

CURRICULUM VITAE

DARRYL BRICE HOOD



Dr. Darryl B. Hood is a nationally recognized expert in the area of environmental health and toxicology with a focus on the negative effects of exposure to the environmental contaminants on the developing fetus. He is particularly interested in subsequent effects on learning, memory and behavior in offspring that were exposed *in utero*. He was recently re-appointed for a three-year term to the US EPA Science Advisory Board, Exposure and Human Health Committee to evaluate the feasibility of a new framework for risk-assessment. Concurrently, he serves as a member of the NIH/NIEHS-Environmental Health Sciences Review Committee. He graduated from Johnson C. Smith University with a B.S. (cum laude) in Biology and Chemistry. He matriculated at Quillen College of Medicine of East Tennessee State University earning a Ph.D. in Biochemistry. Dr. Hood completed 4-yrs of postdoctoral training in Biophysics and Molecular Toxicology funded as a National Science Foundation E.E. Just fellow in the Center in Molecular Toxicology, Vanderbilt University School of Medicine. Following this postdoctoral fellowship he accepted a tenure-track faculty position at Meharry Medical College where he ascended to the rank of tenured Professor in the Department of Neuroscience and Pharmacology. Dr. Hood's laboratory has been investigating and characterizing the health effects of polycyclic aromatic hydrocarbons exposure using various exposure regimens for nearly two decades. The initial project at Meharry Medical College entitled "Acute and Sub-chronic Toxicity of Benzo(a)pyrene and Fluoranthene in F-344 rats," was funded at the level of 2.4 million dollars by the Minority Health Professions Foundation and Agency for Toxic Substances and Disease Registry. This project generated considerable interest from environmental regulatory agencies and a competitive renewal was written in 1997 entitled "Multigenerational Effects of Inhaled B(a)P on Development" and was subsequently funded through 2002 at the level of 2.1 million dollars. These projects served as the impetus for the development of an independent, investigator-initiated research program where the long-term goal was to determine the operative mechanisms in environmental exposure-induced dysregulation of development of central nervous system structures critical for learning and memory. A grant entitled "Environmental Ah Receptor Agonists and Cognition" funded Dr. Hood's studies at the level of 1.9 million dollars from 2000 to 2006 and was a part of a larger 5.4 million dollar Meharry Medical College initiative sponsored by the Specialized Neuroscience Research Program (SNRP) of the National Institute of Neurological Diseases and Stroke. Awards from the Research Centers in Minority Institutions were also key to the establishment of Dr. Hood's environmental neurotoxicology research focus.

The impact of ongoing research conducted in Dr. Hood's laboratory in the College of Public Health at The Ohio State University utilizing animal models is expected to contribute to an understanding of the etiology of a number of environmental-exposure influenced disorders such as environmental exposure-induced autism spectrum disorder, male reproductive dysfunction, low birth weight and adverse pregnancy outcomes in infants and children living in communities affected by sources of pollution. Thus far, studies from Dr. Hood's laboratory have provided mechanistic data that support associations between specific environmental exposures and central nervous system and reproductive dysfunction. From a cumulative risk-assessment perspective, data from Dr. Hood's laboratory contributes to the database that addresses why low income and medically underserved populations that work, reside, attend school, and play in environmentally contaminated neighborhoods have disproportionate adverse cognitive health outcomes.

Dr. Hood was the founding Principal Investigator of the four million dollar National Institutes of Environmental Health Sciences (NIEHS) funded Meharry Medical College-Vanderbilt University School of Medicine ARCH Initiative. The title of this program project-like activity was "*Mechanisms of Polycyclic Aromatic Hydrocarbon Toxicity*". The research conducted under this consortium contributed to the scientific database that the EPA is currently using to reassess ambient levels of benzo(a)pyrene from smokestacks, etc. Such re-assessments will form the basis of prevention and intervention strategies that will lead to **public policy changes** that will serve to decrease the adverse health effects associated with environmental exposures.

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DARRYL BRICE HOOD

BIOGRAPHICAL DATA

Work Address: Division of Environmental Health Sciences
College of Public Health and
Department of Neuroscience
College of Medicine
The Ohio State University
408 Cunz Hall
1841 Neil Avenue
Columbus, OH 43210-1351
614.247.4941 (office)
614.247.4973 (lab)

Home Address: 713 Jessica Taylor Dr.
Madison, TN 37115

Place of Birth: Charlotte, North Carolina

Married Twins (Ashton & Alexis)

EDUCATION

1981-1985	Johnson C. Smith University, Charlotte, NC Biology/Chemistry	B.S.
1985-1990	East Tennessee State University, James H. Quillen College of Medicine, Johnson City, TN Major Professor: David A. Johnson, Ph.D. Biomedical Science/Biochemistry	Ph.D.
Aug. 1990- March 1994	Vanderbilt University School of Medicine Dept. of Biochemistry and Center in Molecular Toxicology, Nashville, TN Biophysics/ Molecular Toxicology	Postdoc
March 1994- August 2013	Department of Neuroscience and Pharmacology Center for Molecular and Behavioral Neuroscience Meharry Medical College 1005 D B Todd Blvd Nashville, TN 37208	Professor
August 2013- Present	Tenured Associate Professor Division of Environmental Health Sciences College of Public Health, The Ohio State University	

SPECIALTIES BY TRAINING AND EXPERIENCE

- 1) Inhalation Toxicology (prenatal environmental contaminant exposure models of developmental neurological dysfunction)
- 2) Developmental neurobiology (hippocampus and somatosensory cortex)
- 3) Behavioral neurobiology (development of structure-specific paradigms)
- 4) Environmental and biochemical toxicology (Nitroxides, PAH's and HAH's)
- 5) Dispersion modeling of PAH's in environmental justice communities
- 6) Structural biology, protein structure and function
- 7) Molecular and cell biology
- 8) Environmental-exposure health assessment questionnaire development
- 9) Modeling exposures across lifetime using *public health exposome* approach

EDITORIAL BOARD AND PEER-REVIEW ACTIVITIES

1995-Present	Member, Society of Toxicology
2000-Present	Member, Society for Neuroscience
2001-Present	Reviewer, <i>Toxicol. Appl. Pharm.</i>
2002-Present	Reviewer, <i>Tox. Sci.</i>
2005-Present	Reviewer, <i>NeuroToxicology</i>
2009-Present	Editorial Board, <i>NeuroToxicology</i>
2009-Present	Reviewer, <i>Toxicology</i>
2010-Present	Editorial Board -ISRN, Toxicology
2011-Present	Reviewer, <i>Chemosphere</i>
2011-Present	Reviewer, <i>Neurochemistry International</i>
2011-Present	Reviewer, <i>Toxicology Letters</i>
2012-Present	Reviewer, <i>Environmental Practice</i>
2012-Present	Reviewer, <i>Environmental Health Perspectives</i>

POSITIONS AND HONORS

1981-1985	NIGMS MBRS/MARC Honors Undergraduate Research Trainee
1986-1990	NIGMS MARC Pre-doctoral Fellow
1990-1994	NSF Minority (EE Just) Postdoctoral Fellow, Center in Molecular Toxicology, Vanderbilt University School of Medicine, Nashville, TN
1990-1994	NSF Minority (EE Just) Postdoctoral Fellowship
2000	Alpha Phi Alpha Fraternity Inc. Merit Award (Chi Chapter); Mentorship Award, MMC, School of Graduate Studies and Research.
2001	Chairman, NINDS Health Disparities Working Group on Cognitive and Emotional Health in Children, Environmental and Pharmacological Pollutants.
2003	Appointed to the National Environmental Justice Advisory Council, (NEJAC) Environmental Protection Agency, Washington, D.C.
2005	Appointed to the ATSDR environmental exposure assessment team, Anniston, AL
2007	Appointed to CDC-ATSDR Environmental Health, Health Services and Toxicology Research Program Research Advisory Committee
2008	Adjunct Associate Professor, Vanderbilt University School of Medicine, Department of Pharmacology, Nashville, TN
2009-Present	Appointed to NIEHS-Environmental Health Sciences Review Committee (EHSRC)

2009-Present Appointed to the Environmental Protection Agency-Science Advisory Board (SAB); Exposure and Human Health Committee (EHC)

2010-Present Director, Initiative for Environmental-Health Disparities and Medicine

2011-Present Director, Environmental Context of Health Disparities Core
3P20 MD000516-07S1

2012- Present Re-appointed to the Environmental Protection Agency-Science Advisory Board (SAB); Exposure and Human Health Committee (EHC)

March, 2013 Finalist for *Toxicological Sciences* Best 2012 Article Award in Developmental And Reproductive Toxicology. SOT Annual Meeting, San Antonio, TX

PRE AND POSTDOCTORAL FELLOWSHIPS

NIGMS, Minority Access to Research Careers Pre-doctoral Fellowship Award

“Effects of Ozone and Nitrogen Dioxide on Human Lung Proteins”

1987 - 1988 **\$13,748**

1988 – 1989 **\$14,060**

NSF, Behavioral, and Social Sciences: (E. E. Just) Minority Postdoctoral Research Fellowship Award

“Comparative Studies with Native and Site-Directed Reactive Center Mutants of Alpha-1-Protease Inhibitor using ¹H-Nuclear Magnetic Resonance Spectroscopy”

May 1991 - May 1994 **\$105,300**

PROFESSIONAL SOCIETY MEMBERSHIPS

American Association for the Advancement of Science	(1990)
Society of Toxicology	(1994)
American Chemical Society	(1999)
New York Academy of Sciences	(1999)
Society for Neuroscience	(2000)

RECENT INVITED PRESENTATIONS

Howard University School of Medicine, Department of Pharmacology Washington, D.C. (November 15, 2006)

University of Medicine and Dentistry of New Jersey; Robert-Wood Johnson School of Medicine: Environmental and Occupational Safety and Health Institute, Piscataway, NJ: (March 12, 2007)

Environmental Health, Health Services and Toxicology Research Program Colloquium, Atlanta, GA: (September 11, 2007)

National Medical Association Annual Meeting, OB-GYN Section, Meharry Symposium, Honolulu, HI (August 6, 2007)

23rd Annual International Neurotoxicology Conference, San Antonio, TX: (November 4-8, 2007)

Marino Autism Research Initiative Scientific Symposium, Environment and Autism Etiology: ***Molecular Dysfunction Following Environmental Intoxication***. Vanderbilt Kennedy Center for Research on Human Development, Nashville, TN: (April 22, 2008)

National Medical Association Annual Meeting, Pediatric Section, Symposium on Environmental Exposures Affecting Our Children: ***Outdoor Pollution, Environment and Children's Health***. Atlanta, GA: (July 28, 2008)

Society of Toxicology Annual Meeting: Developmental Basis of Disease Symposium; ***Disparities in learning, memory and behavior as a result of environmental contaminant exposure during gestation***. Baltimore, MD (March 25, 2009)

Grass Travelling Scientist, Society for Neuroscience-Moravian College, Muhlenburg College, LaFayette College, Lehigh University (November 7-10, 2009)

Fisk University Environmental Health and Sustainability Forum Featured Speaker; ***Blueprint for Preventing Environmental Injustice***. (February 28, 2010)

University of Missouri School of Medicine-Kansas City; Department of Pharmaceutical and Toxicological Sciences: ***PAH Exposure-Induced Modulation of Development, Plasticity and Behavior***. (September 30, 2010)

Meharry Medical College, Comprehensive Center for Health Disparities, Meharry Clinical Translational Center (MeTRC) Seminar Series; ***Gene x Environment Interactions Manifest as Deficits in CNS Development, Plasticity and Behavior*** (October 13, 2010)

Tennessee State University, Department of Biology, Minority Access to Research Careers (MARC) Regional Meeting; ***PAH Exposure-Induced Modulation of Development, Plasticity and Behavior*** (December 8, 2010)

Columbia University Mailman School of Public Health, Department of Environmental Health Sciences, NIEHS Children's Environmental Health Center; ***Polycyclic Aromatic Hydrocarbon Exposure-Induced Effects on CNS Development, Plasticity and Behavior***. (March 17, 2011)

Fordham University School of Law, Law and Neuroscience Forum, New York, NY; ***Environmental Justice and Risk Communication Issues Relevant to Susceptible Populations in the New Millenium***. (September 27, 2011)

Society for Neuroscience Annual Meeting, Washington, D.C., Nanosymposium Talk, Developmental Synapse Formation; ***PAH Particles Perturb Prenatal Processes and Phenotypes*** (November 14, 2011)

National Institutes of Health/National Institute on Aging Intramural Seminar Series, Bay view Campus-The Johns-Hopkins University, Baltimore, MD ***PAH Particles Perturb Prenatal Processes and Phenotypes*** (February 24, 2012)

Society of Toxicology Annual Meeting: Developmental Neurotoxicology Symposium; San Francisco, CA ***PAH Particles Perturb Prenatal Processes and Phenotypes: Protection from deficits in object discrimination afforded by dampening of brain-oxidoreductase following in utero exposure to inhaled benzo(a)pyrene.*** (March 18, 2012)

2012 State of Environmental Justice in America National Conference, Chair, Session on Health Disparities, Washington, DC ***Risk-communication strategies: Blueprint for preventing environmental injustice in susceptible populations*** (April 3-5, 2012)
Guest Editor: Proceedings as a Periodical Supplement to JHCPU.

National Institute of Minority Health and Health Disparities, Meharry Medical College Research Center of Excellence, New Orleans, LA ***Environmental Context of Health Disparities Investigator Meeting*** (May 3-4, 2012)

M. Alfred Haynes Research Training Institute for Social Equity, Nashville, TN Session on Environmental Health, Vanderbilt Marriott, Nashville, TN ***The Impact of Environmental Factors on Chronic Diseases*** (May 17, 2012)

Division of Environmental Health Sciences, College of Public Health, The Ohio State University, Columbus, OH ***Towards Advancing the Environmental Health Sciences;: From Sequencing The Human Genome to Sequencing the Public Health Exposome.*** (Oct 16, 2012)

Fisk University Environmental Health and Sustainability Forum Featured Speaker; ***Quantitative Assessment of Sensory Function in a Minority Pediatric Population.*** (March 23, 2013)

National Institute of Minority Health and Health Disparities, National Health Disparities Summit Research Center of Excellence, Gaylord International Resort, MD ***The Public Health Exposome*** (March 27, 2013)

National Institute of Minority Health and Health Disparities, Meharry Medical College Research Center of Excellence, Knoxville, TN ***Environmental Context of Health Disparities Investigators Meeting*** (April 25-26, 2013)

D. RESEARCH SUPPORT (ACTIVE)

3P20 MD000516-07S1 (Juarez) 12/1/2011-11/30/2013 2.4 cal months
NIMHD

Environmental Context of Health Disparities

The goal of this project is to use a trans-disciplinary/ecological or systems approaches that move beyond conventional exposure-disease paradigms towards creating an environmental core that takes into consideration effects of the built, social, and policy environments. This core focuses on developing targeted interventions, programs to inform policy towards protecting the public's health from environmental exposure.

Role: Co-Director

Simons Foundation (Levitt) NCE 7/1/2009-6/30/2014 1.2 cal months

Behavioral and Physiological Consequences of Disrupted MET Signaling

The goal of this study was to determine how gene-environment interactions contribute to the etiology of increasing the risk for autism spectrum disorder.

Role: Co-I

RESEARCH SUPPORT (PLANNED)

Continuous Submission

1R01ES--(Hood) 12/1/2014-11/30/2019 4.8 cal months

Assessment of Sensory Function in a Pediatric Infant Cohort

This is a cross-sectional environmental and developmental screening translational study. We propose use our 54-item environmental exposure questionnaire that was developed, validated, calibrated and tested recently (Chen et al., 2013) to identify a vulnerable inner-city pediatric population. Recruited infants will undergo quantitative assessments of sensory function using a novel non-invasive event related potential methodology to identify exposure-induced behavioral **endophenotypes** in this minority infant population.

1P01ES--(Hood) 11/1/2014-10/30/2019 3.6 cal months

NIEHS

Ohio State Research in Children's Environmental Health (OSRiCEH)

The goal of this project will be to examine an integrated environmental health information systems paradigm that will allow for examination of complex interactions between social, natural and built environments with regard to the health status of underserved children in central Ohio.

RESEARCH SUPPORT (COMPLETED)

NRC-27-10-515 (Hood) 9/1/2010-9/30/2013
Nuclear Regulatory Commission

Long-term Educational and Research Interventions for the NRC

The ultimate goal of activities conducted under this award were to model the systemic consequences of nuclear fallout during development using ¹⁴C-B(a)P-aerosol exposure, finite element analysis and homogenization. These activities are conducted with Y12 National Security Complex scientists.

1S11ES014156-05 (Hood) 7/1/2006-6/30/2012
NIEHS

Mechanisms of Polycyclic Aromatic Hydrocarbon Toxicity

The goal of this ARCH research project was to test mechanistic hypotheses related to the overarching hypothesis that prenatal B(a)P exposure leads to a brain burden of metabolites that result in later-life neuronal and behavioral deficit phenotypes. This project has served as the portal for acquiring the necessary preliminary data leading to the present R01 submission.

1R56ES017448-01A1 (Hood) 9/1/2010-8/30/2012
NIEHS

Mechanisms of Inhaled B(a)P-induced Neurotoxicity

The goal of this high-impact, short-term award was to acquire the preliminary data for the new R01 submission.

U54NS041071 (Hood) 9/01/00-8/30/06
NIH/NINDS

Environmental Ah Receptor Agonists and Cognition

The goal of this study was to show that prenatal 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin (dioxin) and benzo(a)pyrene exposure at certain levels leads to deficits in synaptic plasticity mechanisms and behavior.

U54GM08037-02 (Hood) 7/01/01-6/30/03
NIH/NIGMS

Effects of Prenatal Dioxin on CNS Developmental Gene Expression

The goal of this study was to determine the how acute exposures to dioxin during gestation influences the expression of genes involved in growth and differentiation in the developing brain.

U50ATU398948-10 Nyanda (PI) 10/01/94-9/30/02
ATSDR/MHPF

Multigenerational Effects of Benzo(a)pyrene on Development

The goal of this study was to determine the multigenerational effects of B(a)P on development via the nose-only inhalation route of exposure.

Role: Co-PI

K14ES00287-05 (Hood)
NIEHS

10/1/94-9/30/01

Effects of NO₂ Derived Polypeptide Adducts

The goal of this study was to determine the effects of derivatization by NO₂ on polypeptide function.

COMMITTEE ASSIGNMENTS: SERVICE AND LEADERSHIP

Name	Position	Since	Freq.	Classification
1. NEJAC (EPA)	Member	2000	Quarterly	National
2. USEPA; Science Advisory Board;	Member	2010-	Present	National
3. NIEHS; EHS Rev Committee	Member	2009-	Present	National
4. Board of Trust (Institutional Advancement)	Council Rep	2002	Quarterly	College
5. Board of Trust (Health Affairs)	Council Rep	2012	Quarterly	College
6. Curriculum Redesign	Member	2003	Weekly	SOM
7. App. Prom & Tenure (Neuroscience and Pharmacology)	Chair	2009	Called	SOM
8. LCME (Research)	Sub-com.	2012	Called	SOM
9. IACUC	Member	2001	Monthly	SOM
10. IACUC	Chair	2005	Monthly	SOM
11. Faculty Senate	B-Scientist	1999	Monthly	College
12. Faculty Council	Secretary	01-11	Monthly	SOM
13. Faculty Council	Chair	2012-	Monthly	SOM
14. Presidential Transition	Member	2006	Monthly	SOM
15. Institutional Safety	Member	2005	Quarterly	College
16. SACS-Self (Research)	Member	1997	Called	College
17. VP of Research Search Com	Member	2008	Called	College
18. Exe. Adv. Comm for Res.	Member	2009	Monthly	College

TEACHING ACTIVITIES (1995-2013)

Course # & Title	# Students	# Lectures
MSPH /PHAR 753 Occupational Toxicology*	5	10
PHAR 708 Medical Pharmacology	80	3
PHAR 701 Dental Pharmacology	72	3
PHAR 702 Pharmacology Seminar*	15	0
Occ & Envir. Med. Residency Grand Rounds	4	2
Occ. & Envir. Med. Residency Teaching Rounds	8	2
PHYS 702 Physiology Seminar*	4	0
PHAR 722 Neuropharmacology`	5	3
PHAR 345 Cellular and Molecular Neuro. *Course Coordinator	5	3

Curriculum Development- School of Graduate Studies and Research, Meharry Medical College- Developed the ORIGINAL toxicology track in the Ph.D. Program in Pharmacology 1997 along with Nasser Zawia, Ph.D. (currently the Dean, Graduate School, Biomedical Sciences, University of Rhode Island)

SELECTED PEER-REVIEWED PUBLICATIONS

1. Russell, H.R., and Hood, D.B. (1985) 5-Substituted Indoles via Sodium Indoline 2-Sulfonate: A Re-examination. *Org. Prep. Proced. Int.* 17, 391-399.

2. Hood, D.B., and Gettins, P. (1991) A $^1\text{H-NMR}$ Probe for Mobility in the Reactive Center Loops of Serpins: Spin-Echo Studies with Native and Modified Forms of Ovalbumin and Alpha-1-Proteinase Inhibitor. *Biochemistry* **30**, 9054-9060.
3. Hood, D.B., Gettins, P., and Johnson, D.A. (1993) Reaction of Nitrogen Dioxide with Proteins: Effects on Activity and Immunoreactivity with Alpha-1-Proteinase Inhibitor and Implications for NO_2 Mediated Polypeptide Degradation. *Arch. Biochem. Biophys.* **304**, 17-26.
4. Hood, D.B., Huntington, J.A. and Gettins, P.G.W. (1994) α_1 Proteinase Inhibitor Variant T345R. Influence of P14 Residue on Substrate and Inhibitory Pathways. *Biochemistry*. **33**, 8538-8547.
5. Ramesh, A., Inyang, F., Hood, D.B., and Knuckles, M.E. (2000) Aryl Hydrocarbon Hydrolase activity in F-344 rats subchronically exposed to Benzo(a)pyrene and Fluoranthene through diet. *J. Biochem. & Mol. Tox.* **14**, (3) 155-161.
6. Townsel, JG and Hood, DB (2000). A Challenge for the Next Millenium: Eliminating Health Disparities and Achieving Work Force Diversity. *Environ. Health Perspec.* **108**, A438-A439.
7. Hood, D.B., Nayyar, T., Greenwood, M., Ramesh, A., and Inyang, F. (2000) Modulation in the Developmental Expression Profile of Sp1 Subsequent to Transplacental Exposure of Fetal Rats to Desorbed Benzo(a)pyrene Following Maternal Inhalation. *Inhal. Tox.* **12** 511-535.
8. Ramesh, A., Inyang, F., Greenwood, M., and Archibong, A. and Hood, D.B. (2001) Toxicokinetics of Inhaled Benzo(a)pyrene; Plasma and Lung Bioavailability. *Inhal. Tox* **13**, 533-555.
9. Ramesh, A., Inyang, F., Hood, D.B. , Archibong, A. Knuckles,, M., and Nyanda, A. (2001) Metabolism, bioavailability, and toxicokinetics of Benzo(a)pyrene in F-344 rats following oral administration. *Exp. Toxic. Pathol.* **53**, 275-290.
10. Ramesh, A., Hood, D.B. Inyang, F., Greenwood, M., Archibong, A. Knuckles, M., and Nyanda, A. (2002) Comparative Metabolism, Bioavailability and Toxicokinetics of Benzo(a)pyrene in Rats after Acute Oral, Inhalation, and Intravenous Administration: Implications for Environmental and Occupational Exposures to High Doses. *Polycyclic Aromatic Hydrocarbons.* **22**, 969-980.
11. Nayyar, T., Zawia, N.H., and Hood, D.B., (2002) Transplacental Effects of 2,3,7,8-Tetrachlorodibenzo-p-dioxin on the Temporal Modulation of Sp1 Developmental Expression Profiles in the Rat Neocortex and Cerebellum. *Exp. Toxic. Pathol.* **53**, 461-468.
12. Archibong, A. E., Inyang, F., Ramesh, A., Greenwood, M., Nayyar, T., Kopsombut, P., Hood, D.B., and Nyanda, A.M. (2002) Alteration of pregnancy related hormones and fetal survival by inhaled benzo(a)pyrene. *Reprod. Toxicol.* **16**, 801-808.

13. Wang, Y., Cao, Z., **Hood, D.B.**, and Townsel, J. G. (2003) Construction of Genomic Libraries in Lambda Vectors. In: *Methods in Molecular Biology*, Vol. 235: E.Coli Plasmid Vectors. Edited by N. Cassali and A. Preston. Humana Press Inc. pp 153-168.
14. Archibong, A. E., Inyang, F., Ramesh, A., Kopsombut, P., **Hood, D.B.**, and Nyanda, A.M. (2003) Disruption of Testicular Steriodogenesis and Epididymal Function by Inhaled Benzo(a)pyrene. *Reprod. Toxicol.* 18, 325-336.
15. Wu, J., Ramesh, A., Nayyar, T., Wormley, D., Greenwood, M., and **Hood, DB** (2003) Assessment of Metabolites and AhR and CYP1A1 mRNA Expression Subsequent to Prenatal Exposure to Inhaled Benzo(a)pyrene. *Int. J. Dev. Neuroscience* 21, (6) 333-346.
16. Nayyar, T., Wu, J., and **Hood, D.B.** (2003) Downregulation of Hippocampal NMDA Receptor Expression By Prenatal Exposure to Dioxin." *Cellular and Molecular Biology* 49 (8) 1357-1362.
17. Wormley, D, Ramesh, A. and **Hood, DB**. (2004) Environmental Contaminant-Mixture Effects on CNS Development, Plasticity and Behavior. *Tox. Appl. Pharm.* 197 (1) 49-65.
18. Ramesh, A., Walker, S., **Hood, D.B.**, Guillen, M., Schneider, K., and Weiland, E. (2004) Bioavailability and Risk Assessment of Orally Ingested Polycyclic Aromatic Hydrocarbons. *International Journal of Toxicology* 23: 301-333.
19. Wormley, DW, Chirwa, SS, Nayyar, T, Harris, E and **Hood, DB** (2004) Inhaled Benzo(a)pyrene Impairs Long-Terms Potentiation in the Rat Dentate Gyrus. *Cellular and Molecular Biology. Biology* 50, 715-721.
20. **Hood, D.B.**, Woods, L., Brown, L.A. and Ebner, F.F. (2006) Gestational 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin exposure effects on sensory cortex function. *NeuroToxicology* 27(6): 1032-1042.
21. Brown, LA., Khoubouei, H., Goodwin, SJ., Irvin-Wilson, C., Ramesh, A, Sheng, L., McCallister, M., Jiang, GT., Aschner, M., and **Hood, DB**. (2007) Downregulation of Early Ionotrophic Glutamate Receptor Subunit Developmental Expression as a Mechanism for Observed Plasticity Deficits Following Gestational Exposure to Benzo(a)pyrene. *NeuroToxicology* 28(5):965-978.
22. Harris DL, **Hood DB**, and Ramesh A. (2008) Vehicle-dependent disposition kinetics of fluoranthene in Fisher-344 rats. *Int. J. Environ. Res. Public Health* 5(1):41-8.
23. Ramesh A, Inyang F, Lunstra DD, Niaz MS, Kopsombut PM, Jones KM, **Hood DB**, Hills ER, and Archibong AE. (2008) Alteration of fertility indices in adult F-344 rats by subchronic exposure to inhaled benzo(a)pyrene. *Exp. Toxic. Pathol*, 60(4-5): 269-80.
24. McCallister MM, Maguire M, Ramesh R, Sheng L, Qiao A, Khoshbouei H, Aschner M, Ebner FF and **Hood DB** (2008) Prenatal Exposure to Benzo(a)pyrene Impairs Later-Life Cortical Neuronal Function. *NeuroToxicology* 29, 846-854.

25. Ford GD, Ford BD, Steele EC Jr, Gates A, Hood DB, Matthews MA, Mirza S, Macleish PR. (2008) Analysis of transcriptional profiles and functional clustering of global cerebellar gene expression in PCD3J mice. *Biochem Biophys. Res. Commun.* Dec 12; 377(2):556-61.
26. **Hood, DB**, Ramesh, A and Aschner, M (2009) Polycyclic Aromatic Hydrocarbons: Exposure from Emission Products and from Terrorist Attacks on US Targets-Implications for Developmental Central Nervous System Toxicity In: *Handbook of the Toxicology of Chemical Warfare Agents*. Vol. 3; Edited by Ramesh Gupta, Academic Press (London) pp.229-244.
27. Harris DL, Washington MK., **Hood DB**, Roberts LJ II, and Ramesh A. (2009) Dietary fat-influenced development of colon neoplasia in *Apc^{Min}* mouse exposed to benzo(a)pyrene. *Toxicologic Pathology*, 37: 938-946.
28. Stokes SC, **Hood DB**, Zokovitch J, and Close FT (2010) Blueprint for Preventing Environmental Injustice. *Journal of Health Care for the Poor and Underserved*; 21 (2010): 35–52.
29. Sheng L., Ding X, Maguire M, Ferguson, M, Rhoades R, Ramesh A, Aimin Q, Aschner M, Campbell D, Levitt P and **Hood DB**. (2010) Prenatal Polycyclic Aromatic Hydrocarbon Exposure Leads to Behavioral Deficits and Reduced Expression of MET Receptor Tyrosine Kinase. *Toxicol. Sci.* 118:625-634.
30. **Hood DB**, Campbell, D., and Levitt, P. (2011) An Emerging Gene-Environment Interaction Model: Autism Spectrum Disorder Phenotypes Resulting from Exposure to Environmental Contaminants During Gestation. In; *Developmental Neurotoxicology Research: Principles, Models, Techniques, Strategies and Mechanisms* Vol. 1; Edited by Wang, C and Slikker, W (Ed) John Wiley and Sons (London)
31. Hood DB, Ramesh A, Khoshbouei H, Chirwa S, Archibong A. (2011) Developmental toxicity of polycyclic aromatic hydrocarbons, In; *Reproductive and Developmental Toxicology* Vol. 1; Edited by Ramesh Gupta, Elsevier (London). pp. 593-606.
32. Li Zhu, Chadalapaka Gayathri, Ramesh Aramandla, Khoshbouei Habibeh, Maguire Mark, Safe Stephen, Rhoades Raina, Clark Ryan, Jules George, McCallister Monique, Aschner Michael, **Hood DB**. (2012) PAH Particles Perturb Prenatal Processes and Phenotypes: Protection from deficits in object discrimination afforded by dampening of brain-oxidoreductase following *in utero* exposure to inhaled benzo(a)pyrene *Toxicol. Sci* 125, 233-247.
33. Ramesh A, Archibong A, **Hood DB**, Guo Z and Loganathan BG. (2012) Global environmental distribution and human health effects of polycyclic aromatic hydrocarbons. In: *Global trends of persistent organic chemicals*. Edited by Laganathan BG and Lam PK (Ed) Taylor and Francis, Boca Raton, Florida. pp. 97-126.

34. Jules GJ, Pratap S, Ramesh, and **Hood DB (2012)** *In utero* exposure to benzo(a)pyrene predisposes offspring to cardiovascular dysfunction in later-life. *Toxicology* 295, 56-67.
35. Ramesh A, Archibong AE, Huderson AC, Diggs DL, Myers JN, **Hood DB**, Rekhadevi PV, Niaz MS **(2012)** Polycyclic Aromatic Hydrocarbons. In: Veterinary Toxicology, 2nd Edition; Gupta RC (Ed.)
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47. McCallister MM, Jules GE, Maguire M, Ramesh A, Newland MC, **Hood DB**. **(2013)** Identification and characterization of later-life spatial discrimination deficits subsequent to *in utero* exposure to benzo(a)pyrene aerosol. *Toxicol. Sci.* (*in review*)

ABSTRACTS- 164 Total Published

Ph.D. STUDENTS TRAINED

WITH NIGMS PREDOCTORAL FELLOWSHIPS (SPONSORED)

Cassandra Bishop-Robinson

Title: Comparative toxicology of *In Utero* vs. Lactational Exposure of Timed-Pregnant Dams to Dioxin in a Two-Stage Rat Model.

Kimberly Christina Hodge

NIGMS-NIEHS Minority Predoctoral Fellowship- 1 F31 ES05906-05

Title: Mechanisms of Nitrogen Toxicity

Deanna D. Wormley

NIGMS Minority Predoctoral Fellowship- 1 F31 ES05945-05

Title: Mechanisms of PAH/PCB synergism

Salynn K. Johnson

NIGMS Minority Predoctoral Fellowship- 1 F31 ES05946-01

Title: Molecular evaluation of the generational effects of TCDD

WITHOUT FELLOWSHIPS (SPONSORED ON RESEARCH GRANTS)

LaNissa A. Brown

Title: Downregulation of Early Developmental Expression of Glutamate Receptor Subunits Following Gestational Exposure to Benzo(a)pyrene.

Monique M. McCallister

NIEHS Minority Predoctoral Fellowship

Title: Assessing Later-Life Behavioral Phenotypes Subsequent to *in utero* exposure to Benzo(a)pyrene.

George Jules

Title: Benzo(a)pyrene Exposure Induced Dysregulation of Cardiovascular Development
2009-2012

Raina Rhoades

Vanderbilt University School of Medicine, The Brain Institute

MARC Pre-doctoral Fellowship

Title: Elucidation of an Sp Protein Mediated Mechanism for Developmental Neurotoxicity
and Behavioral Phenotypes Resulting from Prenatal Exposure to Inhaled B(a)P aerosol
2008-2011

Ryan Clark

Title: Prenatal Exposure to Benzo(a)pyrene Confers an Enhanced Susceptibility of
Macrophage Membranes to Microbial Infection
2010-Present

COMMITTEES ON INSTRUCTION (Member, but not Chair)

Doctoral Dissertation

1. Kurt Watson
2. Cristy Marrs
3. Jeremy Myers
4. Ashley Fennell
5. Kelly Harris
6. Ashley Huderson
7. Veronica Mackey
8. Brittany Butler
9. Leah Banks
10. Joseph Smith

Ph.D. GRADUATE STUDENTS MENTORED

Cassandra Bishop-Robinson, Ph.D.

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George E. Jules, Ph.D.

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References (available upon request)