

Welcome to the 4th Annual Meeting of the US DOHaD Society



September 8-10, 2019
The Rizzo Center
Chapel Hill, North Carolina



Scientific Chair: Dr. Robert Lane
<http://usdohad.org/>

Sunday September 8th (Full Day Career Seminar for Trainees and Junior Faculty)

8:00 – 9:00 AM Meet and Greet Breakfast (*suggested topic for table conversation; what would you like to get out of today and the meeting in general?*)

Conference Room 108 – “Train-Up” Session (additional registration required)

9:00 – 10:30 AM Not-So-Fast Academic Dating

10:30 – 10:45 AM Coffee Break

10:45 – 12:00 PM Elevator Speech: Your First Impression is your Best and Sometimes Only Opportunity

12:00 – 1:30 PM Lunch (*suggested topic for table conversation; what are the career barriers with which you are dealing?*)

1:30 – 3:00 PM Review of Grantsmanship / Specific Aims Review

3:00 – 3:15 PM Break

3:15 – 5:00 PM General Discussion / Return to the Activity that Mentees would like to Prioritize

7:30 – 9:00 PM US DOHaD Council Business Meeting

DAY 1 Monday September 9th

Magnolia Room – Plenary Sessions

8:00 – 8:10 AM **Welcome & Introduction: Robert Lane, MD, MS**
US DOHAD President
(Professor & Chair, Department of Pediatrics, Associate Dean for Research, Associate Director of Epigenomics, Genomic Science Personalized Medicine Center, Medical College of Wisconsin
Pediatrician in Chief, The Barri L.& David J. Drury Chair in Pediatrics, Children's Hospital of Wisconsin)

8:10 – 8:45 AM **Linda Birnbaum, PhD, DABT, ATS**
(Director, National Institute of Environmental Health Sciences & National Toxicology Program and Principal Investigator)
“Overview of DOHaD and NIEHS Initiatives”

- 8:45 – 9:30 AM **Environmental Toxicology State of the Art**
Cheryl Rosenfeld, DVM, PhD
(Professor, University of Missouri)
“Developmental Exposure to Bisphenol A or Genistein and Effects on the Gut Microbiome-Brain Axis at Adulthood”
- 9:30 – 9:45 AM Coffee Break
- 9:45 – 12:00 PM Environmental Toxicology and Social Disparity Platform Sessions
(10 minutes / 5 minutes questions)
- Abstract 1: (9:45 – 10:00)**
RID57 Megan Horton, PhD
(Assistant Professor, Icahn School of Medicine at Mount Sinai)
“Early Life Dentine Manganese Concentrations and Intrinsic Functional Brain Connectivity in Adolescents and Young Adults”
- Abstract 2: (10:00 – 10:15)**
RID47 Jan Dye, DVM, PhD
(Principal Investigator, US Environmental Protection Agency)
“Differential Metabolic, Thermal and Pulmonary Responses to Early Life Ozone Exposure in Male and Female Rats”
- Abstract 3: (10:15 – 10:30)**
RID19 Cassandra Meakin, MS
(Graduate Research Assistant, University of North Carolina at Chapel Hill)
“Molecular Mechanisms Underlying Inorganic Arsenic (iAS)-Induced Perturbations of the Glucocorticoid Receptor (GR) Pathway in the Human Placenta”
- Abstract 4: (10:30 – 10:45)**
RID13 Sara Pinney, MD
(Assistant Professor, Children’s Hospital of Philadelphia / University of Pennsylvania)
“In Utero Exposure to Gestational Diabetes Alters the Transcriptome and Methylome of Human Fetal Stem Cells”
- Abstract 5: (10:45 – 11:00)**
RID32 Evans Lodge, BA
(MD / PhD Student, Epidemiology, University of North Carolina at Chapel Hill)
“Prenatal Exposure to Neighborhood Crime and Offspring Blood Pressure from 0-3 Years of Age”

- Abstract 6: (11:00 – 11:15)**
RID6 Chandra Jackson, PhD
(Earl Stadtman Investigator / Epidemiologist, National Institute of Environmental Health Sciences)
“Racial/Ethnic Disparities in the Relationship between Traumatic Childhood Experiences and Poor Sleep in Adulthood
- Abstract 7: (11:15 – 11:30)**
RID10 Xiaoxia Han, PhD
(Assistant Scientist, Henry Ford Health System)
“Race Specific Impact of Socioeconomic Status Patterns in Overweight and Obesity in Children”
- Abstract 8: (11:30 – 11:45)**
RID40 Helmut Zarbl, PhD
(Director of Environmental & Occupational Health Sciences Institute; Chair & Professor of Environmental & Occupational Health, Rutgers University)
“Healthy Environment and Endocrine Disruptor Strategies (HEEDS.ORG)”
- Abstract 9: (11:45 – 12:00)**
RID20 Emily Harville, PhD
(Associate Professor, Tulane University)
“Multigenerational Studies on Child Cardiometabolic Health: A Systematic Review and Rationale for the Across Generations in the South (AGES) Heart Study”
- 12:00 – 1:00 PM Networking Lunch
- 1:00 – 1:45 PM **Epigenetic Mechanism State of the Art Speaker**
Robert Waterland, PhD
(Professor, Pediatrics – Nutrition, Molecular & Human Genetics, Baylor College of Medicine)
“Nutritional Influences on Developmental Epigenetics and subsequent Adult Onset Chronic Disease”
- 1:45 – 2:00 PM Break
- 2:00 – 3:45 PM Pregnancy, Perinatal Programming and Inflammation Platform Sessions (10 minutes / 5 minutes questions)

- Abstract 10: (2:00 – 2:15)**
RID29 Paula Chandler-Laney, PhD
(Assistant Professor, University of Alabama at Birmingham)
“Adiposity Among 4-10-Year-Old Children Born to Women with Gestational Diabetes versus Non-Diabetic Obesity”
- Abstract 11: (2:15 – 2:30)**
RID3 Phu Tran, PhD
(Assistant Professor, University of Minnesota)
“Cord Blood Derived Exosomal Contactin-2 and BDNF Biomarkers for Brain Health of Neonates at Risk for Iron Deficiency”
- Abstract 12: (2:30 – 2:45)**
RID7 Kaela Varberg, PhD
(Postdoctoral Fellow, University of Kansas Medical Center)
“ASCL2 Coordinately Regulates Differentiation of Trophoblast Lineages During Hemochorial Placenta Development”
- Abstract 13: (2:45 – 3:00)**
RID27 Thea Golden, PharmD, PhD
(Postdoctoral Fellow, University of Pennsylvania)
“Pancreatic Inflammation in the Neonatal Rat Following IUGR”
- Abstract 14: (3:00 – 3:15)**
RID51 Mina Desai, PhD
(Associate Professor & Director of Perinatal Research, LA BioMed at Harbor-UCLA Medical Center)
“Inflammation and saturated fatty acid impair hypothalamic neuroprogenitor cells mitochondrial function”
- Abstract 15: (3:15 – 3:30)**
RID52 Michael Ross, MD, MPH
(Professor, LA BioMed at Harbor-UCLA Medical Center)
“Maternal Obesity and Hyperphagia: Mechanism of Inflammation-Induced Altered Hypothalamic Neuroprogenitor Cells and Neurogenesis”
- Abstract 16: (3:30 – 3:45)**
RID9 Qi Fu, MD, PhD
(Research Scientist, Medical College of Wisconsin)
“Adverse Maternal Environment and Postweaning Western Diet Alter Expression, Localization and Methylation of Liver CD36 Concurrent with the Development of NAFLD”
- 3:45 – 4:00 PM Break

- 4:00 – 4:45 PM **Epigenomics in Epidemiology:**
Karen Peterson, D.Sc.
(Stanley M. Garn Professor of Nutritional Sciences, Chair, Department of Nutritional Sciences, Professor, Department of Global Public Health, University of Michigan)
“Life Course Exposures: Toxicant Exposures and Diet Impact Life Course Health”
- 4:45 – 5:15 PM Break and Poster Set Up
- 6:30 – 8:00 PM Reception

POSTER SESSION DAY 1 September 9th

1. **RID 1** **Jerry Heindel, PhD**
(Coordinator HEEDS.ORG, Commonweal)
“Healthy Environment and Endocrine Disruptor Strategies (HEEDS.ORG)”

2. **RID 21** **Kristin Chesnutt, BS**
(Research Assistant, East Carolina University)
“Sexually Dimorphic Body Burdens of Vinclozolin Metabolites”

3. **RID 25** **Ariel Fricke, BA**
(Masters Student, East Carolina University)
“Prenatal Supplementation Influences the Response to the Anti-Androgen Vinclozolin in the Placenta”

4. **RID 33** **Jaylon Morehead, BS/BA**
(Research Assistant / Analytical Chemist I, East Carolina University)
“Can Prenatal Supplementation Reduce Contaminant Induced Orofacial Defects”

5. **RID 36** **Jazzmine Knight, BS**
(Lab Technician, East Carolina University)
“Can Prenatal Supplementation Protect Placental Morphology from the Antiandrogen Vinclozolin”

6. **RID 46** **Jackson Parker, BS**
(Graduate Research Assistant, North Carolina State University)

“Early Life TCDD Exposure Shapes Gene Expression Across the Life Course of Mice”

7. RID 54 **Christine Crute, BS**
(PhD Student, Duke University)
“Transcriptomic Analysis Provides Molecular Evidence for the Association of Perfluorobutane Sulfonate (PFBS) Exposure and Preeclampsia”
8. RID 61 **Sean Harris, PhD**
(Postdoctoral Fellow, University of Michigan)
“Identifying Key Genomic Networks Underlying Toxicant Effects on Preterm Birth Pathways”
9. RID 44 **Giehae Choi, MPH**
(PhD Student, University of North Carolina)
“Prenatal Phthalate Exposures and Executive Function in Preschool Children”
10. RID 39 **Elza Rechtman, PhD**
(Postdoctoral Fellow, Icahn School of Medicine at Mount Sinai)
“Sex Specific Associations Between Co-Exposure to Multiple Metals and Visuospatial Memory Skills in Adolescents”
11. RID 34 **Trenton Henry, MSPH**
(Research Assistant, University of Utah)
“Differential Impacts of Particulate Air Pollution Exposure on Early and Late Stages of Spermatogenesis”
12. RID 23 **Rena D’Souza, DDS, PhD**
(Professor, University of Utah)
“Phenotypic Analysis of Enamel Hypomineralization Defects in Children Exposed to Environmental Chemicals In-Utero”
13. RID 8 **Colette Miller, PhD**
(Postdoctoral Fellow, US Environmental Protection Agency)
“The Consequences of Exposure to Noise During Implantation Receptivity in a Rodent model of Ozone Induced Growth Restriction”
14. RID 2 **Montana Beeson, BS**
(Research Scientist, University of Minnesota)
“Proteomic Analysis of Synaptosomes Revealed Less Inflammatory Effect of Perinatal Ischemic Stroke in TMEM35 (NACHO) Knockout Mice”

15. RID 31

Bevin Blake, MS

(IRTA Postdoctoral Fellow, National Institute of Environmental Health Sciences / University of North Carolina at Chapel Hill)

“Perfluorooctanoic Acid (PFOA) and its Replacement, GenX, Disrupt the Maternal-Embryo-Placental Unit in CD-1 Mice”

16. RID 49

Rebecca Campbell, PhD

(Postdoctoral Fellow, Icahn School of Medicine at Mount Sinai)

“Maternal Prenatal Psychosocial Stress and Pre-Pregnancy BMI Predict Lower Fetal Iron Status”

Magnolia Room – Plenary Sessions

- 8:00 – 8:15 AM **Welcome & Introduction: Ganesa Wegienka, PhD**
US DOHaD Treasurer
(Epidemiologist and Senior Staff Scientist, Department of Public Health Sciences, Henry Ford Health System)
- 8:15 – 9:00 AM **Placenta / Pregnancy State of the Art Speaker**
Michael Soares, PhD
(Director, Institute for Reproduction and Perinatal Research
Director, Center for Perinatal Research, Professor, University of Kansas)
“Regulatory Events in Placental Development and Health”
- 9:00 – 9:15 AM Coffee Break
- 9:15 – 10:00 AM **ECHO Speaker**
Cindy McEvoy, MD, MCR
(Professor of Pediatrics, Neonatology, Oregon Health Science University
- School of Medicine)
“Prenatal Vitamin C and in-Utero Smoke: A Novel Approach to Block some of the Prenatal Origins of Lifelong Lung Disease”
- 10:00 – 12:00 PM ECHO Platform Sessions (10 minutes / 5 minutes questions)
- Abstract 17: (10:00 – 10:15)**
Emily Zimmerman
(Associate Professor, Virginia Commonwealth University)
“Infant Non-Nutritive Suck and its Relation to Prenatal Exposures to Parabens and Parental Stress”
This speaker received travel support from ECHO.
- Abstract 18: (10:15 – 10:30)**
John Pearce, PhD
(Assistant Professor, Medical University of South Carolina)
“Exploring associations between prenatal exposure mixtures and select birth outcomes with self-organizing maps”
This speaker received travel support from ECHO.
- Abstract 19: (10:30 – 10:45)**
Sara Nozadi, PhD
(Postdoctoral Student, University of New Mexico)
“Social Cognitive Processes in a Sample of Navajo Children: An Eye-Tracking study”
This speaker received travel support from ECHO.

Abstract 20: (10:45 – 11:00)

Kristen Lyall, PhD

(Assistant Professor, A.J. Drexel Institute, Drexel University)

“Measuring social communication and autistic traits using the Social Responsiveness Scale: Examining implications of shortening quantitative trait assessments”

This speaker received travel support from ECHO.

RID 28

Abstract 21: (11:00 – 11:15)

Hudson Santos, PhD

(Assistant Professor, University of North Carolina at Chapel Hill)

“Placental Multi-Omics Prediction of Autism Spectrum Disorder at Age 10”

RID38

Abstract 22: (11:15 – 11:30)

Jacqueline Bangma, PhD

(Postdoctoral Fellow, University of North Carolina at Chapel Hill)

“Sex Differences in Placental DNA Methylation Associated with Positive Child Health”

RID35

Abstract 23: (11:30 – 11:45)

Mohammad Rahman, MD, ScD

(Research Fellow, Harvard Medical School, Harvard Pilgrim Health Care Institute)

“Associations of Prenatal Exposure to Metals and Metal Mixture with Neonatal Anthropometry”

RID11

Abstract 24: (11:45 – 12:00)

Linda Adair

(Professor, University of North Carolina at Chapel Hill)

“Relative Impact of Pre-Versus Postnatal Growth Restriction on Later Life Achievement and Health”

12:00 – 1:00 PM

Networking Lunch

1:00 – 1:30 PM

US DOHaD Membership Business Meeting

1:30 – 2:15 PM

Young Investigator State of the Art Speaker

Alison Lee, MD

(Assistant Professor, Medicine, Pulmonary, Critical Care and Sleep Medicine, Pediatrics, Icahn School of Medicine)

“Perinatal Environmental Exposures and the Programming of Future Disease”

2:15 – 2:30 PM

Poster Set-Up

2:30 – 4:30 PM Poster Sessions

4:30 PM Wrap-up and Farewell

POSTER SESSION DAY 2 September 10th

17. RID 5 **Xingrao Ke, PhD**
(Research Scientist, Medical College of Wisconsin)
“Adverse Maternal Environment Decreases Hippocampal Neurogenesis and BDNF Protein while Increasing microRNA miR-10b-5p Levels and Decreasing miR-10b Promoter DNA Methylation in Mice”
18. RID 12 **Mohammad Rahman, MD, ScD**
(Research Fellow, Harvard Pilgrim Healthcare Institute / Harvard Medical School)
“A Prospective Study of Maternal Adiposity and Glycemic Traits Across Pregnancy and Mid-Childhood metabolomic Profiles”
19. RID 15 **Jenny Chow, BS**
(Clinical Research Coordinator, Inova Fairfax Hospital)
“Association of Ancestral Genetic Admixture and Excess Weight at 12 Months of Age”
20. RID 24 **Lyndsey Shorey, PhD**
(Research Assistant Professor, Oregon National Primate Research Center)
“Genome-Wide Expression and Methylation Analysis in Human Placenta from a Randomized Clinical Trial of Vitamin C Supplementation to Pregnant Smokers”
21. RID 30 **Marie Camerota, PhD**
(Postdoctoral Fellow, RTI International)
“Maternal Pre-Pregnancy Obesity Predicts Infant Cognition: Examining the Role of Prenatal Inflammation”
22. RID 42 **Katelyn Schumacher, BA**
(Medical Student, University of Kansas School of Medicine)
“Menstrual Endometrial Biopsy CyclinA2 Expression Correlates with In Vitro Fertilization Outcome”
23. RID 45 **Jennifer Straughen, PhD**
(Assistant Scientist, Henry Ford Health System)
“Maternal IgE and Offspring Neurodevelopment”

24. **RID 53** **Dillon Lloyd, BS**
(Post Baccalaureate Fellow, North Carolina State University)
“Assisted Reproductive Technology and Offspring DNA Methylation”
25. **RID 59** **Sarah Park, BS**
(Graduate Student, North Carolina State University)
“Differential Methylation Related to African Ancestry in Umbilical Cord Blood and Birthweight Outcome”
26. **RID 56** **Mandy Goldberg, MPH**
(Doctoral Student, Columbia University, Mailman School of Public Health)
“Infant Growth and the Onset of Breast Development in the Legacy Girls Study Cohort”
27. **RID 61** **Olufunmilayo Arogbokun, MPH**
(PhD Student, University of North Carolina at Chapel Hill)
“Maternal Oxidative Stress Biomarkers in Pregnancy and Early Childhood Growth”
28. **RID 18** **Laetitia Meyrueix, BS**
(Graduate Student, University of North Carolina at Chapel Hill)
“Developmental Programming of the Placental Epigenetic Landscape by Maternal Metabolic Health”
29. **RID 43** **Lauren Eaves, BSPH**
(Graduate Research Assistant, PhD Student, University of North Carolina at Chapel Hill)
“Sexual Epigenetic Dimorphism in the Human Placenta: Differential miRNA Expression Between the Male and Female Placenta”
30. **RID 48** **Nikolaos Stratakis, PhD**
(Postdoctoral Fellow, University of Southern California)
“Diet Quality in European Children and Associations with the Plasma and Urinary Metabolome and Markers of Beta Cell Function”
31. **RID 16** **Carmen Monthé-Drèze, MD**
(Instructor, Pediatrics, Attending Neonatologist, Harvard Medical School / Brigham & Women’s Hospital)
“Dietary Inflammation in Pregnancy and Offspring Adiposity from Mid-Childhood to Early Adolescence”

32. RID 26 **Samantha Martin, PhD**
(Postdoctoral Fellow, University of Alabama at Birmingham)
“Associations of Maternal GDM and Offspring Hypertension”
33. RID 4 **Rikesh Chakradhar, MBBS**
(Researcher, University of Kansas Medical Center)
“Exposure to Placental Insufficiency Alters Postnatal Z-Score Trajectory in Extremely Low Birth Weight Infants”
34. RID36 **Jasmine Plows, PhD**
(Postdoctoral Research Fellow, Children’s Hospital Los Angeles / The Saban Research Institute)
“Human Milk Oligosaccharides (HMOs) and Baby Eating Behaviors at 1 and 6 Months”

This meeting has been supported by the following institutions:



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The Environmental influences on Child Health Outcomes (ECHO) Program

2019 US DOHaD Trainee Award Winners

Olufunmilayo Arogbokun, University of North Carolina
Rebecca Campbell, Icahn School of Medicine at Mt. Sinai
Christine Crute, Duke University
Mandy Goldberg, Columbia University
Thea Golden, University of Pennsylvania
Laetitia Meyrueix, University of North Carolina
Sarah Park, North Carolina State University
Mohammad Rahman, Harvard University
Nikolaos Stratakis, University of Southern California

The meeting organizers wish to recognize the following individuals for their invaluable contributions to the success of this meeting:

Chad Coleman, MPH
Stephanie Klomsten

The United States Developmental Origins of Health and Disease Society was founded in 2016 and is an affiliate of the International DOHaD Society. Our organization is focused on all facets of the study of the fetal origins and early life programming of health and disease. While our primary focus is to promote the research principles of DOHaD, we also strive to support trainees and early career investigators in their scientific and professional development.

US DOHaD Officers 2018-2020

President: Robert Lane (2018-2020)
Immediate Past-President: Michael Ross (2018-2020)
Secretary: Mina Desai (2016-2020)
Treasurer: Ganesa Wegienka (2016-2020)
Council: Sara Pinney and Kaela Varberg (Trainee Representative) (2018-2020),
Folami Iderabdullah and Thea Golden (Trainee Representative) (2019-2021)

Nominations will be accepted in early 2020 for 2020-2022 President and Council membership (Faculty and Trainee) as well as the 2020-2024 Secretary and Treasurer.

Please join the US DOHaD Society as a member. Benefits include:

1. Membership in the International DOHaD Society
2. Discounted registration for the US DOHaD Annual Meeting
3. Voting rights in the US DOHaD Society and the International DOHaD Society
4. Free access to journal (J DOHaD)
5. Voting privileges for bylaws and elections
6. Opportunity to serve on council or elected office

Membership is for the calendar year.

<http://usdohad.org/membership/>

We look forward to seeing you again in 2020 for the 5th Annual Meeting of the US DOHaD Society.