2009  
Served on ESE Search Committee for Recruitment of a Research Associate Professor to direct ESE Smog Chamber Operations.
18. *Member of Steering Committee* 2009-2016  
Served as environmental liason for the North Carolina Integrated Cancer Information and Surveillance System (ICISS). This project is funded through the Lineberger Cancer Center.