

CURRICULUM VITAE

PERSONAL DATA

Name: John Steven House

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EDUCATION

2007- 2011 North Carolina State University, Ph.D. (Molecular & Cellular Toxicology)
1995-1997 North Carolina State University, M.Stat (Applied Statistics)
1990-1994 University of Tennessee, B.S. (Organismal and Systems Biology)

POSITIONS – ACADEMIA and GOVERNMENT

Staff Scientist, 2019 – Present
Biostatistics and Computational Biology
National Institute of Environmental Health Sciences

Staff Scientist, 2018-2019
Bioinformatics Research Center
North Carolina State University

Research Scholar, 2016-2018
Bioinformatics Research Center
North Carolina State University
Fred Wright, PhD (Advisor)

Postdoctoral Fellow, 2011-2016
Immunity, Inflammation, and Disease Laboratory
Epidemiology Branch
National Institute of Environmental Health Sciences
Stephanie London, PhD (Advisor)

Graduate Research Associate, 2006-2011
North Carolina State University
Toxicology Department
Robert Smart, PhD (Advisor)

POSITIONS - BUSINESS

Director of Forecasting, 2002 - 2006

William Carter Company, GA

Senior Consultant & Solution Architect, 2000 - 2002

Experio Solutions, GA

Senior Statistician, 1998 - 2000

Michelin Tire Corporation, SC

LEADERSHIP TRAINING

1999 – Leadership Through People Skills

TEACHING and OUTREACH

2023 – Present – Paid Lecturer – Introduction to R in Biological Sciences,
North Carolina State University, Raleigh, NC

2019 – Present – Invited Lecturer – Bioinformatics in Toxicology, **North Carolina State University**, Raleigh, NC

2018 – Present – Invited Lecturer – Computational Environmental Sciences and Toxicology, **North Carolina State University**, Raleigh, NC

2012 – Present – Invited Lecturer - Mechanisms of Hepatic Toxicology, **North Carolina State University**, Raleigh, NC

2011 – Present – Invited Lecturer - General Hepatic Toxicology, **North Carolina State University**, Raleigh, NC

2020 – Development of **NIEHS** high school lectures emphasizing critical thinking and the Covid19 and the Pandemic Vulnerability Index. **Received NIEHS award for this work.**

2020 – Basics in R lectures at **NIEHS**

2018 – Co-Instructor – Food Toxicology, **North Carolina State University**, Raleigh, NC

2016 – Invited Lecturer – Current Events in Toxicology, **North Carolina State University**

2016 – Invited Lecturer – Food Toxicology, **North Carolina State University**

2012 – Guest Lecturer – Honors Biology (GWAS), **North Carolina State University**

2002 – 2006 – Course developer and instructor on Excel®, PowerPoint® and Word® – **William Carter Company**

1994 – 1996 – Teaching Assistant, **Department of Statistics, North Carolina State University**

REVIEWER FOR

Frontiers in Genetics
Frontiers in Toxicology
Frontiers in Environmental Sciences
Genome Research
Nature Nanotechnology
Journal of Biological Chemistry
Journal of Clinical Medicine
Biodata Mining
American Journal of Clinical Nutrition
Toxicological Sciences
American Journal of Respiratory Cell and Molecular Biology
Journal of Developmental Origins of Health and Disease

MENTORING

Rebecca Noga – 2023. Summer Intern. Common and Rare Variant analyses in PEGS cohort. Currently a PhD student at UNC in public health

Annie DiFrank – 2022. Summer Intern. Exposures and genetic correlations in PEGS. Currently a graduate student at NCSU in genetics

Cynthia Fisher – 2021. Summer Intern. Exposome-wide associations with allergic rhinitis in the PEGs cohort. Currently finishing an MPH program at UNC

Violet Evans – 2021-2022. NIEHS Scholars Connect Program (NSCP). Genetic mapping of hemoglobin glycation index (HGI) response in the ACCORD clinical trial. Currently in the masters of analytics program at NCSU

Adrian Green – 2021-2022. North Carolina State University post-doctoral researcher, on Bioinformatics and machine learning for his K99/R00 application. Currently a staff scientist for SCIOME

Harlyn Skinner – 2020-2021. Post-doctoral research at North Carolina State University, on machine learning and analysis methods in R

Dillon Lloyd – 2018-2020. Undergraduate Research at North Carolina State University in the NEST cohort with Cathrine Hoyo. Currently finishing PhD program at North Carolina State University

Dylan White – PhD committee - Storm Track Dynamics of African Easterly Waves

INVITED TALKS

2022 *Mapping Genetic Determinants of Blood Glucose Control in the Action to Control Cardiovascular Risk in Diabetes Study Group (ACCORD)*. American Diabetes Association's 82nd Scientific Sessions, New Orleans, Louisiana

2022 *Mapping Genetic Determinants of Blood Glucose Control in The Action to Control Cardiovascular Risk in Diabetes (ACCORD) Study Group*. NIEHS, RTP

2019 *Your Children are what You Eat? Associations of Maternal Diet with Offspring Behavior*. NIEHS, RTP, NC

2018 *Maternal Dietary Influences on Offspring Epigenetics and Behavior*. Eastern Carolina University, Greenville, NC

2017 *High-Throughput Dose Response Modeling with Targeted Sequencing*. Biospyder. Carlsbad, CA

2016 *TempO-Seq for Dose-Response Expression Experiments*. Triangle Statistical Genetics Conference, RTP

2015 *Use of ENCODE tools and genome browsers to generate hypothesis*. Toxicology Department. North Carolina State University, Raleigh, NC

2015 *Genetic and Exposure Influences on Pulmonary Function and Atopy in Humans*. Hudson Alpha Institute for Biotechnology, Huntsville, AL

2010 *C/EBP α and C/EBP β are Determinates of Skin Carcinogenesis and are Essential Regulators of Keratinocyte and Sebocyte Differentiation*. Society of Toxicology Platform Session Speaker

PROFESSIONAL SERVICE AND LEADERSHIP

2022 – Present – Division of Intramural Research Staff Scientist Representative on the Continuity of Operations Team, NIEHS

2021 SS/SC Communications Committee, NIEHS

2020 NTP Staff Scientist Search Committee, NIEHS

2019 Epidemiology Branch Poster Judge, NIEHS

2018 NC Society of Toxicology Poster Judge

2016-18 Grant Reviewer for Center for Human Health and the Environment, NCSU

2016/17 Symposium Planning Committee Chair, Center for Human Health and the Environment, NCSU

2014/15 Lung Respiratory Biology Group Steering Committee, NIEHS

2014/15 NIEHS Career Fair Steering Committee

2012/13 DNA-day instruction in rural public high schools

2010 Society of Toxicology Platform Session Chair, Salt Lake City. *Gene Environmental Interactions in Carcinogenesis*

CONFERENCES

2022 *Questionnaire-Based Exposome-Wide Association Study (Ex-WAS) on Allergic Rhinitis in the Personalized Environment Genes Study (PEGS)*, **Society of Toxicology, San Diego, CA**

2021 *Clomifene and Assisted Reproductive Technology in Humans are Associated with Offspring Epigenetic Alterations in Imprinted Control Regions*, **Society of Toxicology, Virtual – Senior Author**

2021 *Down-sampling Expression Dose-Response Modeling: Discovery versus \$\$\$*, **Society of Toxicology, Virtual**

2018 Cardiovascular Toxicity Screening of Polychlorinated Biphenyls and Their Major Metabolites, Society of Toxicology, San Antonio, TX

2016 Maternal Nutrition and Early Childhood Behavioral Outcomes in NEST, NIEHS Environmental Health FEST, NC

2016 Maternal Nutrition and Early Childhood Behavioral Outcomes in NEST, ToxicoEpigenetics: The Interface of Epigenetics and Risk Assessment, VA

2015 Raw Milk Consumption and Pulmonary Function in Adults in the Agricultural Lung Health Study, American Thoracic Society, Denver, CO

2014 Genetic Variation in HTR4 and lung function: GWAS follow-up in mouse, FASEB – Lung Development, Saxton's River, VT

2014 HTR4 and lung function: GWAS follow-up in mouse, Visiting Pulmonary Scholars, RTP, NC

2013 Htr4 Deficient Mice Exhibit Increased Airway Resistance and Altered Control of Breathing. Gordon Research Conference, Andover, NH

2013 GWAS Follow-up in Htr4^{-/-} Mice Finds Altered Lung Function and Control of Breathing. Epidemiology Branch Review

2011 C/EBP α and C/EBP β are Required for Sebocyte Differentiation and Stratified Squamous Differentiation in Adult Mouse Skin. 9th International Skin Carcinogenesis Conference, University Park, PA

2011 C/EBP α and C/EBP β are Required for Sebocyte Differentiation and Stratified Squamous Differentiation in Adult Mouse Skin. Graduate Research Symposium

2010 C/EBP α and C/EBP β are Determinates of Skin Carcinogenesis and are Essential Regulators of Keratinocyte and Sebocyte Differentiation. Society of Toxicology, Salt Lake City, UT

FUNDING

2019 – Principal Investigator. Seed money: \$20k to conduct WGBS whole genome bisulfite sequencing on 20 cordblood samples to investigate difference in ADHD and normative children in epigenetics

2018 – Co-Investigator developing distance education course in food toxicology. *Is it something I ate?* (\$5,000, NCSU).

2017 – Co-Investigator. *The role of C/EBP β in regulating p53 pro-apoptotic transcriptional activity in response to UVB solar radiation* (\$25,000, CHHE)

PUBLICATIONS – Peer Reviewed Research Articles

References

1. Wheeler, M.W., et al., *ToxicR: A computational platform in R for computational toxicology and dose–response analyses*. *Computational Toxicology*, 2023. **25**: p. 100259.
2. Tsai, H.-H.D., et al., *A tiered testing strategy based on in vitro phenotypic and transcriptomic data for selecting representative petroleum UVCBs for toxicity evaluation in vivo*. *Toxicological Sciences*, 2023. **193**(2): p. 219-233.
3. House, J.S., et al., *C/EBP β deficiency enhances the keratinocyte innate immune response to direct activators of cytosolic pattern recognition receptors*. *Innate Immunity*, 2023. **29**(1-2): p. 14-24.
4. Akhtari, F.S., et al., *Questionnaire-based polyexposure assessment outperforms polygenic scores for classification of type 2 Diabetes in a multiancestry cohort*. *Diabetes Care*, 2023. **46**(5): p. 929-937.
5. Wolkin, A., et al., *Comparison of national vulnerability indices used by the Centers for Disease Control and Prevention for the COVID-19 response*. *Public Health Reports*, 2022. **137**(4): p. 803-812.
6. Wolkin, A., et al., *Comparison of National Vulnerability Indices Used by the Centers for Disease Control and Prevention for the COVID-19 Response (May, 2022, 10.1177/00333549221090262)*. *PUBLIC HEALTH REPORTS*, 2022. **137**(5): p. 1041-1041.
7. Shive, H.R., et al. *Characterization of the precancerous and cancer microenvironment in a zebrafish sarcoma model*. in *CLINICAL CANCER RESEARCH*. 2022. AMER ASSOC CANCER RESEARCH 615 CHESTNUT ST, 17TH FLOOR, PHILADELPHIA, PA
8. Shive, H.R., et al., *Abstract PR011: Characterization of the precancerous and cancer microenvironment in a zebrafish sarcoma model*. *Clinical Cancer Research*, 2022. **28**(18_Supplement): p. PR011-PR011.
9. McGee, C., et al., *Longitudinal Serological Surveillance for COVID-19 Antibodies after Infection and Vaccination*. *Microbiology Spectrum*, 2022. **10**(5): p. e02026-22.
10. Lloyd, D.T., et al., *Clomifene and Assisted Reproductive Technology in Humans Are Associated with Sex-Specific Offspring Epigenetic Alterations in Imprinted Control Regions*. *International Journal of Molecular Sciences*, 2022. **23**(18): p. 10450.
11. Lee, E.Y., et al., *Questionnaire-based exposome-wide association studies (ExWAS) reveal expected and novel risk factors associated with cardiovascular outcomes in the Personalized Environment and Genes Study*. *Environmental Research*, 2022. **212**: p. 113463.
12. Jima, D.D., et al., *Genomic map of candidate human imprint control regions: the imprintome*. *Epigenetics*, 2022. **17**(13): p. 1920-1943.
13. Jackson, T.W., et al., *Adrenal stress hormone regulation of hepatic homeostatic function after an acute ozone exposure in Wistar-Kyoto male rats*. *Toxicological Sciences*, 2022. **189**(1): p. 73-90.
14. House, J.S., et al., *143-OR: Mapping Genetic Determinants of Blood Glucose Control in the Action to Control Cardiovascular Risk in Diabetes Study Group (ACCORD)*. *Diabetes*, 2022. **71**(Supplement_1).
15. House, J.S., et al., *Grouping of UVCB substances with dose-response transcriptomics data from human cell-based assays*. *Altex*, 2022. **39**(3): p. 388–404.
16. Henriquez, A.R., et al., *Stress drivers of glucose dynamics during ozone exposure measured using radiotelemetry in rats*. *Environmental Health Perspectives*, 2022. **130**(12): p. 127006.
17. Henriquez, A.R., et al., *Social isolation exacerbates acute ozone inhalation induced pulmonary and systemic health outcomes*. *Toxicology and Applied Pharmacology*, 2022. **457**: p. 116295.
18. Gonzalez-Nahm, S., et al., *Maternal Mediterranean Diet Adherence and Its Associations with Maternal Prenatal Stressors and Child Growth*. *Current Developments in Nutrition*, 2022. **6**(11): p. nza146.

19. Gonzalez-Nahm, S., et al., *Maternal Periconceptional Stressors, Mediterranean Diet Adherence, and Child Outcomes*. Current Developments in Nutrition, 2022. **6**(Supplement_1): p. 650-650.
20. Farida S Akhtari 1 2, D.L., Adam Burkholder 3, Xiaoran Tong 1, John S House 1, Eunice Y Lee 1, John Buse 4, Shepherd H Schurman 2, David C Fargo 3, Charles P Schmitt 5, Janet Hall 2, Alison A Motsinger-Reif 1, *Questionnaire-Based Polyexposure Assessment Outperforms Polygenic Scores for Classification of Type 2 Diabetes in a Multiancestry Cohort*. 2022.
21. Brown, E., et al., *LBMON114 Enrichment Of Rare Sequence Variants In Genes That Communicate Metabolic Signals To The GnRH System In Hypothalamic Amenorrhea*. Journal of the Endocrine Society, 2022. **6**(Supplement_1): p. A466-A467.
22. Snow, S.J., et al., *Peripheral metabolic effects of ozone exposure in healthy and diabetic rats on normal or high-cholesterol diet*. Toxicology and applied pharmacology, 2021. **415**: p. 115427.
23. Nichols, C.E., et al., *Lrp1 regulation of pulmonary function. Follow-Up of Human GWAS in Mice*. American journal of respiratory cell and molecular biology, 2021. **64**(3): p. 368-378.
24. McDonough, C.W., et al., *Adverse Cardiovascular Outcomes and Antihypertensive Treatment: A Genome-Wide Interaction Meta-Analysis in the International Consortium for Antihypertensive Pharmacogenomics Studies*. Clinical Pharmacology & Therapeutics, 2021. **110**(3): p. 723-732.
25. Marvel, S.W., et al., *The COVID-19 Pandemic Vulnerability Index (PVI) Dashboard: Monitoring county-level vulnerability using visualization, statistical modeling, and machine learning*. Environmental Health Perspectives, 2021. **129**(1): p. 017701.
26. Maguire, R.L., et al., *Associations between maternal obesity, gestational cytokine levels and child obesity in the NEST cohort*. Pediatric obesity, 2021. **16**(7): p. e12763.
27. Lee, E., et al., *Exposome-Wide Association Studies (ExWAS) Reveal Expected and Novel Risk Factors Associated with Cardiovascular Outcomes in the Personalized Environment and Genes Study*, in TP61. TP061 RESIDENTIAL AND OCCUPATIONAL EXPOSURES: WHERE WE LIVE, WORK, AND BREATHE. 2021, American Thoracic Society. p. A3032-A3032.
28. House, J.S., et al., *Grouping of UVCB substances with new approach methodologies (NAMs) data*. Altex, 2021. **38**(1): p. 123.
29. Henriquez, A.R., et al., *Glucose dynamics during ozone exposure measured using radiotelemetry: stress drivers*. BioRxiv, 2021: p. 2021.12. 09.471963.
30. Colonna, C.H., et al., *The role of hepatic vagal tone in ozone-induced metabolic dysfunction in the liver*. Toxicological Sciences, 2021. **181**(2): p. 229-245.
31. Alick, C.L., et al., *Periconceptional maternal diet characterized by high glycemic loading is associated with offspring behavior in NEST*. Nutrients, 2021. **13**(9): p. 3180.
32. Akhtari, F.S., et al., *High-throughput screening and genome-wide analyses of 44 anticancer drugs in the 1000 Genomes cell lines reveals an association of the NQO1 gene with the response of multiple anticancer drugs*. PLoS genetics, 2021. **17**(8): p. e1009732.
33. Sakolish, C., et al., *Tissue-engineered bone tumor as a reproducible human in vitro model for studies of anticancer drugs*. Toxicological Sciences, 2020. **173**(1): p. 65-76.
34. House, J.S., et al., *Low-Dose Silver Nanoparticle Surface Chemistry and Temporal Effects on Gene Expression in Human Liver Cells*. Small, 2020.
35. House, J. and A. Motsinger-Reif, *Fibrate pharmacogenomics: expanding past the genome*. PHARMACOGENOMICS, 2020.
36. Gonzalez-Nahm, S., et al., *Associations between maternal cadmium exposure with risk of preterm birth and low after birth weight effect of mediterranean diet adherence on affected prenatal outcomes*. Toxics, 2020. **8**(4): p. 90.
37. Tam, H.W., et al., *C/EBP β suppresses keratinocyte autonomous type 1 IFN response and p53 to increase cell survival and susceptibility to UVB-induced skin cancer*. Carcinogenesis, 2019. **40**(9): p. 1099-1109.
38. Sai, K., et al., *Necroptosis mediators RIPK3 and MLKL suppress intracellular Listeria replication*

- independently of host cell killing*. Journal of Cell Biology, 2019. **218**(6): p. 1994-2005.
39. Onel, M., et al., *Grouping of complex substances using analytical chemistry data: A framework for quantitative evaluation and visualization*. PloS one, 2019. **14**(10): p. e0223517.
 40. House, J.S., et al., *Cadmium exposure and MEG3 methylation differences between Whites and African Americans in the NEST Cohort*. Environmental epigenetics, 2019. **5**(3): p. dvz014.
 41. Henriquez, A.R., et al., *Ozone-induced dysregulation of neuroendocrine axes requires adrenal-derived stress hormones*. Toxicological Sciences, 2019. **172**(1): p. 38-50.
 42. Grimm, F.A., et al., *Multi-dimensional in vitro bioactivity profiling for grouping of glycol ethers*. Regulatory Toxicology and Pharmacology, 2019. **101**: p. 91-102.
 43. Burnett, S.D., et al., *Population-based toxicity screening in human induced pluripotent stem cell-derived cardiomyocytes*. Toxicology and applied pharmacology, 2019. **381**: p. 114711.
 44. Wyss, A.B., et al., *Raw milk consumption and other early-life farm exposures and adult pulmonary function in the Agricultural Lung Health Study*. Thorax, 2018. **73**(3): p. 279-282.
 45. Venkatratnam, A., et al., *Population-based dose–response analysis of liver transcriptional response to trichloroethylene in mouse*. Mammalian genome, 2018. **29**: p. 168-181.
 46. Sakolish, C., et al., *Technology transfer of the microphysiological systems: a case study of the human proximal tubule tissue chip*. Scientific reports, 2018. **8**(1): p. 14882.
 47. Messenger, Z.J., et al., *C/EBP β deletion in oncogenic Ras skin tumors is a synthetic lethal event*. Cell Death & Disease, 2018. **9**(11): p. 1054.
 48. House, J.S., et al., *Periconceptional maternal mediterranean diet is associated with favorable offspring behaviors and altered CpG methylation of imprinted genes*. Frontiers in cell and developmental biology, 2018. **6**: p. 107.
 49. Grimm, F.A., et al., *A human population-based organotypic in vitro model for cardiotoxicity screening*. Altex, 2018. **35**(4): p. 441.
 50. House, J.S., et al., *Early-life farm exposures and adult asthma and atopy in the Agricultural Lung Health Study*. Journal of Allergy and Clinical Immunology, 2017. **140**(1): p. 249-256. e14.
 51. House, J.S., et al., *A pipeline for high-throughput concentration response modeling of gene expression for toxicogenomics*. Frontiers in genetics, 2017. **8**: p. 168.
 52. House, j., et al., *Vagal Innervation is Required for Pulmonary Function Phenotype in Htr4^{-/-} Mice*. Am J Physiol Lung Cell Mol Physiol, 2017.
 53. Henriquez, A., et al., *Adrenal-derived stress hormones modulate ozone-induced lung injury and inflammation*. Toxicology and applied pharmacology, 2017. **329**: p. 249-258.
 54. London, S., et al., *House dust endotoxin levels are associated with adult asthma in the agricultural lung health study*, in A106. EPIDEMIOLOGY AND RISK FACTORS OF ASTHMA: FROM THE CRIB TO ADULTHOOD. 2016, American Thoracic Society. p. A2781-A2781.
 55. House, J.S., et al., *Genetic variation in HTR4 and lung function: GWAS follow-up in mouse*. The FASEB Journal, 2015. **29**(1): p. 323.
 56. Graves, J.P., et al., *Quantitative polymerase chain reaction analysis of the mouse Cyp2j subfamily: Tissue distribution and regulation*. Drug Metabolism and Disposition, 2015. **43**(8): p. 1169-1180.
 57. London, S.J., et al., *ADAM19 and HTR4 variants and pulmonary function: cohorts for heart and aging research in genomic epidemiology (CHARGE) consortium targeted sequencing study*. Circulation: Cardiovascular Genetics, 2014. **7**(3): p. 350-358.
 58. Thompson, E.A., et al., *C/EBP α expression is downregulated in human nonmelanoma skin cancers and inactivation of C/EBP α confers susceptibility to UVB-induced skin squamous cell carcinomas*. Journal of investigative dermatology, 2011. **131**(6): p. 1339-1346.
 59. House, J.S., *Simultaneous Removal of C/EBP α and C/EBP β Reveals Their Critical Roles in Sebocyte and Keratinocyte Differentiation*. 2011, North Carolina State University.
 60. House, J.S., et al., *C/EBP α and C/EBP β are required for sebocyte differentiation and stratified*

- squamous differentiation in adult mouse skin*. PLoS One, 2010. **5**(3): p. e9837.
61. Ewing, S.J., et al., *C/EBP β represses p53 to promote cell survival downstream of DNA damage independent of oncogenic Ras and p19Arf*. Cell Death & Differentiation, 2008. **15**(11): p. 1734-1744.
 62. Lee, E.Y., et al., *Race/Ethnicity-Stratified Fine-Mapping of the MHC Locus Reveals Genetic Variants Associated with Late-Onset Asthma*. Frontiers in Genetics. **14**: p. 1173676.
 63. *Adrenal stress hormone regulation of hepatic homeostatic function after an acute ozone exposure in Wistar-Kyoto male rats*.

[GOOGLE SCHOLAR](#)