

Break The Cycle 6



Break the Cycle of Environmental Health Disparities

Thursday, May 5, 2011
8:30 am – 4:30 pm

Claudia Nance Rollins Building, Room 1000
Emory University, Rollins School of Public Health
1518 Clifton Road
Atlanta, Georgia 30322

A project of

**Southeast Pediatric Environmental Health Specialty Unit
at Emory University
and
The Institute for the Study of Disadvantage and Disability, Inc.**



Keynote Speaker: Pamela Maxson, PhD, Duke University, Children's Environmental Health Initiative
Student Researchers from thirteen university departments will present findings from their research.

Conference Program

- 8:00 – 8:30 **Registration**
- 8:30 – 8:50 **Greetings** – I. Leslie Rubin and Robert J. Geller
SE Pediatric Environmental Health Specialty Unit – Robert J. Geller
Environmental Protection Agency, Office of Children’s Health Protection – Khesha Reed
Agency for Toxic Substance Disease Registry – Michael Hatcher
- 8:50 – 9:10 **Introduction and Evolution of Break the Cycle of Environmental Health Disparities**
Leslie Rubin
- 9:10 – 9:30 **Keynote – Breaking the Cycle: Children’s Environmental Health Research**
Pamela Maxson
- 9:40 – 10:30 **I. Prenatal Projects**
- Effects of Environmental Exposures on Pulmonary Development in a Mouse Model**
 Duke University, Trinity College, Department of Pediatrics and Psychology
 Farah Dadabhoy, Student; Richard Auten, Pamela Maxson, Faculty Mentors
- Long Term Detriments of Gulf War Exposures and Pregnancy Outcomes: A Retrospective Study of Iraqi Immigrants and Refugees**
 Wayne State University, School of Medicine
 Alexis Drutchis, Student; Bengt Arnetz, Faculty Mentor
- Fetal Deaths in the State of Georgia: A Study of the Social and Economic Determinants of Fetal Mortality Rates in Georgia Counties from 1994 to 2006**
 Emory University, Rollins School of Public Health
 Robert Brown, Student; Carol Hogue, Faculty Mentor
- 10:30 – 10:40 **Discussion**
- 10:40 – 10:50 **Health Break**
- 10:50 – 11:50 **I. Prenatal Projects (continued)**
- Maternal Substance Abuse and Child Health Outcomes in Homelessness**
 Emory University, Rollins School of Public Health
 Peiyin Hung, Student; Laura Gaydos, Faculty Mentor
- Examining the Association between Nutrition and Psychosocial Factors in First-Time Pregnant Women: A Cross-Sectional Study**
 Tulane University, School of Public Health
 Jenny Hurst, Student; Paula Zeanah, Faculty Mentor
- Disparities in Psychosocial Health and the Built Environment during Pregnancy**
 Duke University, Nicholas School of Environment
 Allison Gruber, Student; Pamela Maxson, Faculty Mentor
- 11:50 – 12:00 **Discussion**
- 12:00 – 1:15 **Lunch Break and Networking**

Environmental Smoke Exposure Associated with Increased Prevalence of Dental Caries in Low Income Children

Georgia Washington University, School of Medicine and Health Sciences

Neha Jakhete, Student; Ben Gitterman, Faculty Mentor

Assessing Arsenic Exposure from Drinking Water Before and After the Improvement of Water Supply and the Health Effects on Children in Endemic Regions of China

Mercer University, School of Medicine, Department of Community Medicine

Crystal Davis, Student; Yudan Wei, Faculty Mentor

Exploring the Impact and Risks of the 2008 Recession for Marginalized Communities and High Poverty Schools Academic Achievement

Georgia State University, Department of Educational Psychology & Special Education

Lidia Quinones, Student; Miles Anthony Irving, Faculty Mentor

2.15 – 2:30 **Discussion**

2.30 – 2:45 **Health Break**

2:45 – 3:45 **III. Making a Difference** - *Action plans that have a positive impact*

The Use of Peer-teaching and Dramatic Play to Increase Asthma Awareness in African-American Children

Morehouse School of Medicine, Master of Public Health Program

Stephane McKissick, Student; Stephanie Miles-Richardson, Faculty Mentor

The Impact of Third hand Smoke Education in a Pediatric Emergency Department on Caregiver Smoking Policies and Quit Status: A Pilot Study

University of Florida-Jacksonville, Department of Emergency Medicine

Sima Patel, Student; Phyllis Henry, Colleen Kalynch and Katryne Lukens Bull, Faculty Mentors

Ensuring the Sustainable Future Neglected Tropical Diseases Prevention Programs through Treaty Law

Tulane University School of Law

Madison Hardee, Student; Colin Crawford, Faculty Mentor

3:45 – 4:00 **Discussions**

4:00 – 4:15 **Priorities Going Forward** – Benjamin Gitterman

4:15 – 4:30 **Concluding Remarks** – Leslie Rubin

4.30 – 5:00 **Student/Faculty Debriefing and Next Steps**

Thank you for attending and please complete your evaluation form. If you are interested in participating in the next Break the Cycle program, please contact Dr. Leslie Rubin at lrubi01@emory.edu. We hope to see you next year.

Conference Faculty and Presenters

Keynote Speaker

Pamela Maxson, PhD

Pamela Maxson is the Research Director at the Children's Environmental Health Initiative (CEHI) in the Nicholas School of the Environment at Duke University. She is the project manager for the Southern Center on Environmentally Driven Disparities in Birth Outcomes (SCEDDBO) and the research coordinator for CEHI's Clinical Obstetrics study. She received her Ph.D. in Human Development and Biobehavioral Health from Pennsylvania State University and came to Duke for a post-doctoral fellowship. Her research interests lie in the interface of psychological, social, host, and environmental contributors to health and health disparities. Specific interests include maternal and child health disparities including the societal, familial, and individual influences on outcomes. Her most recent work has examined resilience and risk in low-income minority women. Dr. Maxson has been an avid supporter of the Break the Cycle programs and has mentored her students in the program for several Break the Cycle years.



Duke University, Children's Environmental Health Initiative

Student

Allison Gruber

Allison Gruber has a double major in Environmental Science & Policy and Psychology. Next year she begins a Master of Public Health program, specifically studying psychosocial and environmental factors in health. Her Break the Cycle project has provided Allison a practical link between her academic fields of study and augmented interest in contributing to improved societal health outcomes. Ms. Gruber hopes that her project will provide some additional insights into CEHI's Healthy Baby, Healthy Pregnancy study and the larger Southern Center on Environmentally-Driven Disparities in Birth Outcomes to further understand and eventually intervene to break the cycle of disparities in pregnancy outcomes. Ultimately, she looks forward to a career committed to working to advance the health and well-being of populations, whether that be through work in academia, at a governmental agency, or at a non-profit organization.

Faculty

Pamela Maxson, PhD

Pamela Maxson is a Research Associate at CEHI where she is the Research Director for the Southern Center on Environmentally Driven Disparities in Birth Outcomes (SCEDDBO) and the research coordinator for CEHI's Clinical Obstetrics study. She received her B.S from the University of Hawaii and her M.S. and Ph.D. in Human Development and Biobehavioral Health from Pennsylvania State University. Her research interests lie in the interface of psychological, social, host, and environmental contributors to health. Specific interests include maternal and child health disparities including the societal, familial, and individual influences on outcomes. She has been teaching at Duke since 1995 focusing on child, adolescent, and lifespan development.

**Duke University, Trinity College
Department of Biology**

Student

Farah Dadabhoy

Farah Dadabhoy is currently a B. S candidate Duke University, Department of Biology, graduating in May 2011. She grew up in Pakistan, where she developed a passion for healthcare and the biomedical sciences, and hopes to attend medical school. At Duke, rigorous coursework and long hours at the library have fueled her passion for the biomedical sciences. Currently, she is writing an honors thesis on the effects of air pollutants on lung development and neurocognitive function. She has also conducted research at the Duke Cancer Care Research Program and the Duke Department of Dermatology. She became interested in development and maternal effects after taking an embryology course at Duke. Through her Break the Cycle project, Ms. Dadabhoy hopes to highlight the unique role of maternal environmental interactions on fetal and neonatal development. Moreover, she wants to underscore the importance of providing pregnant women with safe and adequate housing facilities. Her research shows that individual and combined toxins can be damaging in different ways, and our policy makers should address the ambient air quality around highways and populated urban areas.

Faculty

Pamela Maxson, PhD

Pamela Maxson is a Research Associate at CEHI where she is the Research Director for the Southern Center on Environmentally Driven Disparities in Birth Outcomes (SCEDDBO) and the research coordinator for CEHI's Clinical Obstetrics study. She received her B.S from the University of Hawaii and her M.S. and Ph.D. in Human Development and Biobehavioral Health from Pennsylvania State University. Her research interests lie in the interface of psychological, social, host, and environmental contributors to health. Specific interests include maternal and child health disparities including the societal, familial, and individual influences on outcomes. She has been teaching at Duke since 1995 focusing on child, adolescent, and lifespan development.

**Emory University
Rollins School of Public Health, Health Policy and Management**

Student

Peiyin Hung

Peiyin Hung received her undergraduate training at Chung Shan Medical University in Taiwan. Her graduate work is currently at Emory University School of Public Health. She has had numerous presentations both in Taiwan and Emory in the areas of patient health and has already received numerous awards of academic excellence. Her research interests cover the health care intervention and quality of care, particularly focusing on vulnerable population such as aging or children. Through her Break the Cycle project, she hopes to find more effective interventions to improve the health outcomes of homeless children. Studies have documented that babies are more likely to exhibit behavioral and emotional problems when their mothers consumed alcohol or drugs during pregnancy. The results of this study may assist clinical professionals or policy sectors in mitigating this situation from focused attention on women and children with those characteristics.

Faculty

Laura Gaydos, PhD

Laura Gaydos is Research Assistant Professor of Health Policy & Management in the Department of Health Policy and Management at Emory University, Rollins School of Public Health, She is also the Director of the Masters of Science in Public Health (MSPH) program in the Health Policy and Management Department at the Rollins School of Public Health. She received her A.B. from Brown University in 1998 and her Ph.D. at the

University of North Carolina at Chapel Hill in 2004. Dr. Gaydos' work focuses in the areas of unintended pregnancy prevention/ reproductive health, religion and reproductive health, women's fitness and nutrition, racial disparities in women's health, and legislative advocacy for women's health. Her work has been supported by the Centers for Disease Control, United States Department of Agriculture, the Atlanta Women's Foundation, and the Healthcare Georgia Foundation.

Emory University, Rollins School of Public Health

Student

Robert A. Brown, PhD

Robert Brown is a graduate of Brown University (BA, History, 1985) and of the University of Michigan (PhD, Political Science, 1996). He is currently completing a MSPH in Epidemiology at the Rollins School of Public Health at Emory University. He has been an Assistant Professor of Political Science at Emory University from 1996 to 2003. Additionally, he has worked as an epidemiological assistant in the Birth Defects Branch at the Centers for Disease Control and Prevention. He completed an ORISE fellowship in the Environmental Health Services Branch of the CDC in 2010. He has authored several peer-reviewed publications and made several presentations at academic conferences during his political science career. Dr. Brown's interest in his Break the Cycle topic stems from his training in public health, where he has become more knowledgeable about the research literature examining racial disparities in health outcomes and the social determinants of health. Dr. Brown hopes to understand better how various social and economic factors determine the occurrence of fetal deaths throughout Georgia and interplay with the racial disparity in fetal deaths in Georgia. Dr. Brown hopes to transition to becoming a research epidemiologist who studies the social factors undermining health outcomes in the United States.

Faculty

Carol Hogue, PhD, MPH

Dr. Carol Hogue was appointed Professor of Epidemiology and Jules & Uldeen Terry Professor of Maternal and Child Health at the Rollins School of Public Health of Emory University in 1992. For a decade before that, she was at the Centers for Disease Control, Division of Reproductive Health, where she was chief of the Pregnancy Epidemiology Branch (1982-88) and then Director of the Division (1988-1992). Prior to her government service, she was on the Biometry faculty of Arkansas Medical School (1977-82) and the biostatistics faculty of UNC-Chapel Hill School of Public Health (1974-77). While at CDC, Dr. Hogue initiated many of the current CDC reproductive health programs, including the Pregnancy Risk Assessment Monitoring System (PRAMS), the National Pregnancy Mortality Surveillance System, and the National Infant Mortality Surveillance (NIMS) project that initiated the national and state-level development and use of linked birth and death records. In addition, Dr. Hogue led the first research on maternal morbidities that was the precursor to the current safe motherhood initiative, and the initial innovative research on racial disparities in preterm delivery that found that college-educated African American women have a three-fold risk of very preterm delivery, when compared to college-educated White women. This discovery has triggered further research into biological, biosocial, and environmental causes of this as-yet unexplained excess risk.

Her ongoing research interests include the long-term effects of induced abortion, epidemiology of preterm delivery, and the impact of pregnancy complications on minority health. She has published broadly in maternal health, including studies of ectopic pregnancy, stillbirth, unintended pregnancy, contraceptive failure, and reproductive cancers. She is lead editor of the book, Minority Health in America (Johns Hopkins U. Press, 2000) and of a 2001 supplement to the journal Paediatric and Perinatal Epidemiology, entitled "New Perspectives on the Stubborn Challenge of Preterm Birth." Currently she is PI of the Emory Center in the NICHD-funded Stillbirth Collaborative Research Network as well as co-PI of the Emory National Children's

Study Center. She is also leading intervention research into reducing obesity among African American women healthcare workers, funded by CDC and USDA. Among her many honors, Dr. Hogue served as President of the Society for Epidemiologic Research (1988-89), served on the Institute of Medicine Committee on Unintended Pregnancy (1993-1995), was Chair of the Regional Advisory Panel for the Americas of the World Health Organization Human Reproduction Programme (1997-99), President of the American College of Epidemiology (2002-4), Senior Fellow of the Emory Center for the Study of Law and Religion (2001-6), and received the MCH Coalition's National Effective Practice Award in 2002. Dr. Hogue is a long time supporter of the Break the Cycle projects and has mentored students in two of the Break the Cycle rotations. She serves on the ISDD Advisory Council.

The George Washington University School of Medicine and Health Sciences Department of Pediatrics and Environmental Health

Student

Neha Jakhete

Neha Jakhete is a third year medical student at George Washington University School of Medicine and Health Sciences. She also did her undergraduate work at GWU in the fields of Biology and Psychology. Her past experiences include research in the field of multiple sclerosis at the National Institute for Neurological Diseases and Stroke as well as exploring treatment for inflammatory atherosclerosis in the Cardiovascular Research Center at Massachusetts General Hospital. Her interest in the Break the Cycle project began during her outpatient clinic assignment on her pediatrics rotation. Ms. Jakhete worked at a community clinic in Washington, DC and noticed how many children had no dental care when they came in for their well child visits. She noticed the lack of emphasis on dental care during those visits when discussing overall health was meant to be the goal. When she began reading about the epidemiology of dental caries, she learned that the prevalence among the low income population was astounding. Through this project, Ms. Jakhete hopes to understand some of the environmental factors that are associated with this health disparity as well as come up with strategies to help break the cycle. She also hopes to understand more about the dental services offered to this population and the utilization of these services by families. Neha Jakhete plans to pursue residency training in Pediatrics or Internal Medicine with emphasis on adolescent care. She is interested in working in community clinics and reaching populations that have limited access to medical care and hopes to continue learning about different health disparities and strategize techniques that community health care providers can utilize to impact the health of their patients.

Faculty

Benjamin Gitterman, MD

Benjamin Gitterman, MD is Associate Professor of Pediatrics and Public Health at George Washington University and Children's National Medical Center in Washington D.C. His major activities include Children's Environmental Health, Child Advocacy and Community Health- focused training and program development. He received his Bachelor of Science degree from City College of New York, and his M.D. degree from SUNY at Buffalo. He completed his Pediatrics residency and chief residency at the Residency Program in Social Medicine at Montefiore Hospital and Medical Center in New York. Prior to coming to Washington DC, he was the Director of Ambulatory Pediatric Services for Denver Health and Hospitals and was on the faculty of the University of Colorado School of Medicine. In Washington D.C., he has been the Chair of General and Community Pediatrics at Children's National Medical Center.

Dr. Gitterman was a co-founding Director of the Mid-Atlantic Center for Children's Health and the Environment, one of 10 federally funded Pediatric Environmental Health Centers in the United States. He is a member of the Governor's Council on Children's Health and the Environment for the State of Maryland, the

Scientific Advisory Board of the Environmental Protection Agency for Children's Environmental Health and a liaison member to the Advisory Committee on Children's Lead Poisoning and Prevention for the CDC. He has been a member of the American Academy of Pediatrics Committee on Children's Environmental Health, and has written and spoken nationally and internationally in this area, particularly in regard to advocacy and education. He also co-directs the Specialty Track in Environmental Health at George Washington University School of Medicine.

Georgia State University
Department of Educational Psychology & Special Education

Student

Lidia Quinones, M.Ed.

Lidia Quinones received her Masters in Education in Community Counseling and Human Development at Vanderbilt University and her BA in Psychology at Spelman College. She is currently pursuing her PhD in educational psychology at Georgia State University. Ms. Quinones hopes to investigate through her Break the Cycle project the increased disadvantage marginalized schools and communities face, specifically during times of economic recession. She feels that, since the 2008 recession, there has been an increase in the demand for schools to meet social and non-academic needs of students, including food, safe housing, nourishment, safety from toxins and basic survival needs. The additional demand at a time with consistent educational cutbacks has impacted the ability for schools to meet these non-academic needs of families, as well as the academic needs of the students.

Faculty

Miles Anthony Irving, PhD

Miles Anthony Irving is Associate Professor at Georgia State University in the College of Education. He received his PhD (2002) and M.A. (2000) the University of California at Santa Barbara and his B.S. at the University of California Berkeley. His major areas of interest are motivation, academic achievement and culturally relevant pedagogy and identity.

Mercer University School of Medicine
Department of Community Medicine

Student

Crystal Davis

Crystal Davis is currently a Master of Public Health graduate student at Mercer University School of Medicine. She received her B.S. in Biology from the University of Georgia. While at the University of Georgia, she conducted undergraduate research on knocking out the hrp G gene within *Acidovorax Avenae Citrulli spp* bacterium. During her undergraduate years, she received several honors including membership into the Delta Epsilon Iota Honor Society and Beta Beta Beta Biological Honor Society, as well as a Dean's List recipient. With the Break the Cycle Project, she hopes to help provide insight on health disparities faced by disproportionate at-risk communities throughout the world. Also, she wants to promote awareness to the vulnerability of arsenic exposures in drinking water within endemic regions of China. In the imminent future, she plans to further her study of eliminating health disparities for all people through the field of public health. Crystal is continuing preparation for entry into medical school. Ideally, she would like to further advance the horizons of public health and medicine with the goal of promoting quality, equitable health for all people.

Faculty

Yudan Wei, PhD, MD

Yudan Wei, PhD, MD is an Associate Professor of Community Medicine at Mercer University School of Medicine. She received her PhD degree in Toxicological Genetics from Stockholm University, Sweden, a Medical Degree in Preventive Medicine from Harbin Medical University, China, and postdoctoral training at University of Cincinnati Medical Center. She has extensive teaching and research experience in the field of environmental health and community medicine. Her research work includes studies of molecular mechanisms of the combined effects elicited by exposure to chromium and PAHs, biomarkers of chronic arsenic exposure, breast cancer etiology and prevention, and environmental risk factors for low birth weight and childhood obesity. She has also conducted community-based interventions and research on removal of lead contamination, breast cancer education, and childhood obesity awareness. Dr. Wei has numerous publications and presentations in her field, and has actively engaged in international collaborations for teaching and research.

**Morehouse School of Medicine
Masters in Public Health Program**

Student

Stephane McKissick

Stephane Zephir McKissick is a Master of Public Health candidate at Morehouse School of Medicine (MSM) Master of Public Health Program (MPH). Her research area of interest is environmental community health, using the lens of health education and health promotion, with a focus on underserved populations. Mrs. McKissick has received training on the use of the Youth Assets and Strengths-Focused approach from the Department of Human Resources, Office of Adolescent Health and Youth Development & Kennesaw State University. She has also received training from Children's Healthcare of Atlanta & National Association of School Nurses on Managing Asthma Triggers in Children. She hopes that her Break the Cycle research will contribute to improving the quality of life of African-American children in Atlanta, with a long term goal of increasing knowledge of environmental triggers of asthma and reduction of pediatric asthma, a devastating chronic disease to many families across the world. Mrs. McKissick earned an undergraduate degree in Human Services from Kennesaw State University. She has been accepted as a student fellow for the Society for Public Health Education (SOPHE)/Agency for Toxic Substances and Disease Registry (ASTDR) in Environmental Health/Emergency Preparedness for the year 2011; she will use this opportunity to extend the efforts from the 2011 Break the Cycle research to children of native-born Haitians. Mrs. McKissick's professional and career goals include getting a Doctor of Philosophy in Health Promotion and Behavior and practicing as a public health expert.

Faculty

Stephanie Miles-Richardson, DVM, PhD

Stephanie Miles-Richardson is an Associate Professor in the Department of Community Health and Preventive Medicine at Morehouse School of Medicine (MSM). At MSM, she also serves as Interim Director of the Master of Public Health Program (MPH), as well as Health, Administration, Management and Policy Track Coordinator. Dr. Miles-Richardson joined the faculty at Morehouse School of Medicine in November 2008, after over a decade of federal service at the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry. During her federal career, Dr. Miles-Richardson worked as an Environmental Toxicologist, Scientific Technical Advisor for a 4 million dollar research study, Program Manager for issues related to environmental health and minority populations, and finally, as CDC's Associate Director for Minority Health and Health Disparities Policy. She is also a former Officer in the United States Commissioned Corps. Dr. Miles-Richardson earned an undergraduate degree in Biology from Grambling State University, Grambling, LA,

her veterinary medical degree from Tuskegee University School of Veterinary Medicine, Tuskegee, AL, and a dual PhD in Pathology and Environmental Toxicology from Michigan State University, East Lansing, MI.

Tulane University Law School

Student

Madison Hardee

Madison Hardee is a law student at Tulane University with a background and strong interest in public health. She plans on receiving her JD from Tulane Law School in May 2012 with a certificate in international and comparative law. She received her BS in Public Health from George Washington University in 2009. Madison first became interested in neglected tropical diseases in her undergraduate coursework. Her decision to go to law school was motivated by a desire to give a voice to disadvantaged populations and to improve the national and international health systems that have failed them. In addition to her academic studies, she has had the opportunity to work with several legal aid and health advocacy organizations including AIDS Law of Louisiana and PSI. Madison believes that law can be a powerful tool to reduce the burden of disease on the world's poor and hopes that this project will spark discussion about the potential of treaty law to encourage sustainable commitments to global health. This summer, Madison will split her time between New Orleans and Tanzania, interning with two different legal organizations. After graduation, she hopes to be working in the field of international health law. A legal position with the WHO is her ultimate goal, although she is eager to explore other work opportunities that will provide valuable field knowledge and relevant skills.

Faculty

Colin Crawford, JD

Colin Crawford is Professor of Law at Tulane University Law School and Executive Director, Payson Center for International Development. He received his BA at Columbia University, his MA at the University of Cambridge, and his JD at Harvard University. Professor Crawford joined the Tulane faculty in 2010 from the Georgia State University College of Law, where he founded and co-directed the Center for the Comparative Study of Metropolitan Growth and directed a summer program in Rio De Janeiro. He has also been a visiting professor at the University of Denver Sturm College of Law, the National School of Public Health, Oswaldo Cruz Foundation in Rio de Janeiro, and the Technological Institute of Santo Domingo in the Dominican Republic, where he was a Fulbright Scholar.

Professor Crawford has significant expertise in international development, an area in which he will teach as well as work in his role as Executive Director of Tulane's Payson Center. He was recently awarded a three-year grant from Higher Education for Development/US Agency for International Development to direct an environmental law capacity-building project in Guatemala, Nicaragua, and the Dominican Republic.

Tulane University, School of Public Health

Student

Jenny Hurst

Jenny Hurst is currently a candidate for the degree of Masters of Public Health with an emphasis in Epidemiology. Between 2007 through 2009, Jenny served as a Peace Corps Volunteer in the country of Ukraine. Her background expertise was working with mothers and children during her Peace Corps service and studying the relationship between Maternal Iron Supplementation and Low Birth Weight. Ms. Hurst became more familiar with the Nurse Family Partnership (NFP) Program during an internship opportunity, which allowed her to develop a database to catalogue and analyze depression scale data from NFP mothers. In addition to working

with the NFP, Jenny interned with the Louisiana Pregnancy Risk Assessment Monitoring System where she assisted in surveying selected mothers. She hopes to continue to work in the Maternal Child Health area doing research in improving the health of mothers and babies in Louisiana.

Faculty

Paula Zeanah, MSN, PhD

Dr. Paula Zeanah received her Masters Degree in Nursing in Pediatrics at the University of Virginia and her PhD in clinical psychology at the University of Connecticut. She is currently a Professor of Clinical Psychiatry and Pediatrics at Tulane University Medical School, Psychiatry & Neurology, as well as an Adjunct Professor, School of Public Health and Tropical Medicine, and Chief, Psychology Division, Department of Psychiatry and Neurology and Co-Director, Pediatric Psychiatry Consultation-Liaison Service. Her major research and professional interests are in the areas of mental health in non-mental health settings, consultation, training professionals, program/systems development, infant mental health in non-mental health settings, preventive interventions Pediatric psychology and sexual self-esteem. Dr. Zeanah also serves as the Clinical Director of the Louisiana Nurse Family Partnership Program through the Louisianan Office of Public Health, MCH Section. She has made numerous presentations in her areas of interest. She has written publications in the areas of nurturing children and families and training the area of Mental Health in infancy.

University of Florida, Jacksonville
College of Medicine and College of Public Health

Student

Sima Patel, MD

Sima Patel is currently a Pediatric Emergency Medicine Fellow at University of Florida College of Medicine Jacksonville. She completed her Pediatric Residency at Children's Hospital of Wisconsin, received her medical degree at University of South Florida College of Medicine and her undergraduate degree at the University of Florida. As a pediatrician, Dr. Patel has a passion for prevention, education, and advocacy. Every opportunity for those three things offers life changing/saving opportunities. As a pediatric resident, she worked on a study entitled Healthy Teeth: Determining Obstacles to Accessing Dental Care and presented at the 2008 Pediatric Academic Societies (PAS) Conference. She learned through this experience the importance of disparities faced by children and families. In 2007 she lobbied for Pediatric Oral Health in Madison, beginning her role as advocate. She states that, having done advocacy work in protecting children from the harm of tobacco lobbying for the Family Smoking Prevention and Tobacco Control Act (H.R. 1108/S. 625) in DC, "when the idea of thirdhand smoke was introduced to me it was obvious this was the project for me." Children exposed to Environmental Tobacco Smoke suffer from increased rates of health problems. Her daily experience of caring for children in the emergency department confirmed both the health complications to children as well as the number of high risk families encountered. With the guidance of amazing mentors and Break the Cycle, she hopes her study can give insight to the children most exposed to smoking and evaluate if this model of prevention could be effective in breaking the cycle of this disparity. Dr. Patel hopes to continue research in preventative medicine and health advocacy.

Faculty

Colleen Kalynych, MSH, EdD

Colleen Kalynych completed her dissertation work in Education and Organizational Leadership at the University of North Florida. She completed her undergraduate degree at San Diego State University and a Master's of Science in Health at the University of North Florida. She is the past Assistant Director of Northeast Florida Area Health Education Center, Director of Community Pediatrics Community Initiatives, and currently serves as Research Director for the University of Florida College of Medicine/Jacksonville's Department of Emergency Medicine. Dr. Kalynych has written numerous community and research grants, presented at national,

state, and local conferences, and published research in scientific journals. Additionally, she has served as a mentor to over 40 future health professions students. Finally, Dr. Kalynych holds a senior adjunct faculty position at the University of North Florida Brooks College of Health Department of Public Health.

Faculty

Phyllis L. Hendry, MD, FAAP, FACEP

Dr. Phyllis Hendry completed her pediatric residency at Louisiana State University Medical Center in Shreveport. Her pediatric emergency fellowship training was at the University of Florida Health Science Center/Jacksonville. Dr. Hendry is a tenured Associate Professor of Emergency Medicine and Pediatrics at the University of Florida Health Science Center/Jacksonville. She served as Director of Pediatric Emergency Services at Shands Jacksonville from 1993-2005. Dr. Hendry currently serves as Assistant Chair for Research in the Department of Emergency Medicine and works clinically in the Shands Jacksonville Pediatric Emergency Department.

Dr. Hendry's past accomplishments include serving as a medical consultant and medical director for Community PedsCare, a pediatric palliative and hospice program; state Medical Director for the Florida Department of Health's Emergency Medical Services for Children (EMSC) program from 1999-2004; and associate editor of the textbook *The Clinical Practice of Emergency Medicine* by Lippincott Williams and Wilkins for two editions. Her areas of interest include injury prevention, simulation training, bereavement and end-of-life care. She is the mother of two teens who have presented her with many "real-life" emergency and pediatric experiences.

Faculty

Katryne Lukens Bull, MPH

Katryne Lukens Bull is a Research Administrator at the Center for Health Equity and Quality Research (CHEQR) at the University of Florida, College of Medicine-Jacksonville. Ms. Lukens Bull earned her BA in French and Anthropology from Arizona State University and her MPH from the University of Arizona. She has worked in public health in Arizona, Washington State, and Florida at the state and local health level. She joined the University of Florida in 2003 and has worked on projects including the development of residency program curriculum, research, mentoring of students, grant writing, data analysis and fiscal management of grants. In her current position within CHEQR, Ms. Lukens Bull supports interdepartmental grant writing and research development. Ms. Lukens Bull has specific research interests in the areas of breastfeeding, early childhood caregiving and health outcomes, health literacy and child health equity.

Wayne State University, School of Medicine

Student

Alexis Drutchis

Alexis Drutchis is currently a third year medical student at Wayne State School of Medicine in Detroit. In the future, she hopes to pursue a career in either MedPeds or OBGYN, and work in an academic arena where she can practice clinically and conduct community based research as well. Her passion for global environmental health is grounded in her childhood experiences growing up living and travelling overseas, as well as her current clinical journey in medical school and health advocacy experiences in Detroit. Her current research project seeks to better understand reported Gulf War exposures and their effects on Iraqi immigrant and refugee pregnancy outcomes. Through her Break the Cycle study, she hopes to expand our knowledge and awareness of the health impacts of war, not only for those in her community who have been affected, but as a foundation for advocacy with the notion that war affects the health of future families and generations of children to come.

Faculty

Bengt B. Arnetz, MD, MPH, MScEpi, PhD

Bengt B. Arnetz holds an MD and a PhD from the Karolinska Institute Medical School, Stockholm, Sweden. He completed his MPH and MScEpi at the Harvard School of Public Health, Boston, Massachusetts. He is currently Professor and Director, Division of Occupational and Environmental Medicine, Department of Family Medicine and Public Health Sciences at the Wayne State University Medical School, Detroit, Michigan. He is Board Certified by the American Board of Preventive Medicine in Occupational and Environmental Medicine, and a Fellow of the American College of Occupational and Environmental Medicine (FACOEM). His research focuses on individual and organizational determinants of sustained health, well-being, and performance. Dr. Arnetz is also involved in a NIH/NIMH-funded R34 study of police stress, health and performance in collaboration with the city of Detroit Police Department. He recently completed a study of the impact of the 1991 Gulf War on Iraqi soldiers and civilians from the 1991 Gulf War. He is especially interested in the interaction between psychosocial and environmental exposure on the health and well-being of children to persons exposed to the Iraqi wars.



Southeast Pediatric Environmental Health Specialty Unit Team

Emory University Department of Pediatrics

PEHSU

Robert J. Geller, MD

Dr. Robert Geller currently serves as the Chief of the Emory Pediatrics Service at Grady Health System, as Medical Director of the Georgia Poison Center, and as Director of the Emory Southeast Pediatric Environmental Health Specialty Unit (PEHSU). Dr. Geller was graduated in 1979 from Boston University School of Medicine. He then pursued his residency and Chief Residency in Pediatrics at the Medical College of Virginia in Richmond, followed by a fellowship in Clinical Pharmacology and Toxicology at the University of Virginia in Charlottesville, and is a fellow of the American Academy of Pediatrics, the American College of Medical Toxicology, and the American Academy of Clinical Toxicology. He has been a member of the Southeast PEHSU since its formation in 2001. He is the author of more than 50 publications, and is one of the editors of the text, *Safe and Healthy School Environments*. He is the author or co-author of numerous community information sheets and has met with community members at many sites of children's environmental health concern throughout the Southeastern United States.

Emory University Nell Hodgson Woodruff School of Nursing

PEHSU

Maeve Howett, PhD, APRN, CNP-Ped, IBCLC

Maeve Howett is a pediatric nurse practitioner and lactation consultant and has an appointment as Clinical Assistant Professor in Family and Community Nursing at the Nell Hodgson Woodruff School of Nursing at Emory University. She has twenty-five years of pediatric nursing experience, with research interests in women's experiences of infant feeding, early childhood nutrition, toxic exposures in infants and lactating women and

vulnerable pediatric populations. She is particularly interested in the at-risk mother-infant dyad made vulnerable by poverty or lack of resources. Dr. Howett sits on the Children's Healthcare of Atlanta (CHOA) Research Advisory Council, and is facilitator of the Neonatal and Birth Outcomes Research Group. Dr. Howett is president of the Southeastern Lactation Consultants Association (SELCA), was appointed to the Sustainability Taskforce for Emory Healthcare, and has chaired a conference on Sustainability in Healthcare for nurses for the past two years.

For the last six years, Dr. Howett has taken her students to South Georgia to care for the children of migrant workers and to Jamaica to care for children living in orphanages. Her teaching interests include research, global health, migrant health, hospitalized children, lactation and vulnerable populations. Dr. Howett is also involved in sustainability practices in the school, including an expanded recycling program and the installation of a medicinal herb garden for student instruction. Dr. Howett joined the SE PEHSU team in June 2010.

Emory University Rollins School of Public Health

PEHSU

Michele Marcus, PhD, MPH

Michele Marcus, PhD, MPH is Professor of Epidemiology and Environmental and Occupational Health at Emory University's Rollins School of Public Health. She is also Assistant Program Director for Kaiser Permanente Georgia's Center for Health Research. Dr. Marcus has over 20 years experience as a reproductive and environmental epidemiologist. At Mount Sinai School of Medicine, she was Director of the Environmental Epidemiology Core of the NIEHS Environmental Health Sciences Center. As a Turner Foundation Fellow at the CDC, she coordinated the work of the Endocrine Disruptors Leadership Panel. She has published extensively in this field and has co-authored two book chapters reviewing the effects of environmental and occupational exposures on reproductive function. Her work includes studies of prematurity, low birth weight, congenital malformations, child growth and pubertal development, adolescent pregnancy, miscarriages, menstrual function, infertility and menopause. She has served on federal expert panels reviewing the health effects of exposure to electromagnetic fields, bisphenol A, phthalates, gene/environment interactions and service in the Persian Gulf War. She served on the National Academy of Sciences Institute of Medicine Committee on the health effects of dioxin exposure among Vietnam Veterans. Dr. Marcus has also conducted research on genetic contributions to reproductive health and health effects of exposures to polycyclic aromatic hydrocarbons, pesticides, air pollution, solvents and lead.

Institute for the Study of Disadvantage and Disability, Inc.

PEHSU

Janice T. Nodvin

Janice Nodvin has served as Project Administrator and Educator for the SE PEHSU since its beginning eleven years ago. She is the Coordinator for the Break the Cycle Projects. Ms. Nodvin is also the Program Director for the Institute for the Study of Disadvantage and Disability where she serves as Program Director for Project GRANDD (grandparents raising their grandchildren with disabilities and chronic illness), Program Coordinator for the Healthy Tomorrows Partnership Project – Healthcare Without Walls and Clinic Director for the Adult Down Syndrome Program. Her role and expertise is in the areas of education, parent advocacy and program administration. Ms. Nodvin has co-edited *Safe and Healthy School Environments* and all the monographs for the Break the Cycle projects. She is the contact person for the SE PEHSU.

Morehouse School of Medicine Department of Pediatrics

PEHSU

I. Leslie Rubin, MD

Leslie Rubin MD is President and Founder of the Institute for the Study of Disadvantage and Disability, is Research Associate Professor in the Department of Pediatrics at Morehouse School of Medicine, Co-Director of the Southeast Pediatric Environmental Health Specialty Unit, Principal Investigator of the Healthy Tomorrows Partnership Project – Healthcare Without Walls, Medical Director of TEAM Centers in Chattanooga, Tennessee and Medical Director of the Adult Down Syndrome Program.

Dr. Rubin is originally from South Africa where he trained in Pediatrics and came to the USA to specialize in Neonatology and then in Developmental Pediatrics. He was initially at the Hospitals of the Case Western Reserve University in Cleveland Ohio from 1976-1980 and then moved to The Children's Hospital in Boston and the Harvard Medical School from 1980-1994. In July 1994 he moved to Atlanta, Georgia as Director of Developmental Pediatrics at Emory University and as Medical Director of the Marcus Institute.

Since 1998 he has been involved with the Southeast Pediatric Environmental Health Specialty Unit at Emory University, where he has integrated his understanding of Developmental Disabilities and applied this to populations of children who had been exposed to adverse environmental circumstances particularly in the city of Anniston Alabama in 2001-2002, where he helped form the Vision 2020, a citizens action group focused on promoting optimal health and development for the children of Anniston.

In May 2004, he co-founded the Institute for the Study of Disadvantage and Disability, which is dedicated to improving awareness and understanding of the relationship between social and economic disadvantage and disabilities in children. In 2004-2005, the first Break the Cycle Program was launched and has been an annual event since then. In September 2004, he left Emory University and Marcus Institute and joined the Morehouse School of Medicine. He is currently on a number of local, regional, national and international committees and projects that address the needs of children and adults with developmental disabilities and the author of papers and editor of books on developmental disabilities and on environmental health especially relating to low income minority populations.

Overview of Break the Cycle

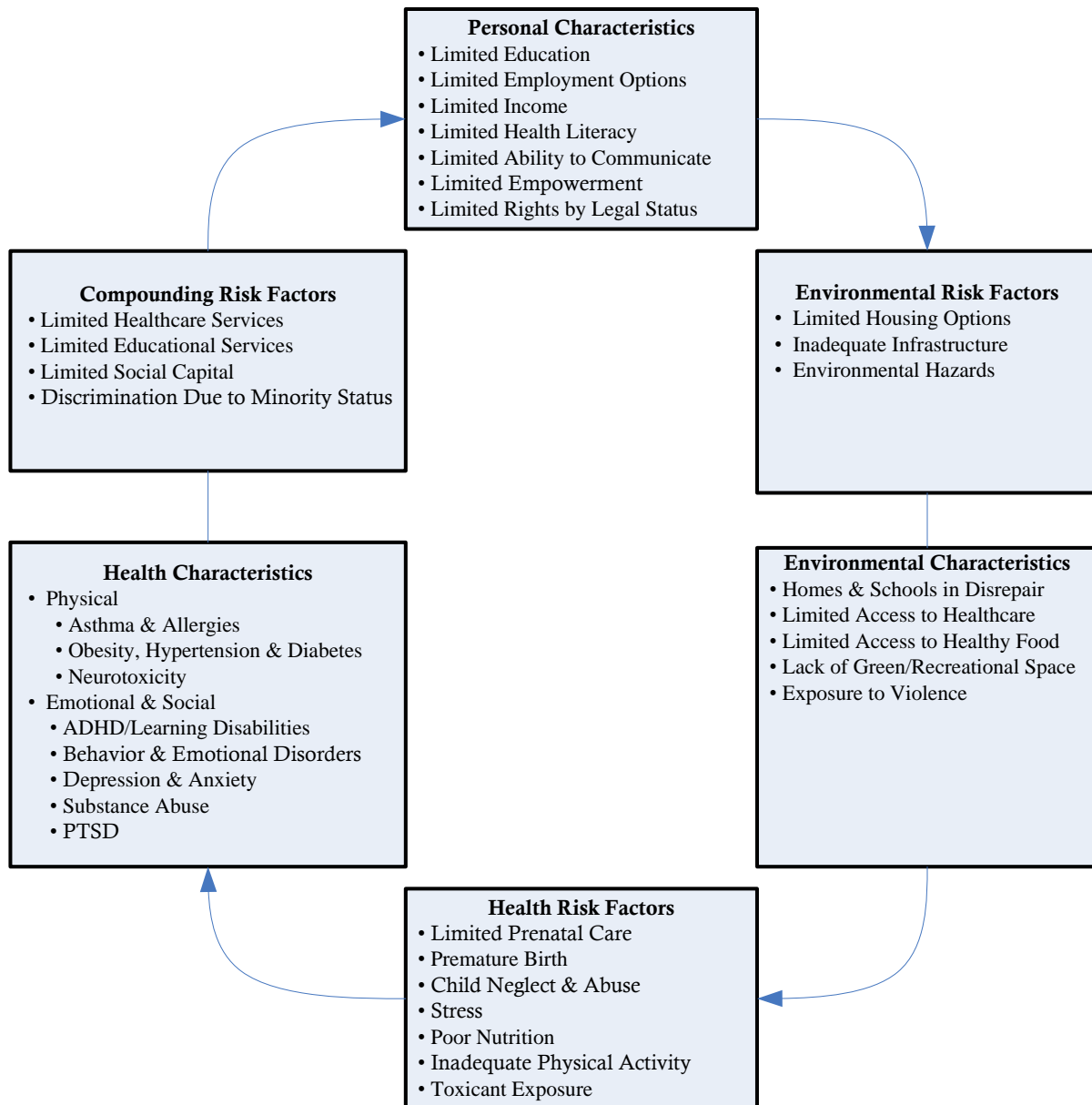
The threats to children's health and wellbeing are often multiple and complex. Children are uniquely vulnerable to environmental toxicants for several reasons: They are growing rapidly, they have a more active metabolic rate than adults, they breathe larger amounts of air for their size, they have a greater surface area to their body mass, they are lower on the ground, and they may pick up and play with objects and may put these objects in their mouths and even ingest them. They will, therefore, absorb more toxins in the environment through their skin, they will breathe more air with its pollutants, they will process some toxins into toxic metabolites more rapidly, they will touch, eat and swallow substances that may be toxic, and because they are growing and have a higher metabolic rate, they may incorporate potential toxins into their organ systems and suffer long term consequences that may only be evident much later in life.

Today, the major health related concerns for children are: asthma, obesity and its complications of hypertension and diabetes and neurodevelopmental disorders, most commonly learning disabilities and attention deficit hyperactivity disorder. These, and associated illnesses, have significant identifiable environmental factors that cause or exacerbate the conditions. These conditions create significant complications that affect a child's health and also affect learning and social opportunities that may significantly compromise the child's potential for self actualization and fulfillment. This is the challenge at an individual level; at a societal level, this affects who and how society cultivates its future citizens, workforce and leaders.

It has also become increasingly apparent that children who grow up in an environment of social and economic disadvantage are at greater risk for experiencing chemical toxicity, especially with lead, impacted by the age of the houses in which they live, the infrastructure of the communities in which they live, and of the risks of violence that they may experience. Furthermore, the vulnerability of children who live in circumstances of social and economic disadvantage is greater by virtue of their risks for exposure, magnified further by the limitations of support for to assure optimal education, access to quality health care, infrastructure, and limited Social Capital.

The combined effects, therefore, of the adverse environmental factors, the child's vulnerability and the limitations in necessary resources to overcome the adversity, results in a situation of compromised health and well being. It further results in reduced opportunities for success and thus limited opportunities to grow into capable, independent, and responsible citizens. This creates an inequity in health – in the true WHO definition of physical, emotional, and social well-being. The potential for health of children growing up under these circumstances is substantially less than that for a child growing up in a more affluent and supportive environment. The health disparities can be seen in terms of a cycle that encompasses and can trap generations. It is this Cycle of Environmental Health Disparities that is at the core of this project. The combination of caring and creativity among faculty and students in universities to develop creative and innovative projects to Break this Cycle are at the heart of these efforts to change the lives of one child at a time and therefore of whole communities.

Cycle of Environmental Health Disparities



Environmental Health Disparities

Children's health and wellbeing are shaped by the environment in which they live. Nurturing, resource-rich environments promote optimal health and development. Unsafe and unsupportive environments put children at risk for poor health, developmental delays, impaired learning, and other difficulties that reduce overall quality of life and limit opportunities for success in adulthood.

Children living in families headed by adults with limited education and health literacy, limited income and employment opportunities, and a relative lack of power within their community, are at increased risk for experiencing adverse environmental health outcomes. Their experience of social and economic disadvantage often leaves them with few housing options in rural, urban, or suburban communities. They are more likely to live in poorly-maintained older homes and be exposed to indoor toxicants, such as lead paint and mold, as well as other environmental hazards. They are also more likely to live in communities with limited access to transportation, grocery stores, green space, and recreational opportunities. Moreover, they are more likely to be exposed to street crime and violence within their immediate community.

The increased risk of toxicant exposure, poor nutrition, limited physical activity, abuse, neglect, and stress that are often shaped or exacerbated by environmental conditions in turn increase children's risk of physical health problems, such as asthma, obesity, hypertension and neurodevelopmental disorders. They may also contribute significantly and in a complex manner to compound learning disabilities, attention-deficit hyperactivity disorder (ADHD), depression, trauma reactions, substance abuse, and behavioral disorders. A lack of access to comprehensive healthcare and appropriate educational services, as well as discrimination, social stigma, and lack of social capital further increase the likelihood that children will continue to experience environmental health disparities, even into adulthood.

Break the Cycle Project

Our Break the Cycle Project is a collaborative, interdisciplinary pediatric environmental health research and training program established in 2005 that invites university students with their academic mentors to conduct research related to the reduction or prevention of environment-related illness and disability in children living in circumstances of social and economic disadvantage.

Break the Cycle is designed to:

- Inspire students from a variety of academic disciplines to explore the relationship between the environment and children's health, as well as develop strategies for addressing identified pediatric environmental health challenges
- Promote collaboration among academic leaders at major universities to facilitate creative examination of the issues relating to the impact of environmental factors on children's health and quality of life
- Develop the academic and leadership capacity of professionals within academic and healthcare communities who can, in turn, promote interest in children's environmental health and environmental justice
- Promote the incorporation of children's environmental health topics into university curricula

Students and faculty mentors are recruited from universities throughout the region. Proposed projects are reviewed for relevance, design, and fit within the project cycle by a committee comprised of the core PEHSU team, representative university faculty, environmental health experts, and students. During the research phase, monthly conference calls are held to track the students' progress and ensure that the progress is on target and that students and faculty mentors receive sufficient guidance and support.

At the end of each project period, each of the student researchers presents the results of their research at a symposium sponsored by SE PEHSU, ISDD and its strategic partners. The conference also features a nationally recognized keynote speaker to inspire and enrich the thoughts and discussion. This symposium provides budding scientists, academics and advocates with an opportunity to hone their research presentation skills, and also allows for dissemination of their findings to other scientists and academicians as well as healthcare providers, fellow students, advocates and the general public.

The Proceedings of the conference are published in a monograph which is made available to all participants, the project funders and anyone else who would like a copy. It is also made available on the PEHSU website at www.sph.emory.edu/PEHSU and the ISDD website at www.isdd-home.org. Furthermore, the papers will be published in an international peer reviewed monograph which will be accessible through the internet publication networks. In previous years we have had monographs published in the *International Journal of Child and Adolescent Health* and the *International Journal of Child Health and Development*, and in press we have a supplement to *Environmental Health Review*.

In past programs, we have seen a diversity of projects examining a variety of environmental health-related factors that include asthma, obesity and neurodevelopmental disabilities, as the health-related concerns along with environmental tobacco smoke, houses, neighborhoods and specific toxins as the causative agents. This year, we have a surprisingly prominent field of projects looking at environmental impact on pregnancy and the potential adverse outcomes. This has prompted us to look more closely at this particular issue. To that end, we have planned a workshop that brings together leadership in environmental health through the EPA and ATSDR and leadership in Maternal and Child Health through HRSA and MCH Federal and State offices to examine how combined efforts can do more to improve the outcome of pregnancies, especially for those women who live in circumstances of social and economic disadvantage in underserved predominantly minority communities.

Project Presentations

Keynote Presentation Pamela Maxson, PhD



Breaking the Cycle

Pamela J. Maxson, Ph.D.
5 May 2011

Children's Environmental Health Initiative

- Focus on children
- Focus on issues of environmental justice
- Shift to preventive interventions
- Emphasis on spatial analytic approaches

Children's Environmental Health Centers

NIEHS/EPSCoR Centers for Children's Environmental Health and Disease Prevention Research

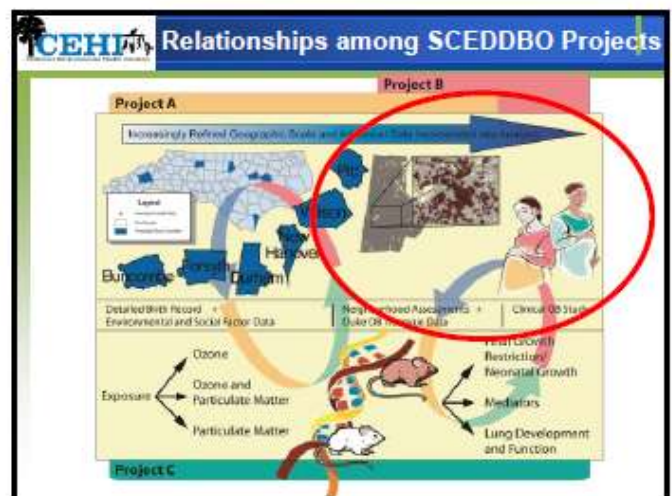
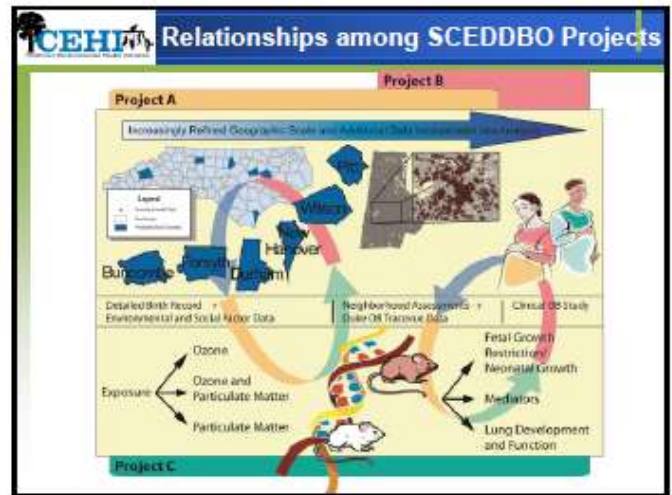
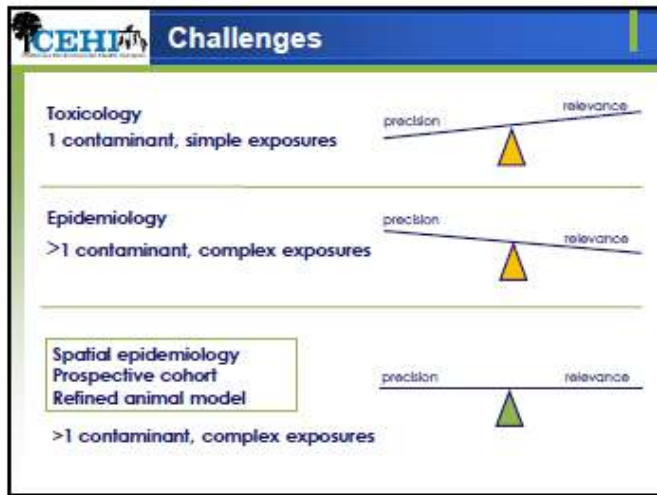
Children's Environmental Health Center Locations

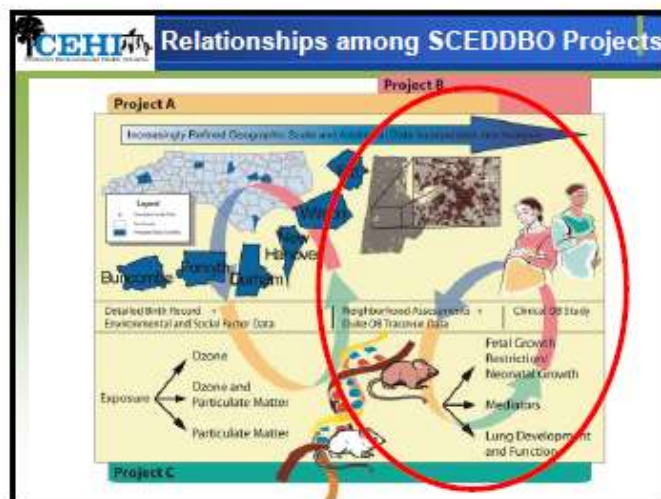
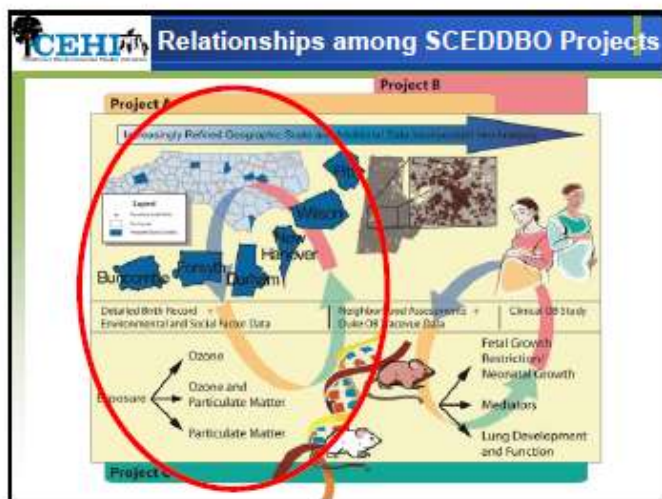
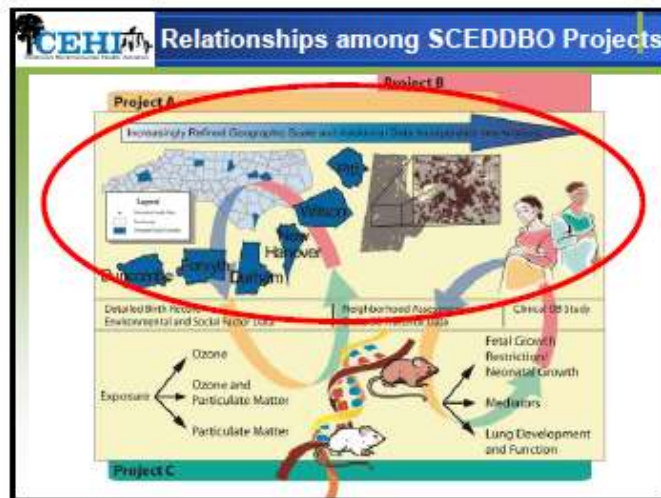
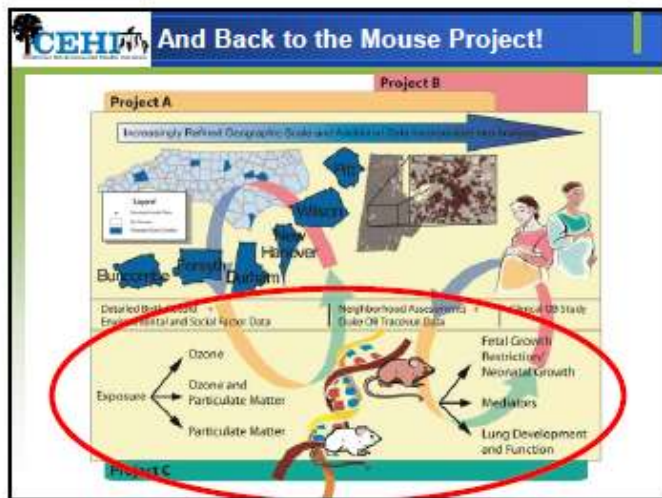
Study Sites Showing Approximate Locations

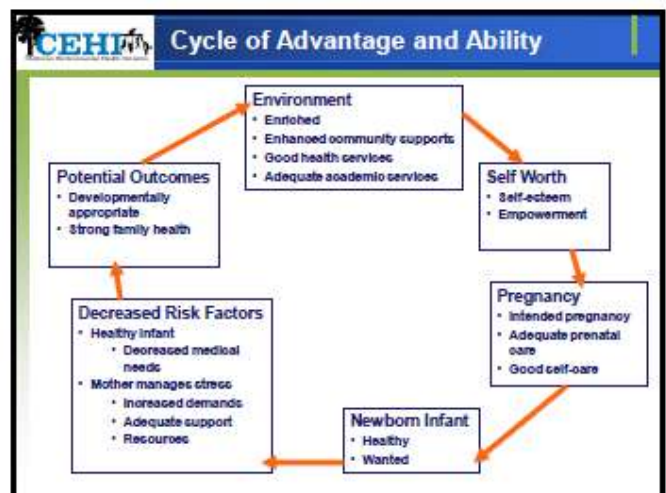
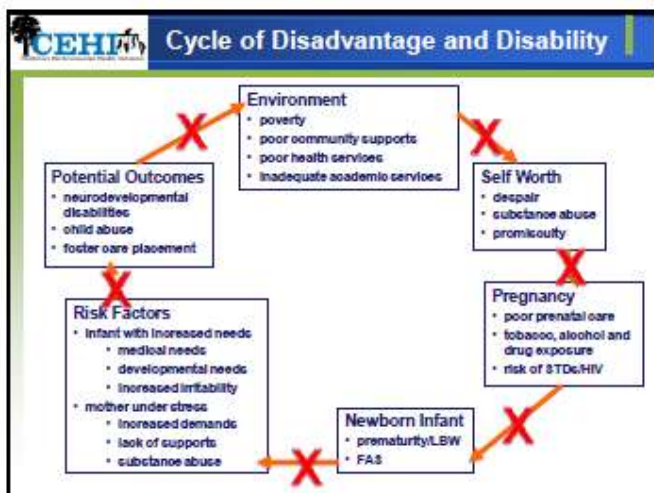
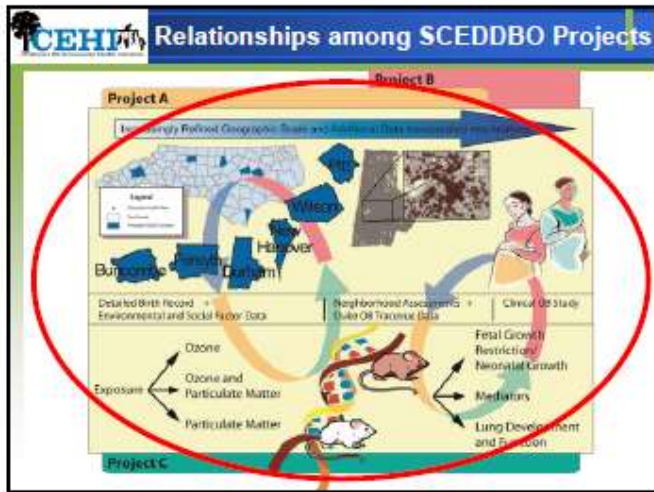
- Harvard Study Site: Tar Creek, Oklahoma
- Illinois Study Site: Green Bay, Wisconsin

Southern Center on Environmentally-Driven Disparities in Birth Outcomes

The central mission of SCEDDBO is to determine how social, environmental, and host factors jointly contribute to health disparities.









Students

- Gain exposure
- Gain experience
- Meet other scholars
- Learn cycle of research
- Opportunity to present
- Opportunity to publish
- Collaborate closely with faculty
- Understand how little we know
- Learn how to ask questions
- Build momentum for career



What students say....

"The BTC experience was a highlight of my undergraduate career. It provided me with concrete experience that clarified what the full research experience is like from start to finish. I appreciated the opportunity to work so closely with Dr. Maxson, to improve my writing skills, and to develop public speaking skills. Not to mention, I loved "packaging" and sharing the work we had been doing for so many years. I liked having the chance to disseminate information—I felt very fortunate to have that experience. From a practical standpoint, I also think it enhanced my application in the job market to have that type of experience under my belt. This experience made me excited about research—and is in fact one of the reasons I pursued a job with a research corporation."



What students say....

"Participating in the BTC conference helped me to develop my future academic and career goals along with my understanding of environmental health disparities. As an undergraduate senior, being part of the BTC conference gave me insight into the different paths that I could pursue within public health after college. I was both inspired and encouraged to see the diversity of projects from other BTC participants. These included students of medicine, law, and even architecture. It was especially rewarding for me to be able to present my work to such an esteemed audience."



What students say....

"The BTC conference also expanded my understanding of environmental health disparities and how they can evolve into a cycle of disadvantage and disability among vulnerable children. One of my favorite memories I have of my BTC experience is Leslie's impassioned appeal at the end of the conference. Leslie wrapped up the afternoon with heartfelt appreciation for our presentations as he expressed his encouragement to see young people continuing the work of his generation. His challenge to us to carry on our efforts left a lasting impression that motivates me to continue pursuing a future in public health."



Mentors

- Build relationships
- Renew excitement, re-ignite fire
- Pass on knowledge
- Share passion
- Collaboration
- Mentorship
- Opportunity to make a difference



Acknowledgements

- Southeast Pediatric Environmental Health Specialty Unit, Emory University
- Institute for the Study of Disadvantage and Disability
- Children's Environmental Health Initiative, Duke University
- EPA award RD-83329201-0
- Break the Cycle faculty

<http://www.nicholas.duke.edu/cehi/>

I. Prenatal Projects

Effects of Environmental Exposures on Pulmonary Development in a Mouse Model

Duke University, Trinity College, Department of Pediatrics and Psychology

Farah Dadabhoy, Student; Pamela Maxson, Richard Auten, Faculty Mentors

Poverty and socioeconomic disadvantage are associated with environmental inequalities such as exposure to hazardous air pollutants. Children from low income communities living in highly polluted cities may exhibit higher rates of depression, anxiety, and attention disorders. Our study used an animal model to determine the effects of prenatal and early post natal toxin exposure on neurocognitive outcomes. Behavioral tests were conducted on groups treated with traffic related air pollutants, ozone and diesel, to assess if multiple agent exposures had synergistic effects on neurocognitive development. Animals exposed to the pollutants developed maladaptive responses later in life. Our findings show that perinatal brain development is susceptible to the toxic effects of air pollution. Enriching the prenatal, postnatal and childhood environments may break the cycle of disadvantage. Educational enrichment programs aimed at enhancing specific neurocognitive functions offer the opportunity to bridge disparities in mental health, academic achievement, and cognition.



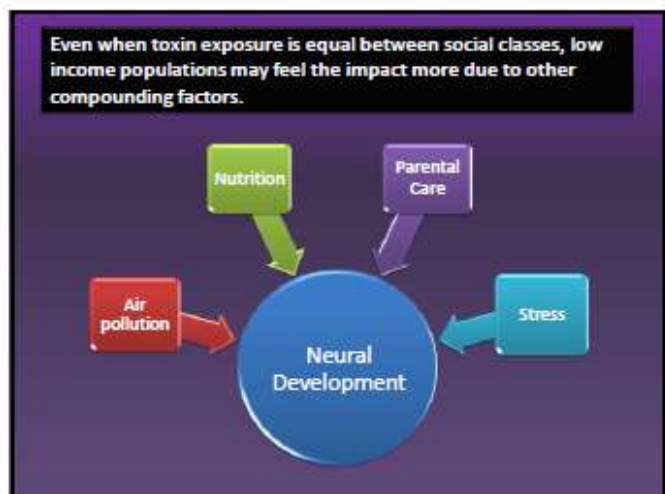
The link between disparity, pollution and cognition...

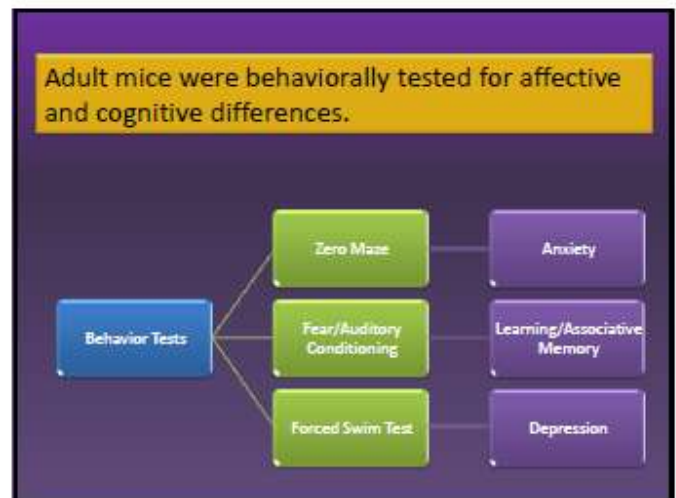
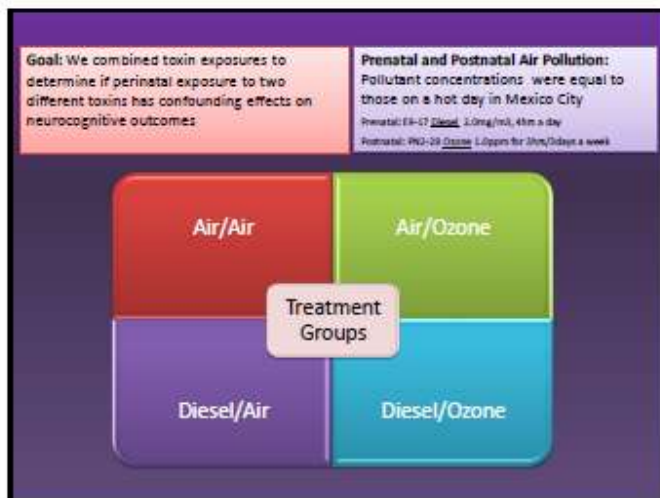
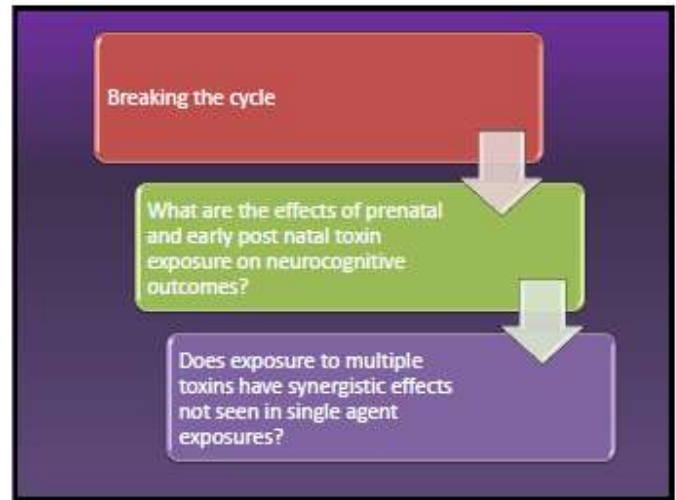
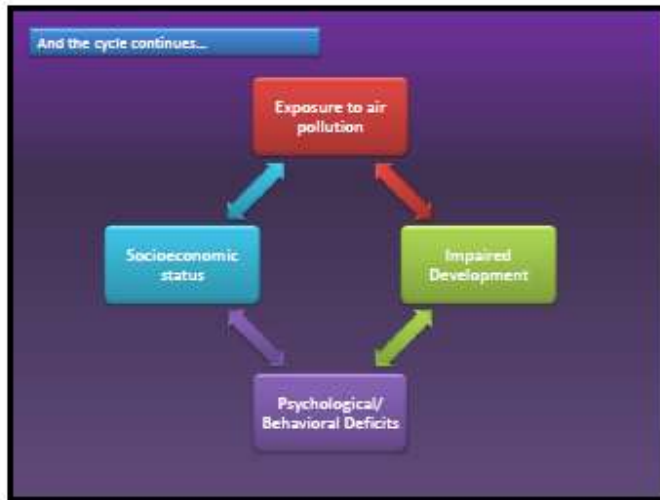
Disadvantaged groups are more likely to:

- live in areas of greater air pollution
- live in the vicinity of polluting industries and waste sites
- and may be exposed to higher levels of toxins

Children and adolescents living in polluted areas show higher rates of:

- depression
- anxiety
- attention problems
- conduct disorders

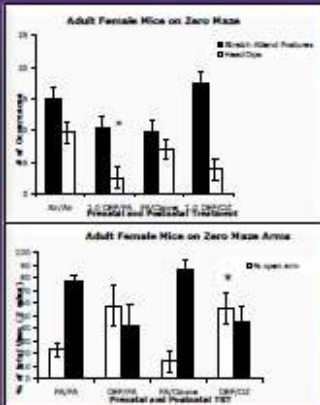




Zero Maze : Anxiety Behaviors in Females



Diesel exposed females exhibited increased freezing in the light – indicative of a maladaptive response to a potentially threatening situation.



Zero Maze : Anxiety Behaviors in Males



- Males exposed to only prenatal diesel spent more time in the well-lit open arm of the elevated zero maze.

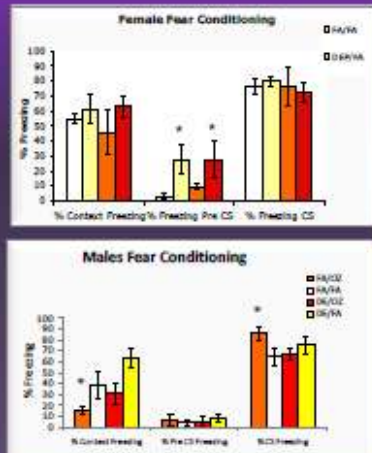
Is this a maladaptive response? Disregarding important cues from the environment

Fear Conditioning

- Learning and Memory

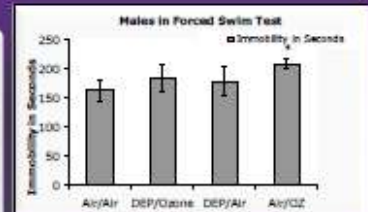
- Males respond to ozone while females respond to diesel
- Females froze more in the novel context, even before the tone went off
- Males froze more in the original context and in response to the predictive tone.

Is this impulsive behavior? Are the females transferring a fear response acquired to a particular stimulus to another stimulus?



Forced Swim Test

- Indicator of depressive behavior



Males exposed to ozone exhibit increased freezing indicative of depressive behavior.

Breaking the Cycle...

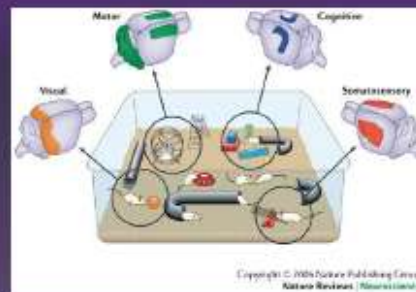


Environmental Enrichment:

- Environmental enrichment (EE) is defined as a combination of complex inanimate objects and social stimulation (Van Praag et al., 2000).
- Animals maintained under enriched conditions have better memory and learning abilities than those housed under standard conditions (Pryce et al., 2002)
- High anxiety like behavior induced by prenatal stress can be reversed by postnatal EE treatment (Koehl et al., 2002; MorleyFletcher et al., 2003)

Breaking the Cycle...

Environmental Enrichment: the science



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 Nature Reviews | Neuroscience
 Nairanjan and Henner Nature Reviews Neuroscience 7, 107-110 (September 2006) | doi:10.1038/nrn1071



Breaking the Cycle...

Intervention: from mouse to man:

Improving care during the prenatal and post natal periods:

- Stress management for expecting mothers
- Nutritional Supplements
- Maternal awareness/ education

Childhood and Adolescence:

- Materials: Books, classes, computers programs for cognitive stimulation
- After school education and activities
- Adolescent support programs

Adulthood:

- Parent Education programs
- Community support



Acknowledgements


- Southeast Pediatric Environmental Health Specialty Unit, Emory University
- Institute for the Study of Disadvantage and Disability
- Children's Environmental Health Initiative, Duke University
- EPA award RD-83329201-0
- Staci Bilbo, Ph.D.

Long Term Detriments of Gulf War Exposures and Pregnancy Outcomes: A Retrospective Study of Iraqi Immigrants and Refugees

Wayne State University, School of Medicine

Alexis Drutchis, Student; Bengt Arnetz, Faculty Mentor

Long term detriments of war extend far beyond the palpable effects on landscape, infrastructure and culture, as war related exposures have lingering consequences on health and pregnancy outcomes. While many studies have been conducted dating back to World War II, Vietnam and more recently Bosnia and 9-11, there have been few studies that combine not only environmental toxin exposures and psycho-social stress, but also have gauged duration of exposure within the stress scale. Surveying the Iraqi immigrant and refugee population of Dearborn, Michigan and using still-birth, low birth weight, pre-term delivery and congenital abnormalities as the outcome measures; this study seeks to investigate the effects of reported Gulf Wars exposures on pregnancy outcomes. We hypothesize that this study will not only show that the unique environmental and psycho-social impacts that the Gulf War encompasses have had adverse impacts on pregnancy outcomes, but that those with increased duration of exposure will have similar increases in adverse pregnancy outcomes. Through this research, it is our hope to increase our global knowledge of the impacts of war on health and more specifically the health of those yet to be born. Increasing our knowledge base of these issues will not only increase our ability to be informed advocates, but also will raise our concern and capacity to care for patients from war-torn regions in the future.




REPORTED GULF WAR EXPOSURES AND PREGNANCY OUTCOMES: A RETROSPECTIVE STUDY OF IRAQI IMMIGRANTS AND REFUGEES

Break the Cycle 6

Alexis Drutchas
Dr. Bengt Arnetz,
Dr. Robert Sokol &
Dr. Hikmet Jamil

BREAKING THE CYCLE STUDY OBJECTIVES

- 1) Assess the effects of Gulf War stress exposures, both environmental and psycho-social on pregnancy outcomes.
- 2) Draw a comparison to previous studies regarding pregnancy outcomes in historical times of war and conflict.
- 3) Evaluate the cycle of disadvantage and disability as it pertains to war, pregnancy and fetal viability and health.




BACKGROUND – WHAT IS UNIQUE ABOUT WAR, PREGNANCY & HEALTH?

- Lasting detriments of war extend beyond physical effects.
- Pregnant women are considered a “vulnerable population”
- Potential for many new harmful environmental exposures.
- New maternal stressors such as arrest or death of the father, violence lack of resources and access to health car.

WHAT HAVE PRIOR RESEARCH STUDIES TAUGHT US?

- Study of Vietnam Veterans
- Bosnia and Herzegovina
- Chernobyl and Japan
- 9/11
- Broader Picture: Lower weight at birth has been linked to increased fetal mortality and neonatal mortality.



BRIEF TIMELINE OF THE GULF WAR



- August 2, '90: ~100,000 Iraqi troops invade Kuwait.
- August 6: U.N. Security Council imposes a trade embargo on Iraq.
- August 7: The U.S. launches Operation Desert Shield.
- September 14: Great Britain and France deploy troops.
- January 15, '91: Iraq ignores UN ultimatum ~ 580,000 foreign & 540,000 Iraqi troops.
- January 22: Iraqi troops begin blowing up Kuwaiti oil wells.
- Cease fire was signed by June of 1991.
 - Within a few months of their return many US veterans begin to express concerns about new health symptoms.
 - Approximately 697,000 US military personnel alone were involved in the Gulf War.

Our Study Adds To Our Knowledge Base of the Effects of Stress on Pregnancy Outcomes

- Self reported exposure data on specific environmental and psycho-social stresses.
- Self reported data on duration of exposure that is used in calculation of the stress index.
- Self reported data on birth outcomes.
- Subsets amongst respondents based on when they came to the U.S.
- Filling an inequity that exists for information looking at Iraqi reproductive health for those subjected to more long term exposures than US Veterans.



HYPOTHESIS

1. Study participants with increased cumulative adverse exposures, both environmental, psycho-social and combined, will have increased adverse pregnancy outcomes.
2. Participants who came to the US after 1991 will have increased adverse birth outcomes.

METHODS – HOW WERE PARTICIPANTS RECRUITED?

- Participants represent various geographic and socioeconomic conditions.
- End result: a list of 5490 addresses to randomly select a sample of 7.5%.
- Inclusion criteria:
 - 18 years of age or older at the time they emigrated from Iraq.
 - If the emigration ~1991 or later, participation also required that the person had been residing in Iraq during the time 1991 period, and was 18-years-old or older in 1991, or during the post-1991 time period spent in Iraq.
- Of 411 addresses selected, 44 residents did not fit the study criteria.
- Out of 367 eligible candidates, 17 (4.6%) declined to participate. The reasons were: lack of time (n=9), lack of interest in the study (n=7), or no reason provided (n=1).
- Final Participants: 350 men and women (response rate of 95%).

SURVEY USED & DATA COLLECTION



- Survey used was initially created through a joint effort between the Iowa Persian Gulf Study Group and the CDC.
- The structured survey questionnaire used was adapted from a validated instrument that has been used in a series of large-scale surveys.
- Participants were interviewed in Michigan by OBGYNs who spoke Arabic.



WHAT DID THE SURVEY COVER: ENVIRONMENTAL AND PSYCHO-SOCIAL EXPOSURES & BIRTH OUTCOMES

- Environmental toxin question stem: "During the Gulf War did you have direct contact with the following exposure?"
 - Smoke from oil burning fires, depleted uranium, burning trash, etc.
 - Follow up questions
- Psycho-social stress: participants were asked questions regarding their exposure to traumatic events
 - Exposure to dead bodies, coming under small arms fire, etc.
 - Certain psychological experiences such as loss of appetite, loss of interest, feelings of depression or hopelessness, etc.
 - The respondents were classified as having experienced at least one of these stressors or not, with a total of nine such items.

STRESS SCALES

- Environmental stress score: calculated by aggregating the respondent's answers to 12 specific environmental questions.
 - Data was then analyzed with regards to hi versus low exposure.
 - Mean = 3.57. Exposure above 3.57 was considered Hi exposure, and below was considered Low exposure with a maximum of 100.
- Integrated Psychosocial scale: calculated by aggregating the respondent's answers to 9 specific psychosocial questions.
 - Cronbach's alpha of 0.80
 - Mean = 4.58. Exposure above 4.58 was considered high exposure, and below 4.58 being considered low exposure, which a maximum score of 100.

ADVERSE PREGNANCY OUTCOMES USED

- Congenital Abnormalities
- Still Birth
- Preterm Birth
- Low Birth Weight



WHAT DID WE FIND?

SSA12

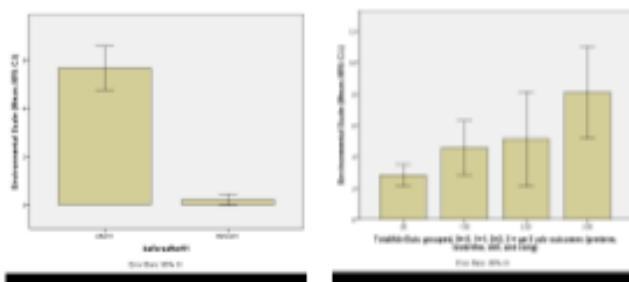
Adverse Pregnancy Outcome	Female Frequency (Percent)	Male Frequency (Percent)	Combined Frequency (Percent)
Congenital Anomalies	37 (27.0 %)	22 (12.9 %)	59 (19.2)
Still Birth	2 (1.5 %)	2 (1.2 %)	4 (1.3%)
Preterm Birth	13 (9.5 %)	9 (5.3 %)	22 (7.2%)
Low Birth Weight	11 (8.0 %)	12 (7.1 %)	23 (7.5%)

STRESS EXPOSURES WERE FOUND TO HAVE AN ASSOCIATED WITH ADVERSE PREGNANCY OUTCOMES

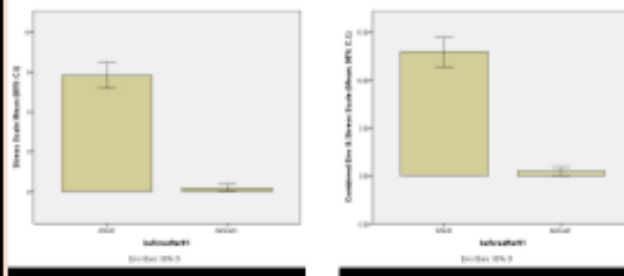
Adverse Outcome Before & After 1991	Stress Scale Significance	Environmental Stress Scale Significance	Combined Scale Significance
Still birth Before	.012	.292	.078
Still Birth After	0.29	.019	.066
Cong. Ab Before	n/a	n/a	n/a
Cong. Ab After	0.02	0.05	0.02
Pre-term Before	0.65	0.42	0.61
Pre-Term After	0.19	0.001	0.01
Low Birthwt. Before	0.67	0.69	0.99
Low Birthwt. After	0.06	0.002	0.01

SSA16

REPORTED ENVIRONMENTAL EXPOSURE STRESS



PSYCHO-SOCIAL STRESS & COMBINED STRESS



PREDICTORS OF ADVERSE PREGNANCY OUTCOMES

Model	Standardized Coefficients	t	Sig.
	Beta		
(Constant)		2.504	.013
Advoutcb91	-.064	-1.161	.247
Stress Scale	-.148	-1.743	.082
Environment Scale	.304	3.900	.000
Gender	-.139	-2.290	.023
Education	.030	.539	.591
Smoke or Not	-.004	-.075	.940
Three Study Group	-.136	-2.024	.044

STUDY LIMITATIONS & FOLLOW UP

- Age of participant when pregnant.
- Birth order and its relationship to pregnancy outcome is unknown
- Follow up on specific environmental exposures and birth outcomes.
- Follow up with biological markers of stress.

BREAKING THE CYCLE



BREAKING THE CYCLE

- Increasing our understanding of the association between stress & adverse pregnancy outcomes.
- Increasing our global knowledge of the impacts of war on health and more specifically the health of those yet to be born.
- Enhances our ability to be informed advocates → Raising our concern and capacity to care for patients from war and conflict ridden regions.
- Political and community advocacy can be enhanced with a stronger foundation of knowledge regarding adverse effects of war.
- Create a stronger voice, helping us as pediatricians, OBGYNs, mental health professionals, etc. to add our voice.

Fetal Deaths in the State of Georgia: A Study of the Social and Economic Determinants of Fetal Mortality Rates in Georgia Counties from 1994 to 2006

Emory University, Rollins School of Public Health
Robert Brown, Student; Carol Hogue, Faculty Mentor

My project examines the social and economic determinants (i.e., racial residential segregation, median income, educational attainment) of fetal deaths in Georgia from 1994 to 2006. For this project, I intend to examine and analyze fetal deaths in the constituent counties of the state of Georgia from 1994 to 2006. Georgia has the seventh highest infant mortality rate among all of the states of the nation (8.5 infant deaths per 1,000 live births in 2004). This study will be a secondary data analysis of maternal data linked with relevant census or other county-level data. I hope to be able to pinpoint the counties with the highest fetal death rates and to reveal which social and economic factors are statistically significant in determining fetal deaths and in affecting the racial disparity in fetal deaths in Georgia.

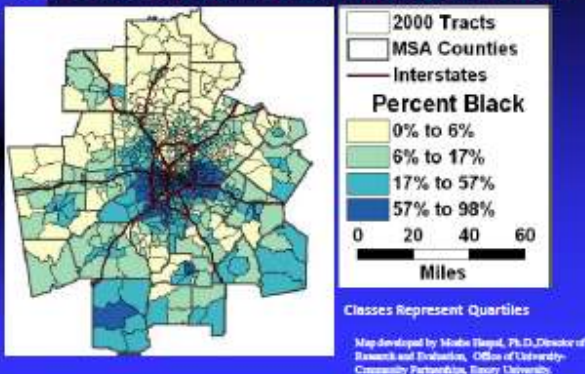
STILLBIRTHS IN GEORGIA: A STUDY OF THE SOCIAL AND ECONOMIC DETERMINANTS OF THE OCCURRENCE OF STILLBIRTHS IN GEORGIA COUNTIES FROM 1994 TO 2006

Robert Brown, PhD
Carol Hogue, PhD MPH *Mentor*
Emory University
Rollins School of Public Health
May 5, 2011

My Research Question

- How do social and economic factors and racial residential segregation affect the occurrence of stillbirths in Georgia?
- My research hypothesis and general argument is that racial residential segregation and major social and economic factors increase the racial disparity in stillbirths in Georgia counties.

The Nature of Race and Residence in the United States as Shown by the Atlanta Metropolitan Area



The Concept of Racial Residential Segregation

- Racial Residential Segregation is the segregation of the residential areas of African Americans.
- Notably the nonrandom ordering in the residential patterns of Blacks and Whites throughout the United States.
- There are several different ways of measuring racial residential segregation. Commonly measured by an index – the index of dissimilarity (The index is a scale ranging from 0 (no segregation) to 100 (complete segregation)).
- The Index of Dissimilarity is a demographic measure of the evenness with which two groups are distributed across the component geographic areas (usually census tracts) that make up a larger area, for my purposes, Georgia counties.

My Conceptual Argument on Racial Residential Segregation and its Negative Aspects that serve to increase the Racial Disparity in Stillbirths in the U.S.

-Racial Residential Segregation will be measured by the indices of dissimilarity.

>I argue that racial residential segregation has caused the development of environments that are highly negative for many Black residents, due to racial discrimination. Many predominantly Black areas have often been neglected:

- > less government resources devoted to them;
- > greater concentration of poverty and lower availability of economic and employment opportunities in comparison to predominantly White areas;
- > under-resourced schools;

My Conceptual Argument on Racial Residential Segregation and its Negative Aspects that serve to increase the Racial Disparity in Stillbirths in the United States, continued

>Occurrence and concentration of violent crime

>Lack of quality food for purchase

>Lack of safe, open spaces for fresh air and recreation

Study Background

>Idea that living in certain environments → increased stress and allostatic load → negative health outcomes.

> The study is based on a growing literature on the social determinants of health.

>Research that examines the environments into which people are born and in which they live and exist.

> LaVeist (1990, 1993) found that segregation exhibited a significant, positive effect upon Black IMR in a sample of US cities – Black IMRs were higher in highly segregated cities.

Methods, Data, and Proposed Analysis

> The primary health outcome is the occurrence of stillbirths.

> The study is an ecological, over time study of fetal death and birth data in the counties in the state of Georgia.

>The data are merged with contextual data reflecting social and economic factors that I argue negatively affect mothers and increase the odds of having a stillbirth.

>Logistic regression is used to test these potential associations.

>The study is from 1994 to 2006.

Selection Criteria for Study Sample

- Examined the birth outcomes of non-Hispanic Black and White mothers.
- Selected fetal deaths of gestation greater than or equal to 20 weeks of gestation.
- The study examines 1,419,767 Total birth outcomes: 12,114 stillbirths and 1,407,653 live births.
- The study is from 1994 to 2006.

Descriptive	Residential Segregation, 2000(Numbers of counties or %:)	Median Household Income, 1989(Numbers of counties or %:)	% Persons in each County who are high school graduates or higher, 1990 (Numbers of counties or %:)
1	1,147,078(81.02%)	1,205,938(84.96%)	1,199,306(85.13%)
0	268,791(18.98%)	213,430(15.04%)	209,544(14.87%)
Missing	3,898	399	10,917
Mean	27.9	\$23,354	60.4
Median	26.3	\$21,574	58.4
Minimum	0.0	\$13,709	42.8
Maximum	79.5	\$50,167	88.5
Percentiles:	17.9	\$19,213	54.5
25%			
50%	26.3	\$21,574	58.4
75%	36.1	\$25,736	64.1

Adjusted Odds Ratios for Stillbirth, Georgia, 1994-2006

Variable	aOR	95% CI
Black	2.05	1.97,2.14
Mom's Age:		
15-19	0.95	0.896,0.996
20-29	ref	
30-39	1.25	1.20,1.31
40+	1.92	1.71,2.14
Unmarried	1.67	1.60,1.75
Year	0.98	0.98,0.99
More segregation	0.91	0.86, 0.95
Greater income	0.98	0.91,1.04
More educated	1.01	0.95,1.09

Key Study Results

- Being black was associated with a twofold higher odds of having a stillbirth among Georgia African American mothers.
- Residential segregation above the median was significantly associated with *decreased* risk of stillbirth, after controlling for individual-level and other ecological variables.

Other Study Results

- Stillbirth risk declined slightly from 1994-2006.
- Individual risk factors (older age, being unmarried) were significantly associated with stillbirth risk.
- Ecological variables of education and income were NOT independently associated with risk of stillbirth.

Conclusion

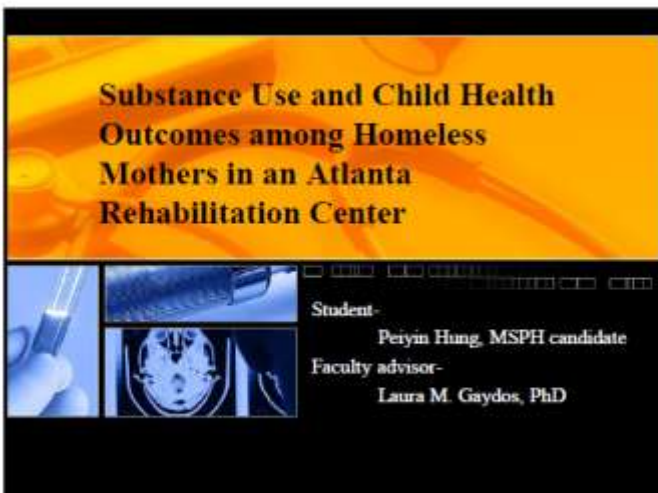
- Racial disparity in stillbirth risk was confirmed among Georgia births.
- Racial segregation is a novel, ecological risk factor that may decrease stillbirth risk – the reason is unclear, and this finding must be replicated and further studied.

Maternal Substance Abuse and Child Health Outcomes in Homelessness

Emory University, Rollins School of Public Health

Peiyin Hung, Student; Laura Gaydos, Faculty Mentor

Limited literature to date has addressed the relationship between substance use and birth outcomes among the homeless in Atlanta. This study investigates the association between homeless maternal histories of substance use and reported child health outcomes. We surveyed 73 clients from the Mary Hall Freedom House in Atlanta, GA, 56 of whom had available pediatric data for their children. We compared the prevalence of multiple child health outcomes by substance use history for all 56 mothers and compared prevalence findings to national or state normative levels by X^2 or Fisher exact tests. Exposure to substance use or tobacco use during pregnancy was significantly higher among mothers who were single, less educated, unemployed, or whose spouse deceased. Maternal substance use during pregnancy was inversely associated with child health outcomes, particularly for child cognitive and behavioral problems. Care providers should ensure homeless mothers are provided appropriate interventions-career services, health literacy program, substance use rehabilitation, and mental health consultants can be implemented to help address this phenomenon in the homeless population.



Substance Use and Child Health Outcomes among Homeless Mothers in an Atlanta Rehabilitation Center

Student-
Peiyin Hung, MSPH candidate
Faculty advisor-
Laura M. Gaydos, PhD

Did you know?

- Number of U.S. homeless families is **increasing** (2000-2008)
 - Homelessness increases in most U.S cities
 - Rate of families among the U.S. homeless increases in all cities
- Average number of children in a **homeless family** is 2.1
- 2% children in the U.S. are **homeless** (2009)
- Homelessness is an important contributor for many child health issues
 - 1 in 3 homeless people are dependent on alcohol, drugs or use tobacco. (2009)
 - **Substance abuse** is usually a cause of homelessness.

2

Study Objectives

- Describe prevalence of child functional problems relevant to homeless maternal substance or tobacco use
- Examine relationships between homeless maternal substance/tobacco uses during pregnancy and child health outcomes
- Describe the environmental factors of homeless mothers using substances

3

Study Questions

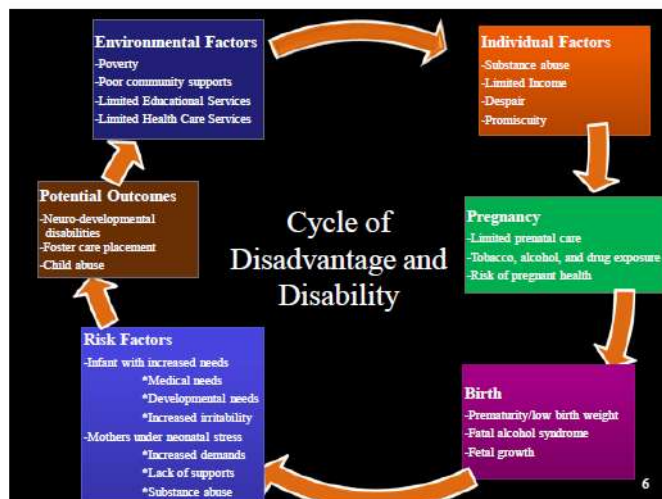
- Are children of homeless mothers with substance use during pregnancy more likely to have health problems than children of mothers who did not use substances during pregnancy?
- Are children of homeless mothers with substance uses more likely to have health problems than the general population?

4

Methodology

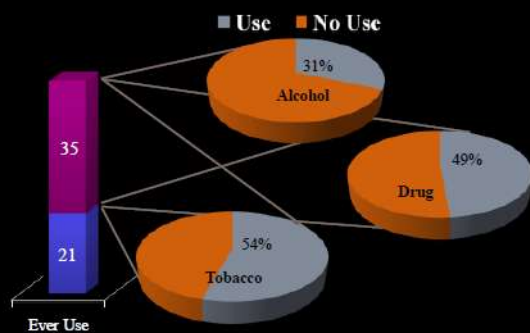


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Substances/Tobacco Use among Sample Homeless Mothers



7

Child Health Outcomes

- Physical disability
- Learning or cognitive disability
- Development problems
- Behavior problems
- Vision problems
- Speaking problems

**ALL sample children
were reported to have some
health problems.**

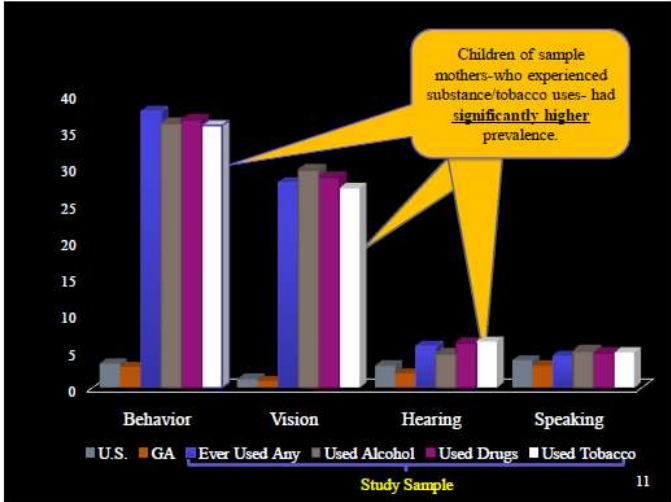
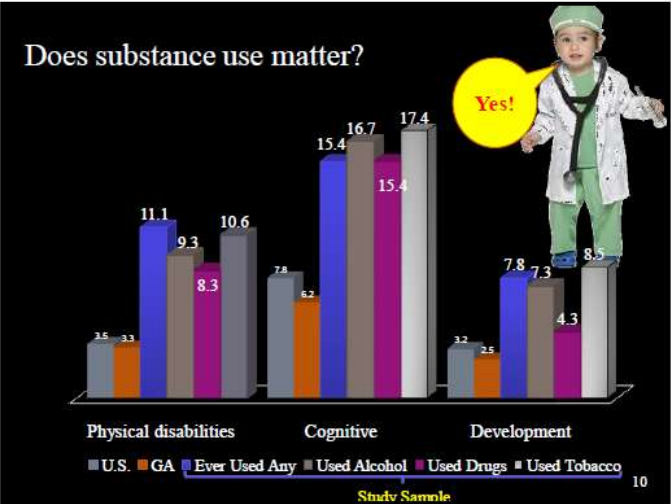
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IMPACT OF HOMELESS MATERNAL SUBSTANCE USE ON CHILD HEALTH OUTCOMES

- Comparison to general population in the United States and the state of Georgia

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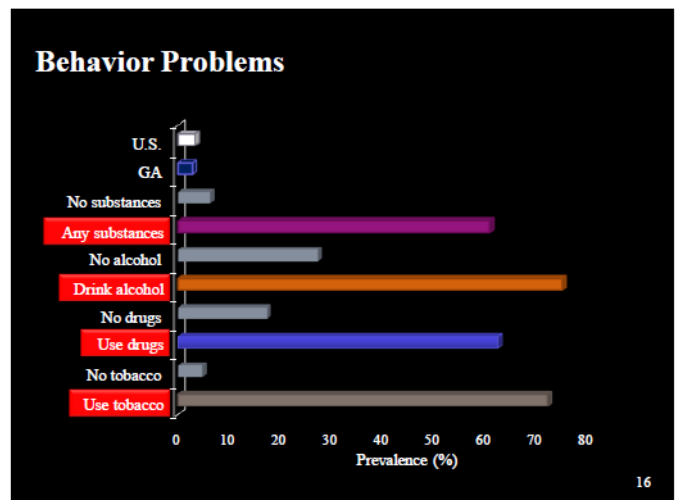
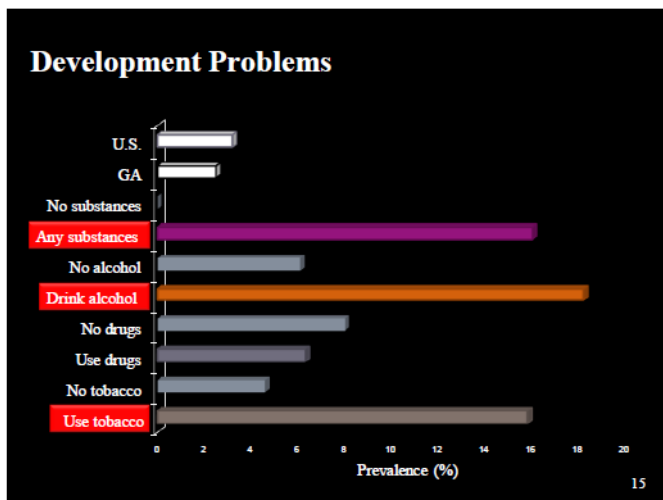
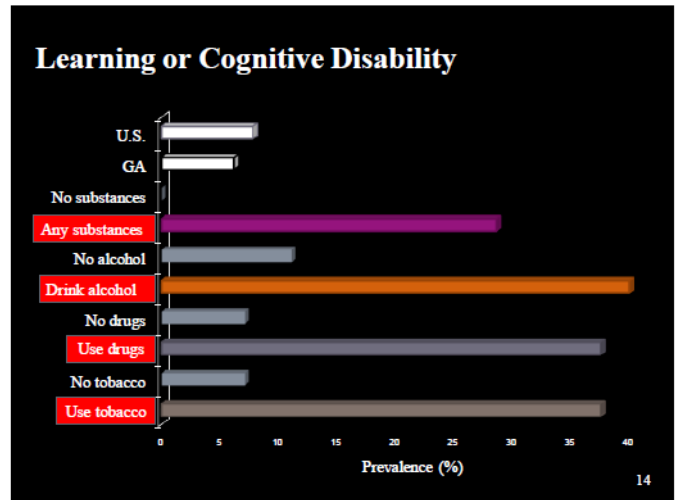
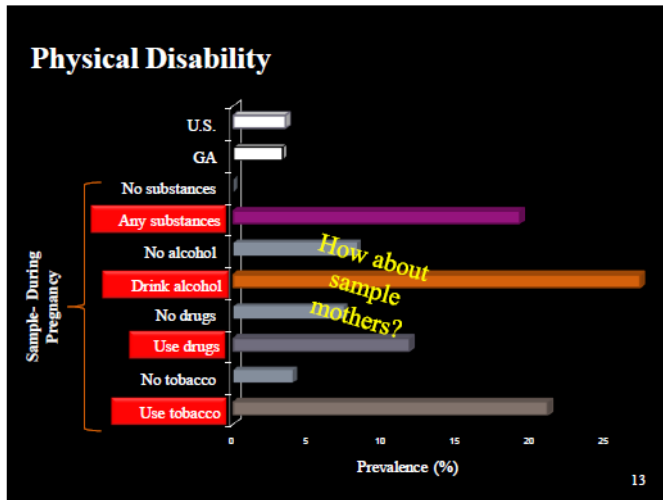




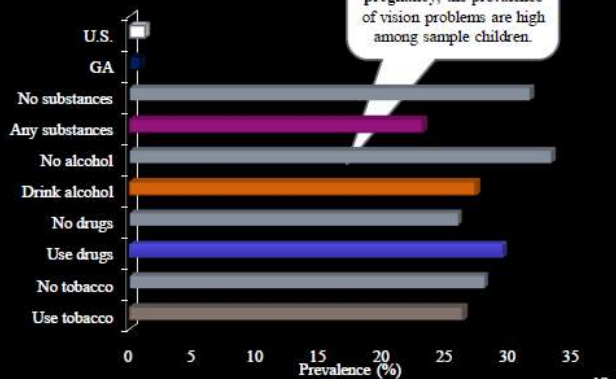
IMPACT OF HOMELESS MATERNAL SUBSTANCE USE ON CHILD HEALTH OUTCOMES

USE DURING PREGNANCY!

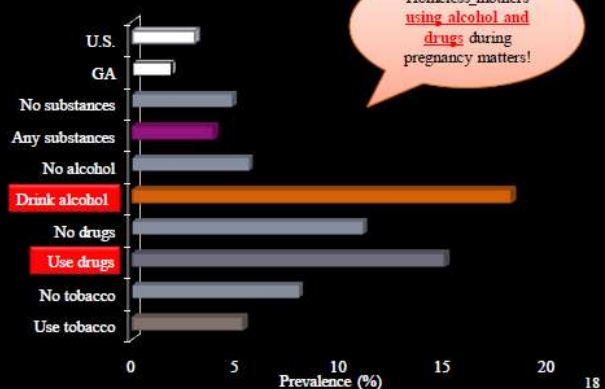
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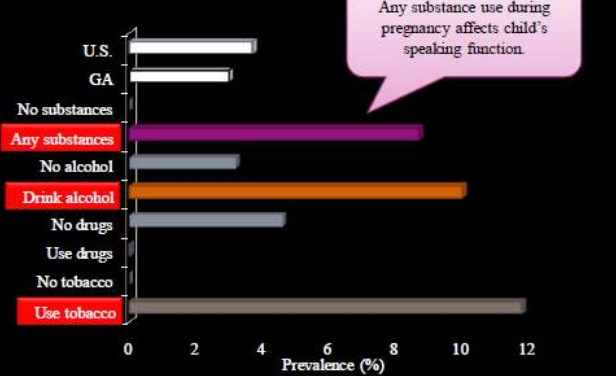
Vision Problems



Hearing



Speaking



WHAT PREDICTS SUBSTANCE USE DURING PREGNANCY AMONG HOMELESS MOTHERS?

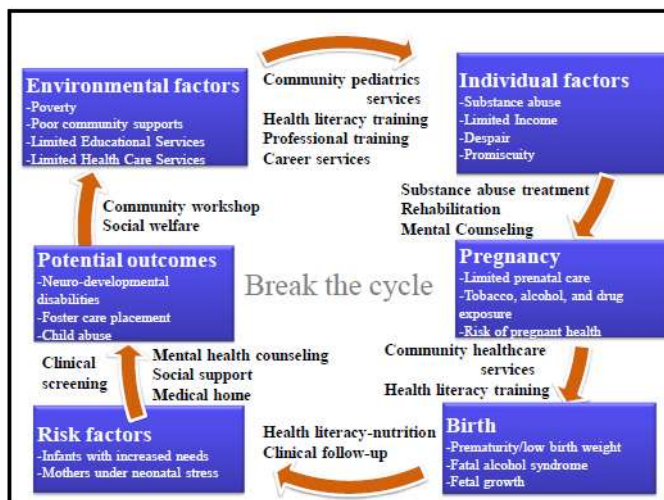


Demographics of mothers with substance uses during pregnancy		Alcohol (23%)	Tobacco (43%)	Drugs (39%)
	<u>Race</u>			
	Black (N=34)	21%	42%	40%
	White (N=13)	31%	50%	38%
	<u>Occupation</u>			
	Unemployed (N=34)	32%	44%	42%
	Employed (N=12)	0%	36%	20%
	<u>Marriage</u>			
	Single (N=25)	24%	55%	43%
	Married (N=3)	0%	33%	0%
	Have a partner (N=7)	14%	29%	43%
	Divorced (N=7)	14%	29%	33%
	Spouse deceased (N=5)	60%	40%	40%
<u>Education</u>				
	Less than 12 years (N=20)	30%	45%	53%
	12 years (N=11)	18%	33%	33%
	More than 12 years (N=16)	19%	47%	25%
<u>Pediatrician Accessibility</u>				
	Have access barriers (N=7)	0%	33%	20%
	Due to cost (N=7)	0%	33%	20%
	Do not have access barriers	33%	41%	39%

Conclusion

- Homeless child problems
 - Development
 - Behavioral problems
 - Vision problems
- Environmental disparity
 - Unemployment rates
 - Marriage status
 - Education levels

22



Special thanks to~

- Dr. Laura Gaydos
- Break the Cycle team
- Mary Hall Freedom House
- Institute for the Study of Disadvantage and Disability (ISDD)

References

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Examining the Association between Nutrition and Psychosocial Factors in First-Time Pregnant Women: A Cross-Sectional Study

Tulane University, School of Public Health

Jenny Hurst, Student; Paula Zeanah, Faculty Mentor

Examining the Association between Nutrition and Psychosocial Factors in First-Time Pregnant Women: A Cross-Sectional Pilot Study is a project designed to "break the cycle" of environmental health disparities in vulnerable populations by examining the possible association of maternal depression and food access insecurity. Healthy prenatal nutrition is widely acknowledged as an important influence not only on pregnancy health, but also on infant and child health. Low socioeconomic status negatively impacts access and availability of healthy food. Maternal depression and food access insecurity are strongly associated with vulnerable populations and can lead to a variety of adverse health outcomes. Recent studies have linked prenatal maternal depression with poor birth outcomes, such as low birth weight and prematurity. This study will utilize women who have enrolled in the Louisiana Nurse Family Partnership Program, which serves first-time low-income pregnant women. An Edinburg Depression screening scale, a nutrition-needs questionnaire, a 24-hour food recall, and a nurse assessment will be utilized to measure the association of depression and nutrition risk.

Examining the Association between Nutrition and Psychosocial Factors in First-Time Pregnant Women

Student Researcher: Jenny Hurst
Faculty Advisor: Paula Zeanah
Tulane University School of Public Health and Tropical Medicine
Louisiana Office of Public Health: Maternal and Child Health



Outline

- Background and Significance
- Objective and Specific Aims
- Data Sources
- Study selection and data abstraction
- Analysis Methods
- Results
- Discussion
- Limitations



Pregnancy Diet Plan



"Supplement your diet with foods rich in folic acid, such as oranges and dark green leafy vegetables.
"To prevent anemia, consume plenty of lean red meat and beans.
"Eat small but frequent meals.
"Refrain from caffeine and sugary foods.
"Avoid alcohol and raw fish completely.

Background: Nutrition Access

- A recent USDA report found that approximately 17.4 million households in America had difficulty providing enough food due to lack of resources
- New Orleans has an estimated poverty level of 23%; more than double the national average of 11%
- Food Insecurity Indicators
 - Households with incomes near or below the federal poverty line
 - Households with children headed by single parents
 - African-American and Hispanic households

Background: Maternal Depression



- Depression affects 13% of new Moms
- Maternal depression is a mood disorder that begins before or immediately after childbirth
- Maternal depression results in the inability for the mother to adequately care for her young child
- Depression symptoms include appetite changes and a >5% weight gain or loss
- Higher rates of depression are found among urban, young, low-income mothers

Maternal Depression & Food Risk

- Recent studies have hypothesized that more than half of low-income mothers suffer from depression.
- Infants of depressed mothers are at an increased risk for short and long-term negative effects
- Recent studies have linked prenatal maternal depression with poor birth outcomes, such as low birth weight and prematurity
- As both have significant implications for pregnancy and infant health, it is important to explore the relationship between these two risk factors.

Background: Nurse Family Partnership

NFP Serves

- First time, low-income pregnant women and their infants
- Women enroll during the first two trimesters of pregnancy
- Visited weekly or bi-weekly in their home until the infant turns age two

NFP Goals

- Improve Pregnancy Health
- Improve Child Health and Development Outcomes
- Increase the Woman's Economic Self-Sufficiency



Research Questions and Hypothesis

- The research questions include:
 - Is it feasible to identify risk factors systematically and efficiently during nurse home visits?
 - If so, what are the most common nutrition risk factors among first time, low income pregnant women?
 - Is there a relationship between nutrition risk and depression symptoms?
- Hypothesis
 - There is a relationship between depression symptoms, and nutrition risk

Measurement Tools

- **Nutrition Risk Survey**
 - Food Access
 - Food Issues
 - Special Medical Issues
 - Exercise
- **Edinburg Depression Scale**
 - Validated for assessing Prenatal Depression
- **24-Hour Food Recall**
 - Interview which captures what the mother ate and drank during the previous 24 hours
- **Nurse Assessment**
 - Feasibility tool that allows for nurse feedback



Study Population

- Clients enrolled in the Louisiana Nurse Family Partnership Program from 5 different teams in Southern Louisiana
- Less than 28 weeks gestation
- 18 Years or Older
- First-Time Mothers
- Medicaid eligible



Analysis Method

- **Descriptive Statistics**
 - Age, Ethnicity, Depression, Food Access Risk, Gestational Age
- Nutrition Needs Assessment reviewed qualitatively and quantitatively within each of the four categories
- Food Recall reviewed by MCH nutritionist for overall estimate of nutrition
- Nurse Assessment used to assess long-term feasibility and usefulness

Study Population Description

Average Gestation Age: weeks Range: ()	
Race Distribution: African American Caucasian	
Average Age: Range: ()	Number of Moms:
Average Edinburg Scale Score: Range: ()	
General Overall Adherence to Nutrition Guidelines: Below Average	
Average Food Access Score: Range: ()	

Limitations and Future Implications

- Limitations

- Small Sample Size
- Limited Survey Window
- Non-Validated Survey Instrument

- Future Implications

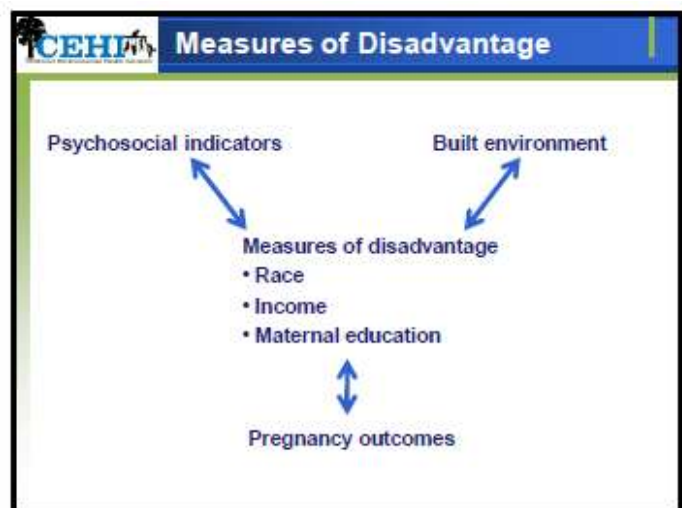
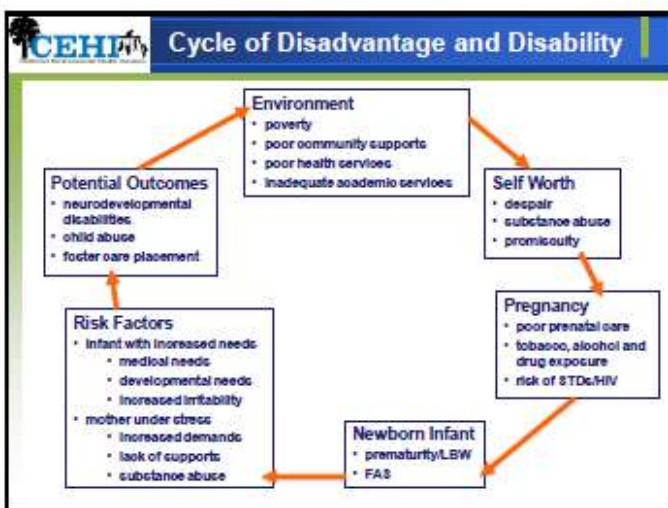
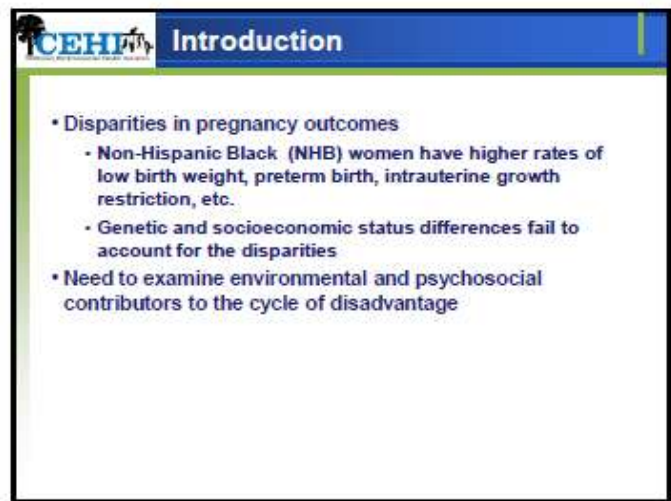
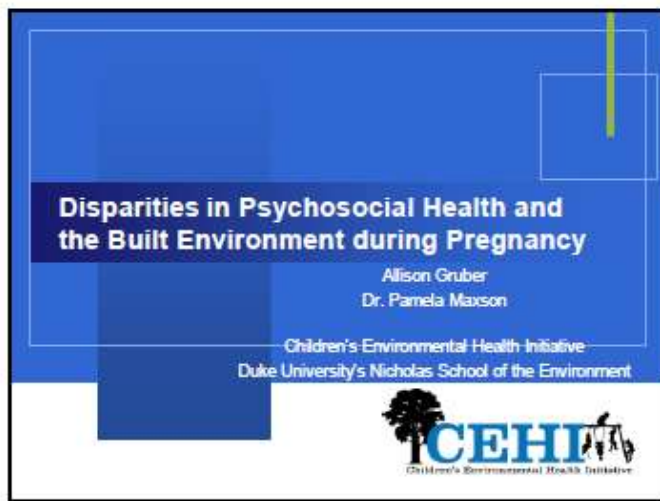
- Encourage Nutrition Consultation on a Regularly Scheduled Basis
- Increase Survey Tool Validity through Factor Analysis
- Provide more Detailed Nutrition Education for Client
- Work with NFP to Promote Depression and Food Risk Awareness

Disparities in Psychosocial Health and the Built Environment during Pregnancy

Duke University, Nicholas School of Environment

Allison Gruber, Student; Pamela Maxson, Faculty Mentor

Despite advances in prenatal care and technologies which have led to an overall reduction in infant mortality, significant disparities in pregnancy outcomes remain. Morbidity and mortality statistics reveal that non-Hispanic black women and their infants suffer a disproportionately high burden of these poor pregnancy outcomes in comparison to non-Hispanic white women. Race and socioeconomic status alone have failed to account for these persistent disparities. Increasing evidence has associated environmental and social factors with poor pregnancy outcomes. This project investigates the joint contributions of environmental and psychosocial factors to the cycle of disparities in pregnancy outcomes in the Healthy Pregnancy, Healthy Baby prospective cohort study of pregnant women in Durham, North Carolina. The results indicate that women who are disadvantaged are exposed to multiple stressors throughout their pregnancy, some of which are in turn related to the pregnancy outcomes of some of these women. We will discuss these disparities and offer suggestions on how to break the cycle of disadvantage and disability.





Research Questions

- Are there disparities in psychosocial health and built environment exposure during pregnancy?
- If there are disparities, how can we break this cycle through interventions addressing environmental and psychosocial factors?



Healthy Pregnancy, Healthy Baby Study

- Prospective cohort study of pregnant women (18-28 weeks) in Durham, NC
 - 1238 NHB, 346 NHW
 - Patient interview, surveys, and electronic medical record review, pregnancy outcomes
- Demographic data
- Psychosocial indices
 - Depression, social support, perceived stress, self-efficacy, paternal support
- Pregnancy outcomes
 - Birth weight
 - Small for gestational age



Community Assessment Project

Project Study Area



- June 2008-August 2008
- 8 field team members
- Trained on ArcGIS
- Recorded data with GPS-enabled devices
- Tax parcel as unit of analysis
- Assigned a value of either "yes" or "no" to presence of each variable

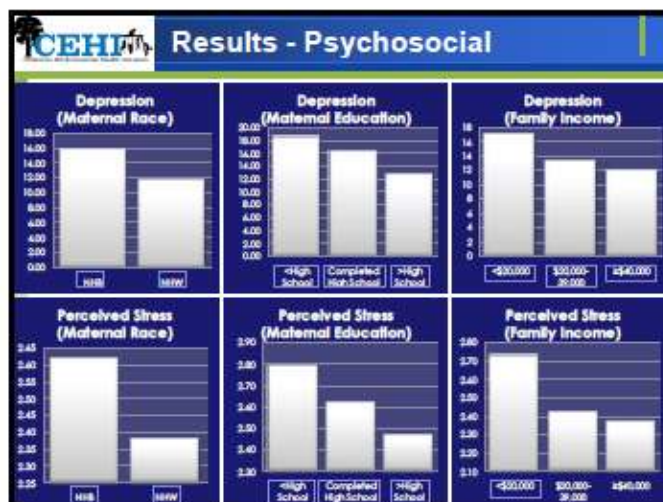
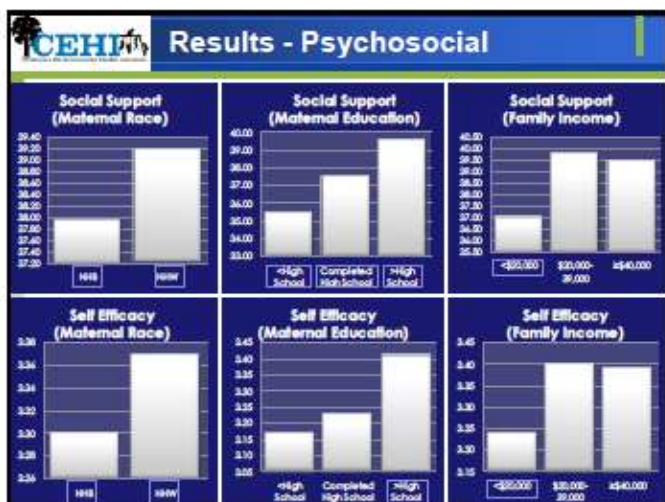
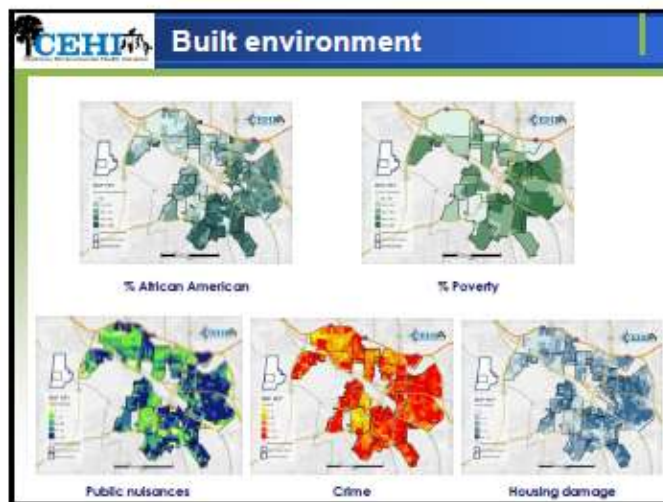


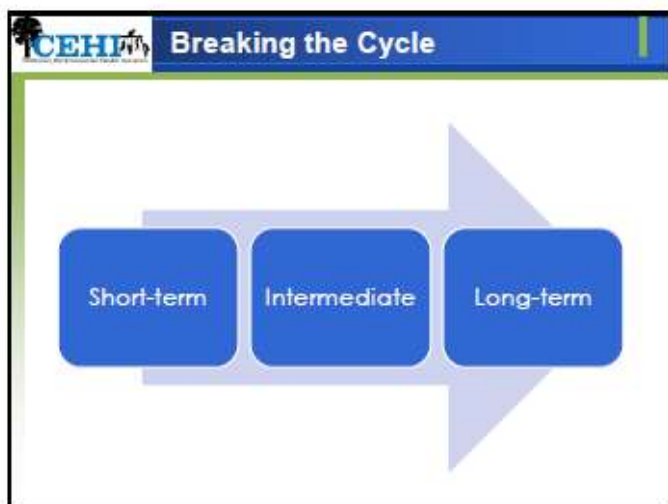
Neighborhood Health Indices

- Categories
 - Nuisance
 - Housing damage
 - Property characteristics
 - Security Measures
 - Vacancy
 - Amenities
 - Crime
 - Tenure
- Value for each category was determined by the sum of the observed variables defining that field
- Tax parcel-level data was aggregated to the block level




Neighborhood Health Indices						
Housing damage	Property characteristics	Security measures	Amenities	Tenure*	Vacancy	Nuisances
Broken windows	Careless lawn	Security fence	Schools	Owner-occupied	Nearest commercial	Stinking water
Boarded windows	No grass	Barbed wire	Libraries	Renter-occupied	Nearest industrial	Litter
Boarded door	Boarding water	No trespassing sign	Health facilities		Nearest lot	Garbage
Notes to walls	Other	Signs of drug use	Day care centers			Stolen goods
Roof damage	Cracks	Security sign	Health care providers			Disordered furniture
Chimney damage	Broken glass		Security stores			Disordered appliances
Foundation damage	Disordered furniture		Parks			Disordered tires
Artery damage	Disordered appliances		Community centers			Stolen vehicle
Door damage	Disordered tires					High weeds or grass
Swimming pool	Disordered vehicles					Graffiti
Pipe damage	High grass or weeds					
Contaminated						





- ### Breaking the Cycle
- Immediate
 - Empowering women – Centering Pregnancy programs
 - Enlisting neighborhood and community groups
 - Bringing Books to Children (CEHI initiative)
 - Intermediate
 - Increasing educational opportunities
 - CEHI's High School Internship Program
 - Zoning policies
 - Long-term
 - Programs and policies increasing educational success
 - (Built environment)
 - Possibly- State and federal policies promoting greener, more sustainable infrastructure
 - Possibly- State and federal incentives for housing renewals


 **Conclusions**

- Are there disparities in psychosocial health and built environment exposure during pregnancy?

Yes

- If there are disparities, how can we break this cycle through interventions addressing environmental and psychosocial factors?

Multiple levels of intervention

 **Acknowledgments**

- Southeast Pediatric Environmental Health Specialty Unit, Emory University
- Institute for the Study of Disadvantage and Disability
- Children's Environmental Health Initiative, Duke University
- EPA award RD-83329201-0

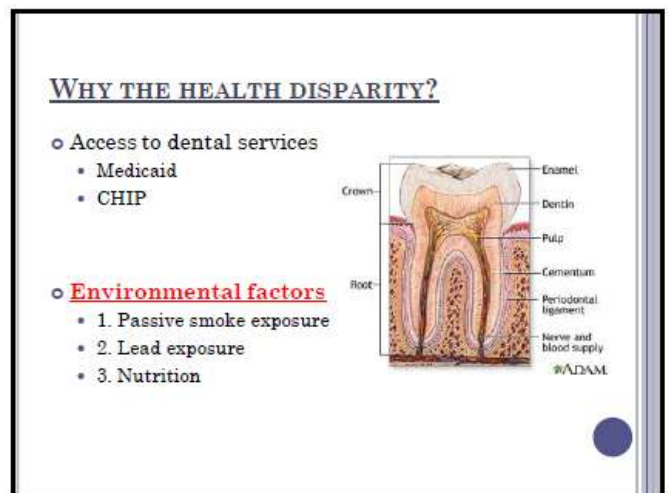
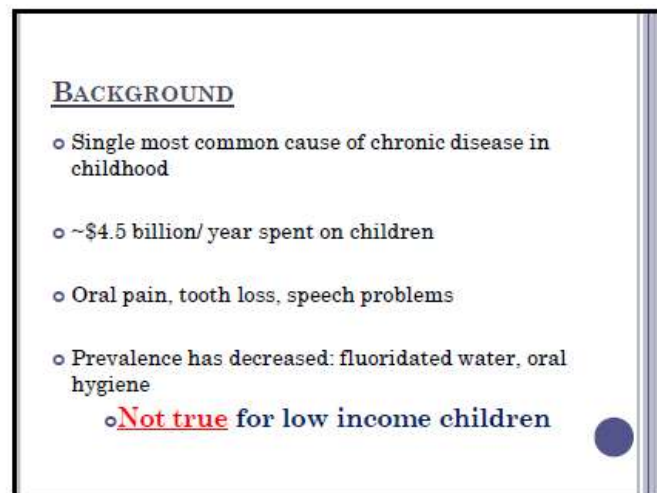
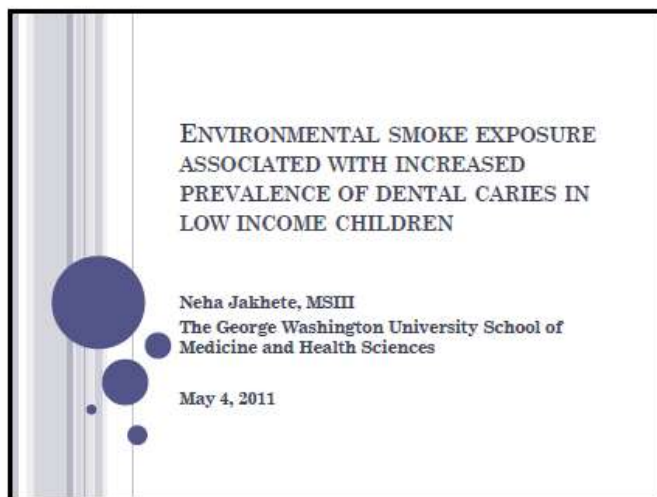
II. Children

Environmental Smoke Exposure Associated with Increased Prevalence of Dental Caries in Low Income Children

Georgia Washington University, School of Medicine and Health Sciences

Neha Jakhete, Student; Ben Gitterman, Faculty Mentor

Dental caries are of serious concern as increasing numbers of cases of early childhood caries are seen. Oral hygiene and the development of dental caries is a challenging issue to address in any child. However, children in lower socioeconomic groups are disproportionately affected when compared to their higher income peers. Low income children are found to be twice as likely to have dental problems, with a reported prevalence of up to 50%. Several environmental factors have been found to play a role in this difference, including passive smoke exposure, lead exposure and poor nutritional intake. While lead exposure and nutrition have been studied extensively, the association between passive smoke exposure and dental caries in children is less well known. This review will consider these environmental risk factors, focusing primarily on passive smoke exposure and its association with the development of dental caries. We will also propose potential strategies, based on a comprehensive understanding of both existing published research and community based interventions, as a means of addressing the health disparities that contribute so dramatically to this problem.



1. PASSIVE SMOKE EXPOSURE

- In utero effects
- Increases bacteria
- Breaks down protective barriers



DOSE-DEPENDENT RELATIONSHIP OF SMOKE EXPOSURE AND DENTAL CARIES

Table 3. Unadjusted and Adjusted Odds Ratios for Caries in Deciduous Teeth Associated With Increased Levels of Exposure to Environmental Tobacco Smoke (Serum Cotinine Level)^a

	Cotinine Level, ng/mL			
	<0.05 (n = 493)	0.05–0.2 (n = 1082)	0.2–1.0 (n = 1126)	>1.0 (n = 830)
Unadjusted Odds Ratio (95% Confidence Interval)				
Decayed	1.0	1.3 (0.9–2.4)	2.3 (1.5–3.5)	2.7 (1.7–4.4)
Filled	1.0	1.2 (0.7–1.9)	1.6 (1.1–2.4)	1.4 (1.0–2.1)
Adjusted Odds Ratio (95% Confidence Interval)				
Decayed	1.0	1.3 (0.8–2.3)	2.2 (1.3–3.6)	2.3 (1.4–3.9)
Filled	1.0	1.1 (0.7–1.8)	1.6 (1.0–2.4)	1.5 (1.0–2.3)

^aUsing logistic regression, we adjusted environmental tobacco smoke exposure for the subjects' age, race, family income, region of residence, education level of the head of the household, blood lead level, and dental service use.

Alipine CA, Moss ME, Aminger P, Weitzman M. Association of pediatric dental caries with passive smoking. *JAMA*. 2006;295(10):1258–1264.

SES vs. SMOKE EXPOSURE

TABLE 2
Final Logistic Regression Model Predicting Occurrence of Primary Caries in Iowa Fluoride Study Cohort

Predictor*	DF	Wald Chi-square	P-value	OddsRatio	Odds Ratio 95% CI
SES	2	0.65	.73	1.28 (low vs high) 1.11 (middle vs high)	0.70, 2.32 0.66, 1.86
Regular smoker at home	1	11.69	.001	3.38	1.68, 6.79

Shankin JD, Proffitt H, Levy SM, Warren JJ. The association between environmental tobacco smoke and primary tooth caries. *J Public Health Dent*. 2004;64(5):184–188.

PERINATAL EXPOSURE

Table IV. PRs and 95% CIs for dental caries according to perinatal smoking exposure status

	Prevalence	Adjusted PR (95% CI) ^a
None	191/1112 (17.2%)	1.00
In utero only	15/47 (31.9%)	1.78 (1.16–2.75)
ETS at home only	152/641 (23.7%)	1.26 (1.04–1.53)
Both in utero and ETS at home	61/215 (28.4%)	1.40 (1.08–1.81)

Tanaka H, Miyake Y, Sasaki S. The effect of maternal smoking during pregnancy and postnatal household smoking on dental caries in young children. *J Pediatr*. 2009;155(5):410–415.

2. LEAD EXPOSURE

- Housing built before 1960s
- Enamel hypoplasia
- Salivary gland development



<http://www.dental-education.com/50122/50122-01/50122-01-01.html>

3. NUTRITION

- Baby bottle caries
- Food choices
- BMI

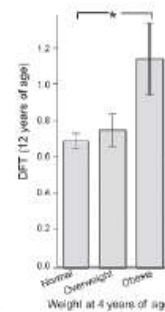
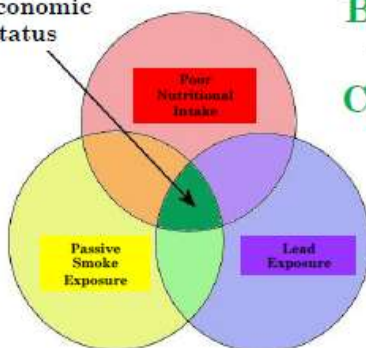


Fig. 2. Caries prevalence at 12 years of age (gender and socioeconomic status standardized mean with 95% CB by weight status based on childhood BMI at 4 years of age. * $P < 0.05$).

Grellis EW, Angeretti M, Aronson IL, Eriksson E, Johansson I. Dental caries and body mass index by socio-economic status in Swedish children. *Community Dent Oral Epidemiol*. 2008;36(3):252-255.

How do we
**Break
the
Cycle?**

Low
Socioeconomic
Status



ASK THE PATIENT

- Teeth should be part of physical exam
- Smoking at home?
- Lead exposure?
- Nutrition?
- Dentist visits?



EDUCATE THE FAMILY

- At every encounter
- Oral hygiene
- Modifiable risk factors
- Dental services offered on health insurance plans
- Free clinic days



FOLLOW UP

- At every visit
- For high risk children
- Make connections in the community
- Provide resources



ADA American Dental Association™

RECOMMENDATIONS

- ✓ Individual
 - ✓ Improved focus and education at the patient/ parent/ family level
- ✓ Community
 - ✓ Education in classrooms
 - ✓ Increase exposure in dental/ medical/ PA/ NP student curriculum
- ✓ Public Health
 - ✓ Advocate for health policy regarding dental coverage
 - ✓ Public service announcements
 - ✓ Target government programs: WIC, etc

SPECIAL THANKS TO
DR. BENJAMIN GITTERMAN

I thank the Break the Cycle Program.



THE GEORGE
WASHINGTON
UNIVERSITY
WASHINGTON, DC




Assessing Arsenic Exposure from Drinking Water Before and After the Improvement of Water Supply and the Health Effects on Children in Endemic Regions of China

Mercer University, School of Medicine, Department of Community Medicine

Crystal Davis, Student; Yudan Wei, Faculty Mentor

Exposure to inorganic arsenic through drinking water has been a major public health problem around the world. This study is designed to assess geographical variations in the arsenic levels of drinking water and the effectiveness of the improvement of water supplies in those endemic regions in China. Data on water arsenic levels from different monitoring sites in endemic regions before and after the improvement of drinking water supplies was obtained from the Center for Endemic Disease Control, China CDC. Arsenic levels in urine were measured in children aged 8-12 in those endemic villages where the drinking water supply was improved. The results demonstrate that the improvement of drinking water supplies by the Chinese government leads to the improvement of water quality for residents living in those endemic regions. The median levels of urinary arsenic in children were lower than the national reference value. However, a wide range of urinary arsenic levels was seen among the study participants, which could reflect the disparities in genetic and socioeconomic factors. Based on the limited demographic information obtained for the study population, no conclusions can be drawn in this study regarding the effect of socioeconomic factors on arsenic exposure in children.

ASSESSING ARSENIC EXPOSURE FROM DRINKING WATER BEFORE AND AFTER THE IMPROVEMENT OF WATER SUPPLIES IN ENDEMIC REGIONS OF CHINA

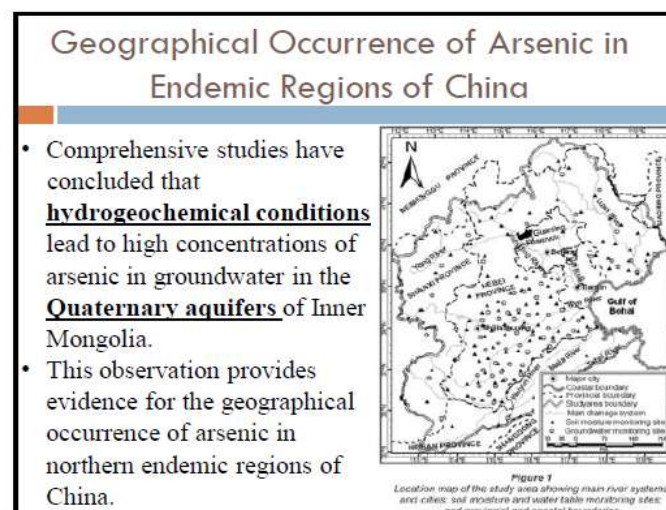


Crystal P. Davis, Yudan Wei
Mercer University School of Medicine
Lijun Zhao, Dianjun Sun, Yanhui Gao
Center for Endemic Disease Control, China CDC

Background

Affecting at
Risk individuals who are
Socially and
Economically disadvantaged
&
Needing help
In endemic regions of
China

- Millions of people exposed to arsenic through drinking water worldwide.
- Over 35-77 million people in Bangladesh alone have been affected by this devastation which the World Health Organization has labeled as the "largest mass poisoning in history".
- In China, it was estimated that about 0.5-3 millions of people have been exposed to high levels of arsenic ($> 50 \mu\text{g/L}$) from drinking water.



Arsenicosis and Blackfoot Disease...



Health Effects

Skin, Lung, and Bladder Cancer

Peripheral Vascular Disease (PVD)

Children and Intelligence Quotient (IQ) level

Health effects of arsenic on children

Arsenic-specific skin lesions have been found in infants aged 6-18 months. Other adverse effects of arsenic exposure in children include:

- cognitive delays
- reduced IQ
- slowing of mental growth
- poor memory

Animal-model research has provided evidence that arsenic may be located in infants and their brains through the undeveloped placental barrier and blood-brain barrier, thus indicating the possibility of transmitting arsenicosis from mother to child.



Strategies Implemented for the Improvement of Water Supply

The rural water supply, sanitation, and latrine improvement program forms an important content of the poverty reduction plan of the Government of China.

The government policy is to promote a pipelined water supply system as priority to meet the demands.

Improvements in the water began in Xinjiang Autonomic Region in 1988.



Methods

Selection of monitoring sites

The monitoring sites were selected in those provinces or autonomic regions with endemic arsenicosis areas. Water and urine samples were collected and measured for arsenic concentrations in the year of 2006.

- For Inner Mongolia autonomic region and Shanxi province, three monitoring sites were selected:

one village with mild arsenicosis

one village with moderate arsenicosis

one village with severe arsenicosis

- For Xinjiang autonomic region, Jilin, and Ningxia provinces, one village with the highest arsenic in well waters was selected.

Methods

Water and Urine sample collection

Water samples

Collected in 50-mL acid-washed tubes.

Urine samples

Collected in 15-mL acid-washed tubes.

Fifty spot urine samples of children aged 8-12 with sex in half and ten persons for each age group were collected.

If there were no more than 50 children in the village, all the children's urine samples were collected.

Analysis for arsenic concentrations

Hydride generation atomic fluorescence spectrometry (HG-AFS)

Silver diethyl-dithiocarbamate spectrometry (DDCAG)

Data analysis

The study population (a total of 177 children) was categorized into low exposure and high exposure groups based on the 50th percentiles of arsenic levels in urine. Demographic characteristics (age, sex, income) of the study population were analyzed.



Table 1. Arsenic levels in drinking water before and after the improvement of drinking water supplies

Province	Monitoring village	Year of improvement	Depth of public wells (meters)	Number of wells monitored	Arsenic Levels in Water (mg/L)*	
					Before	After
Jilin Inner Mongolia	Baiyintuhai	2002	120	3	0.043 (0.035-0.051)	0.005 (0.004-0.005)
	Wanglaosi	2000	-	1	0.118	0.007
	Shilige	2005	300	1	0.245	0.364
Ningxia	Delihao	1994	160	1	1.430	<0.01
	Baoma	2003	150	1	0.075	0.050
					0.1271 (0.070-0.200)	0.003 (0.001-0.003)
Shanxi	Kouzai	2003	130	10	0.120	0.001
	Beiyanchi	2003	120	10	(0.120-0.120)	(0.000-0.002)
	Silizhuang	2003	120	10	0.200	0.001
Xinjiang					(0.008-0.511)	(0.000-0.003)
	Shiqiao	1988	280	7	0.237 (0.010-0.415)	0.051 (0.046-0.056)

*The arsenic levels in water expressed as Mean(Range) when the number of wells monitored ≥3.

Table 2. Arsenic levels in urine among children aged 8-12 after the improvement of drinking water supplies

Province	Monitoring village	Year of improvement	Depth of public wells (meters)	Number of children monitored	Arsenic levels in urine (mg/L)	
					Median	Range
Jilin Inner Mongolia	Baiyintuhai	2002	120	15	0.025	0.005-0.048
	Wanglaosi	2000	-	14	0.044	0.029-0.060
	Shilige	2005	300	14	0.498*	0.300-1.215
Ningxia	Delihao	1994	160	14	0.029	0.000-0.192
	Baoma	2003	150	50	0.012	0.003-0.087
	Kouzai	2003	130	50	0.006	0.002-0.062
Shanxi	Beiyanchi	2003	120	12	0.016	0.004-0.094
	Silizhuang	2003	120	22	0.016	0.005-0.577
	Shiqiao	1988	280	38	0.060 ^b	0.017-0.287
Anhui*	Huangzu	Not improved	-	48	0.082	0.005-0.332

*Anhui province had not implemented improved drinking water supplies by 2006.

^aThe improvement of drinking water supply in Shilige, Inner Mongolia was unsuccessful.

^bThe residents in the Shiqiao Village of Xinjiang had used both private well water and public well water since their water supply was improved in 1988.

Table 3. Demographic characteristics of the study population in As exposure groups

Characteristics	Low As group	High As group	p value
Sample size (N)	89	88	
Age (years)	9.82	10.09	0.192
Mean (Range)	(8-12)	(8-12)	
Sex (Male/Female)	49/40	40/48	0.201
Annual income per capita (RMB)*	1,500	2,000	0.161
Median (Range)	(800-2,800)	(800-2,800)	
Urinary As (μg/L)	6.00	28.00	<0.001
Median (Range)	(0.00-12.90)	(12.90-576.70)	

*Data on annual income was for the respective village where the study participants reside.

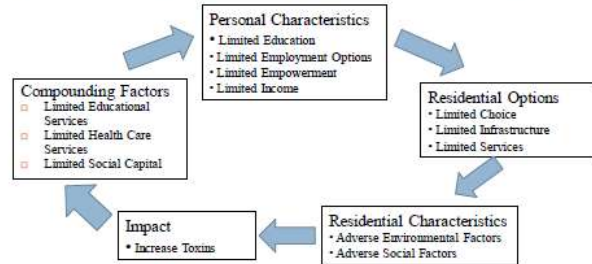
Discussion & Conclusion

Limitation

This study was based on the survey data provided by the Center for Endemic Disease Control, China CDC. Demographic and socioeconomic information on the study population was limited, therefore no conclusion can be drawn at this time regarding the effect of socioeconomic factors on arsenic exposure in children.

- Based upon the results, there is a significant improvement in water quality for those endemic villages by receiving alternative drinking water supplies.
- The median arsenic levels in children's urine after improvements in water supply showed significantly lower than the levels in children living in the village not receiving improved water supplies.
- A wide range of urinary arsenic levels was seen among children aged 8-12, which could reflect the disparities in genetic and socioeconomic factors.

Further Study & Recommendations



Break the cycle of disparities in arsenic exposure for children in the endemic (mostly rural) areas.

- Implement a comprehensive survey for arsenic exposure and health effects.
- Increase education on the importance of safe drinking water.
- Improve living conditions within these endemic regions that would limit vulnerability to exposures.

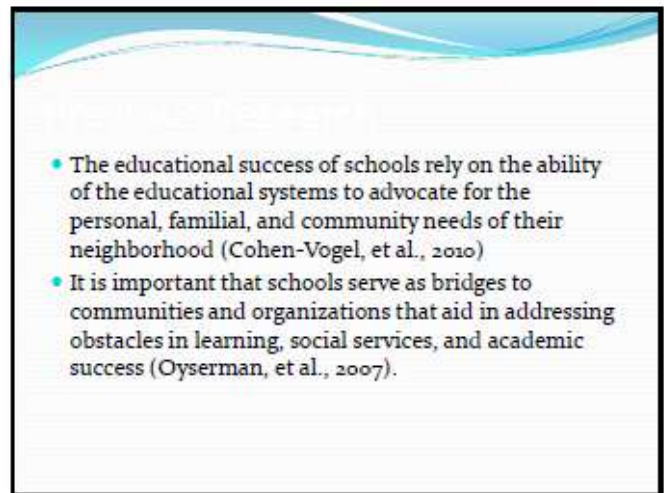
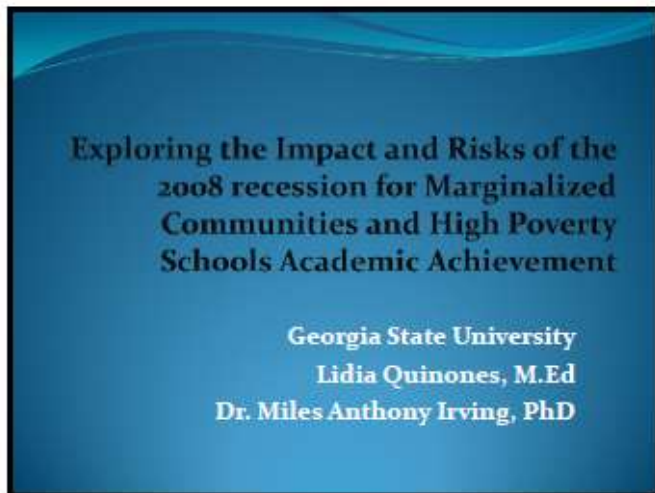
Acknowledgements

- Break the cycle of Children's Environmental Health Disparities, Southeast Pediatric Environmental Health Specialty Unit at Emory University.
- The staff at the Institutes of Endemic Disease Control and Research in the provinces or autonomic regions in China.

Exploring the Impact and Risks of the 2008 Recession for Marginalized Communities and High Poverty Schools Academic Achievement

Georgia State University, Department of Educational Psychology & Special Education
Lidia Quinones, Student; Miles Anthony Irving, Faculty Mentor

Over the last two years, the United States has experienced the largest economic downturn since the Great Depression. The poor and already marginalized segments of our population have experienced a tremendous amount of financial hardship during this time. Schools have had to expand their support beyond academia, to include social services, food, safe housing, and basic survival needs for families. However, in Atlanta specifically, during the 2008 recession, the Atlanta Public School district budget has been cut a combined \$915 Million. These cutbacks come in addition to state cuts, \$654.1 million in 2010, \$93 million in 2009, \$143 million in 2008, \$170 million in 2007. However, in spite of budget cuts, schools demand to meet the social and non-academic needs of the students and community, including food, safe housing, nourishment, safety from toxins and basic survival needs may have increased as a result of the 2008 recession. While research highlights that schools can serve as bridges to communities and organizations to aid in addressing obstacles in learning, healthy development, and overall success in school, increased demands during consistent educational cutbacks may affect their ability to meet these non-academic needs of community members, while also meeting the academic needs of the students. This study investigates this relationship between the 2008 economic recession and the risks associated for marginalized communities, schools, and students. We examine school resources, parental involvement, and exposure to malnourishment, toxins and the overall ability of schools to meet the academic needs of their students. Through a triangulation of interviews, document analysis, and field observations, we identify themes in the perceptions of the staff and principals. These themes are then triangulated with what is discovered through field observations and document analysis. This investigation highlights the shared responsibility between schools and communities to circumvent the negative effects of inadequate housing, health care, and nutrition on students learning abilities and on schools ability to provide effectively for the students and their families.



Findings

- ▣ During the 2008 recession, the Atlanta Public School district budget has been cut a combined \$915 Million.
- ▣ These cutbacks come in addition to state cuts, \$654.1 million in 2010, \$93 million in 2009, \$143 million in 2008, \$170 million in 2007

Research Purpose

- This study investigates this relationship between the 2008 economic recession and the risks associated for marginalized communities, schools, and students.
- We examine school resources, parental involvement, and exposure to malnourishment, toxins and the overall ability of schools to meet the academic needs of their students.
- This investigation highlights the shared responsibility between schools and communities to circumvent the negative effects of inadequate housing, health care, and nutrition on students learning abilities and on schools ability to provide effectively for the students and their families.

Background

- We hypothesize that since the 2008 recession there has been an increase in the demand for schools to meet social and non-academic needs of students, including food, safe housing, nourishment, safety from toxins and basic survival needs.
- This additional demand at a time with consistent educational cutbacks has impacted the ability for schools to meet these non-academic needs of families, as well as the academic needs of the students.

Study Design

- Participants were faculty and staff at Title One Schools in Metro Atlanta
- Interviews were conducted with:
 - Atlanta Public School Principals
 - School Counselor
 - Parent Liaison
 - Community In Schools Coordinators
 - Literacy Coach

School Demographics

- The total number of students at each school exceeded 600
- Between 98-99% of the students participate in free and reduced lunch
- Students are majority African American, between 94% and 99%.

Research Design

- Triangulation of interviews, document analysis, and field observations were used to identify themes in the perceptions of the staff and principals.
- These themes were then triangulated with what was discovered through field observations and document analysis.

▣ School Resources

- ▣ Clothing and uniform purchase
- ▣ Food
- ▣ Transportation
- ▣ Appearance maintenance

• Personal Resources

- Request for money
- Food
- Clothing and uniform purchase
- Transportation
- Appearance maintenance

• Multiple Responsibilities

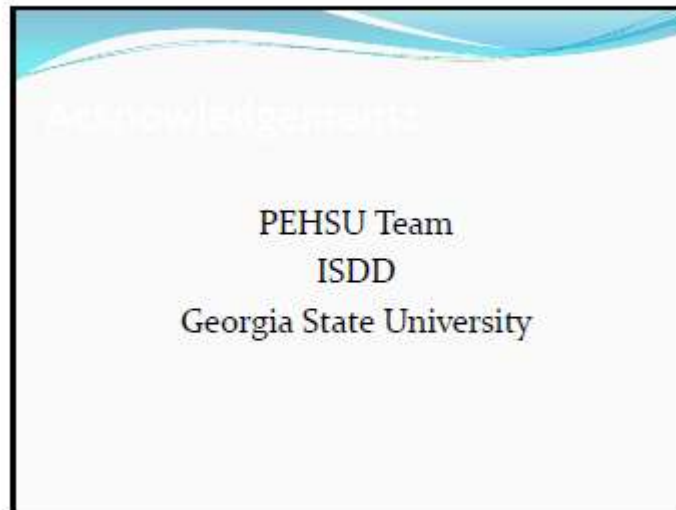
- Home visits
- Social services – counseling, hygiene lessons, etc.
- Discipline
- Multiple Positions

• School Conduct & Behavior

- Anger/Frustration
- Discipline

• Academic

- Cutbacks
- Parental Involvement



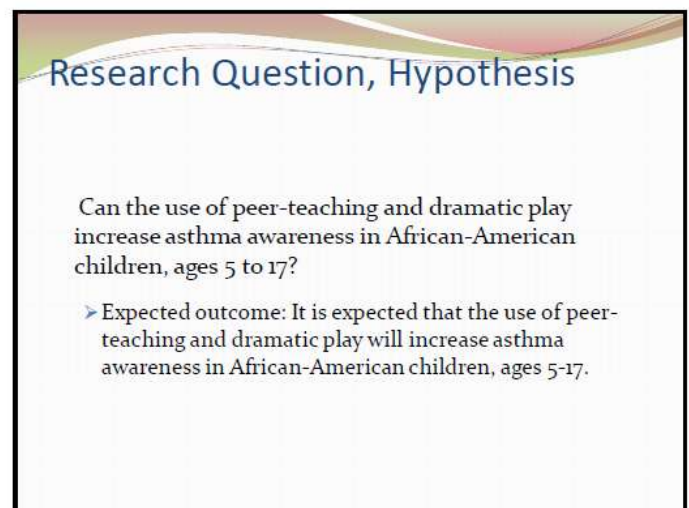
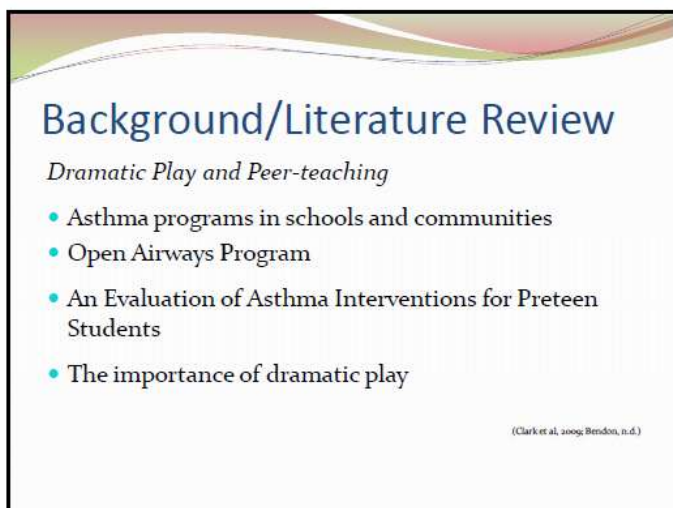
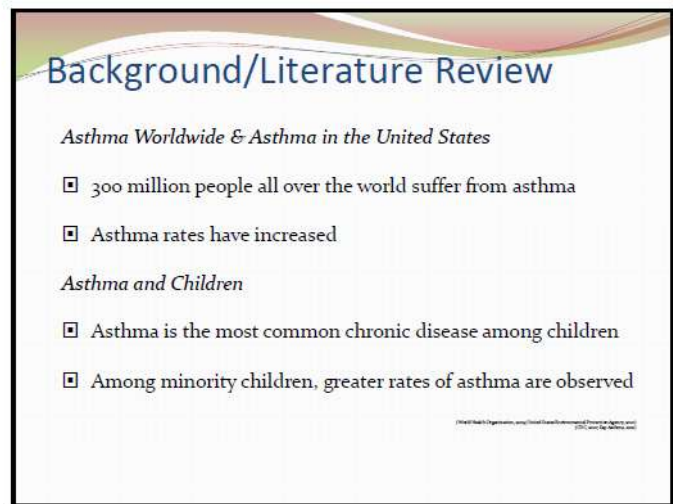
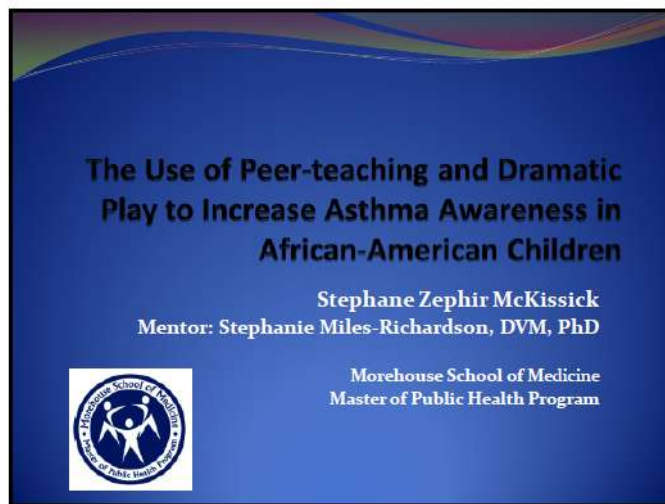
IV. Making a Difference

The Use of Peer-teaching and Dramatic Play to Increase Asthma Awareness in African-American Children

Morehouse School of Medicine, Master of Public Health Program

Stephane McKissick, Student; Stephanie Miles-Richardson, Faculty Mentor

Asthma and environmental asthma triggers continue to affect the quality of life of children, who are more affected by asthma than adults. This is especially true for African American children. The purpose of this study is to use peer-teaching and dramatic play to increase asthma awareness in African American children, ages 5 to 17. A non-experimental design was used for this study. A three week intervention was implemented in three groups of children: elementary school, middle school, and high school. Designated peer leaders were tasked to take key points from the facilitated discussion about asthma and environmental asthma triggers and to create original skits, games, and other types of dramatic play to convey the key messages to the younger groups, and eventually their parents and the church community. As a result of the intervention, statistically significant increases in asthma awareness were demonstrated. Findings from this study suggest that in order to break the cycle of environmental health disparities in children who are vulnerable as a result of social and economic disadvantage, health practitioners and scientists must seek to use innovative approaches to raise awareness in targeted communities.



Methodology

- ▣ Social Cognitive Theory, culture competence and community support
- ▣ Population
 - 18 African American children
 - Males and females
 - 5 to 17 years old
- ▣ Dataset
 - Questionnaire
- ▣ Measures
 - Asthma-Related Behaviors and Attitudes
 - Asthma severity
- ▣ Data Analysis
 - Univariate
 - Bivariate

Methodology

Intervention

- ▣ Non-experimental, one group pre/post test

Week 1

- Participants divided into 3 groups: ES, MS, HS
- Group discussion
- Peer leaders

Week 2

- Peer leaders teach asthma awareness lessons to MS group

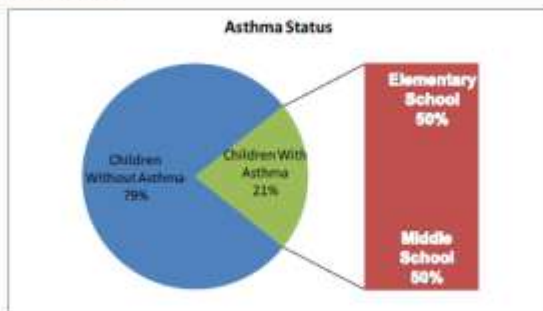
Week 3

- MS participants and peer leaders teach asthma awareness lessons to ES group

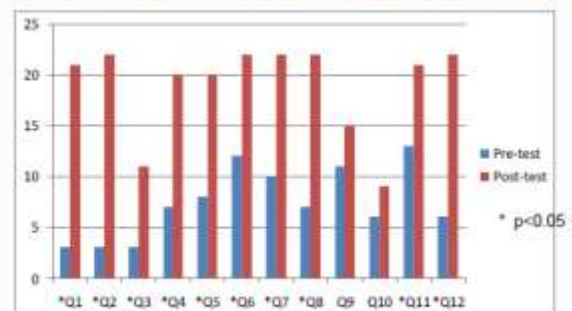
Week 4

- All groups perform for peers and church community

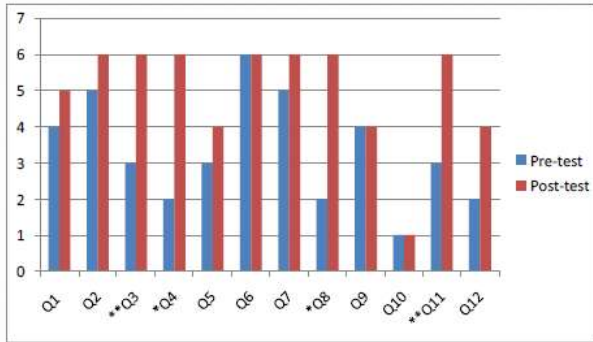
Results



Results – Children Without Asthma

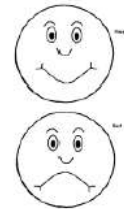


Results – Children With Asthma



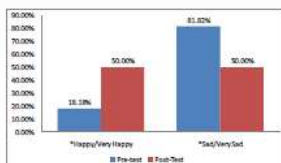
Question # 13

Circle the face that shows how you feel about asthma

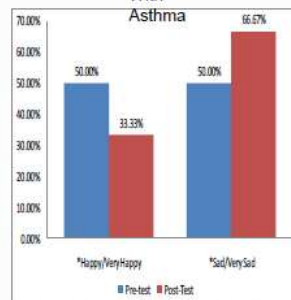


Results – Q 13

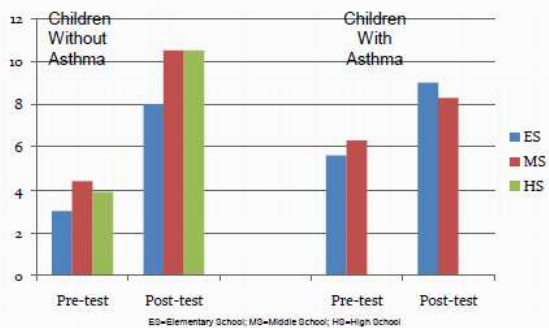
Children Without Asthma



Children With Asthma



Results – Average Knowledge Score Among Groups



Discussion

- Key Points
 - Actual outcome
 - Forms of dramatic play used
 - Differences in communication style between age groups
 - No significance in communicating with teacher about asthma
- Asthma Awareness interventions in communities
 - Comparison group

Discussion – How Do We Break The Cycle?

- Addressing Asthma and African American families
- Innovative approaches to raising awareness in communities
- Youth Assets and Strengths-focused Approach
- Community health promotion
- Community-based Participatory Research

Acknowledgements


- Break The Cycle Program
- Southeast Pediatric Environmental Health Specialty Unit at Emory University (SE PEHSU)
- Institute for the Study of Disadvantage and Disability (ISDD)
- Dr. Stephanie Miles-Richardson
- Morehouse School of Medicine, Master of Public Health Program

The Impact of Thirdhand Smoke Education in a Pediatric Emergency Department on Caregiver Smoking Policies and Quit Status: A Pilot Study

University of Florida-Jacksonville, Department of Emergency Medicine


Sima Patel, Student; Phyllis Henry, Colleen Kalynch and Katryne Lukens Bull, Faculty Mentors

Environmental Tobacco Smoke (ETS) exposure is an international problem with significant health and societal effects. Parental smoking is the primary exposure for children. While the adverse health effects of secondhand smoke to children is well recognized and used to educate caregivers, the concept of thirdhand smoke (THS) and its use as an educational tool has been less studied. This study aims to determine the impact of brief THS intervention on smoking behaviors of caregivers seen in an urban pediatric ED. A convenience sample of children <36 months with caregivers who smoke brought to a Pediatric ED were recruited. Caregivers were randomized to a control group or intervention group who received brief THS education. Follow-up phone assessments completed evaluated smoking behavior changes. This study results demonstrated that a brief thirdhand smoke intervention in our sample influenced smokers to change smoking policies, reduce the number of cigarettes, or quit smoking. These changes would ultimately decrease environmental tobacco smoke exposure to children and adverse health effects. Study results are limited due to the small numbers and high loss from follow-up. The study does not show statistical significance for generalizability due to these limitations.





The Impact of Thirdhand Smoke Education in a Pediatric Emergency Department on Caregiver Smoking Policies and Quit Status: A Pilot Study

Sima Patel, M.D.




Mentors:
Phyllis Henry, MD
Colleen Kalynch, MSH, EdD
Michelle Lott, BSH, CHES
Katryne Lukens-Bull, MPH
David Woods, M.D., MPH
Ryan Butterfield, MPH, DrPHc





Pediatric Environmental Health Disparities

- ✦ Environmental exposures contribute to a significant morbidity and mortality in pediatrics
- ✦ The AAP has published policy statements emphasizing the role of the physician as educator in hopes to motivate patients/families to limit exposure
- ✦ Cigarette Smoking is a significant problem leading to concerning environmental exposure




Magnum, N., et al. (2011). *Pediatrics* 128: 146-151.





Cigarette Smoking

- ✦ Cigarette Smoking is a worldwide health problem
- ✦ In the U.S., cigarette smoking is the leading cause of preventable illness and death
- ✦ There are over 1 billion smokers in the world
- ✦ In the U.S., 46 million people or 20.6% of all adults smoke cigarettes
- ✦ Highest prevalence among low socioeconomic populations




Centers for Disease Control and Prevention. *Morbidity and Mortality Weekly Report* 2009;58(44):1227-1232 [accessed 2009 Nov 16].
Centers for Disease Control and Prevention. *Morbidity and Mortality Weekly Report* 2002;51(14):330-303 [accessed 2009 Aug 18].
Cheng, M., et al. (2010). *Lancet*.



Environmental Tobacco Smoke (ETS)

- ✦ Refers to Smoke from:
 - the sidestream (the burning end) of a cigarette;
 - exhaled mainstream smoke (the smoke that is puffed out by smokers).
- ✦ Associated with significant health and societal effects
 - In adults
 - In children



Wendoff, J.P., et al. (2000). *Pediatrics* 122: 4363-4375.

ETS-Secondhand Smoke

- # Secondhand smoke is a well understood environmental smoke exposure that refers to smoke exposure while others are actively smoking
- # 1986 The Surgeon General's report - harmful effects of Secondhand smoke
- # Since then, adverse health effects of secondhand smoke in adults and children has been well recognized.



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ETS-Thirdhand Smoke

- # Thirdhand Smoke (THS) residual tobacco smoke contamination that remains after the cigarette is extinguished.
- # Tobacco toxins persist beyond the period of active smoking with toxins that deposit onto many surfaces.
- # Residual tobacco smoke contains 250 poisonous gases, chemicals, and metals.
- # Children have greater susceptibility to THS exposure



Source: U.S. and Canada Tobacco 2003-2004

Pediatric Smoke Exposure

- # Children are primarily exposed as a result of a caregiver's use of tobacco through:
 - Secondhand (ETS)
 - Thirdhand Smoke (THS)
- # Studies have shown that 43% of children under 12 years of age live with a smoker.
- # Parental smokers are disproportionately poor and underserved



Source: U.S. and Canada Tobacco 2003-2004
 Townsend, J.E., et al. (2003). Pediatrics 111(5): 1013-1017.

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The Cycle of Health Disparities for Children Exposed to Tobacco



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How Can This Problem Be Addressed By Emergency Care Providers?



How can we break the cycle?

UF

Screen Brief Intervention Refer to Treatment

Why SBIRT in the ED and PEDS ED?

- # U.S. EDs treat more than 115 million patients annually
- # EDs provide an important venue for brief interventions and has been more recently recognized as such
- # There has been an increase in EDs utilizing SBIRT to educate patients on high risk behaviors and refer them into treatment
- # Studies have reported that parental tobacco use among the ED population is disproportionately higher at 45%.

Benowitz, N. L., and J. M. Cummings (2000). Smoking Cessation. 4th ed. San Francisco: Jossey-Bass.

Benowitz, N. L., and J. M. Cummings (2000). Smoking Cessation. 4th ed. San Francisco: Jossey-Bass.

Why Use a Brief Intervention Message on Thirdhand Smoke?

- # The adverse health effects of second-hand smoke to children is already well recognized and used to educate caregivers
- # The concept of thirdhand smoke is new and its use as an educational tool has been less studied
- # An independent association between beliefs of adverse health effects of thirdhand smoke and home smoking bans was shown



Benowitz, N. L., and J. M. Cummings (2000). Smoking Cessation. 4th ed. San Francisco: Jossey-Bass.

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Study Objectives

- # To determine the impact of a brief intervention on smoking behaviors of caregivers among children < 3 years of age seen in an urban academic pediatric ED.
- # Main outcomes were to see if caregivers would change smoking status by:
 - changing Smoking Policies in the home or car;
 - reducing the number of cigarettes smoked; or
 - stopping smoking altogether.



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Study Design

A prospective 6 month follow-up pilot study of a convenience sample

Inclusion Criteria

- Caregivers of children <3yr with a household member who smokes presenting to the Pediatric ED

Methods

- Demographic data was collected
- Caregivers randomized
- Intervention group received brief thirdhand smoke education while the control group received routine education.
- Follow up phone assessments were completed

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Analysis Included

- Descriptive data provided for all variables (age, gender, race, etc.)
- Odds Ratio using logistic regression
 - used to evaluate probability of outcome
- Chi-Square test for independence and Fisher's Exact Test
 - used to identify statistically significant associations between cofactors and outcome variables.
 - P-values were set using an alpha=0.5
- Statistical analysis and data management was done using SAS 9.2(Cary, NC)
- Limitation
 - Due to low sample size and loss to follow up, the analysis was kept at a bivariate or pairwise level.

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Response Rate and Demographics

- There were 42 patients enrolled in the study
- 40 were included in the analysis:
 - 22 in the intervention group
 - 18 in the control group

- Demographics
 - Caregivers
 - Children

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Results

In Regard to the Main Outcomes:

- Change in Smoking Policies
- Reducing the number of cigarettes
- Quitting smoking altogether

Definition of Ever Changed

- YES: Defined as the first time a person reported a positive change across all time periods (2, 4 & 6 weeks or at 6months)
- NO: defined as never reported any positive change

Ever Changed Smoking Policy

- Inclusion: Only smokers who reported a negative behavior that needed changing were included in the outcome

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Results

- change smoking policies (OR 2.0; CI 95% 0.166-24.069)
- reduce the number of cigarettes (OR 4.88; CI 95% 0.785-30.286)
- quit smoking (OR 1.12; CI 95% 0.346-3.590)
- No **significant difference** with respect to any variable between the dropped out group and the followed up group (i.e., age, race, gender).

While the OR's suggest the treatment group was more likely to change, results were not statistically significant as the 95% CI includes 1.00

Although results are valid for this sample, they are not generalizable and may be due to chance

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Discussion

- This study demonstrated that a brief thirdhand smoke intervention in our pediatric ED influenced smokers to:
 - change smoking policies
 - reduce the number of cigarettes
 - quit smoking
- These changes would ultimately decrease environmental tobacco smoke exposure to children and adverse health effects
- Study limitations:
 - small numbers
 - high lost to follow-up rate
 - The study does not show statistical significance for generalizability due to these limitations
- Larger studies are needed

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Questions and Thank You

- Break the Cycle Program
 - Southwest Pediatric Environmental Health Specialty Unit at Emory University
 - Institute for the Study of Disadvantage and Disability
- UF faculty
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 - David Wood, MD, MPH
 - Ryan Butterfield, PhD
- Interns
 - Michelle Parsons
 - Amy Halliday
 - Jennifer Guldager
 - Shania Stroder



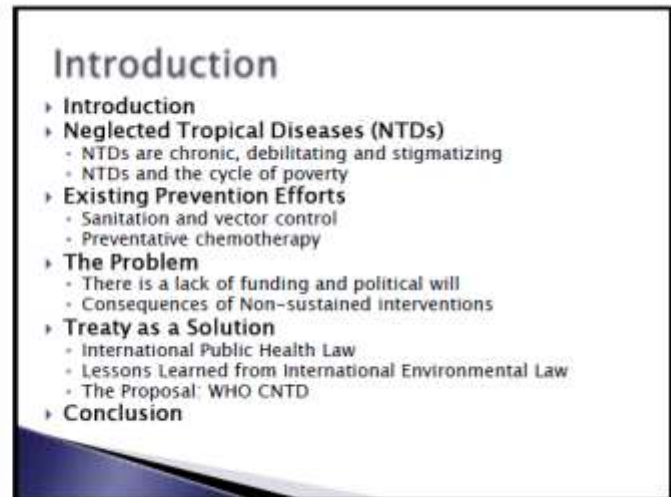
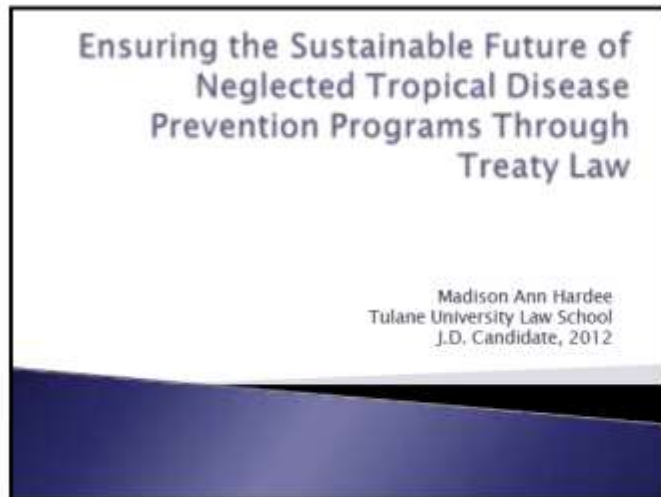
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Ensuring the Sustainable Future Neglected Tropical Diseases Prevention Programs through Treaty Law

Tulane University School of Law

Madison Hardee, Student; Colin Crawford, Faculty Mentor

Neglected tropical diseases (NTDs) are a group of tropical infections which are endemic in the poorest regions of the world. Often chronic and disabling, NTDs occur most commonly in the setting of extreme poverty, and disproportionately affect young children. We have the tools to combat NTDs, but lack sufficient financial support and international awareness to eliminate these chronic diseases. My hypothesis is that a global public health treaty addressing neglected tropical diseases will bring stakeholders together, raise the profile of NTDs in the global health community, and ensure long-term commitments for NTD interventions. In this manner, a treaty will help reduce child morbidity and mortality in developing countries by ensuring the sustainable future of NTD prevention efforts. Because I cannot actually implement a treaty and test the outcomes on child health in developing countries, my project will build a framework for considering this proposal. The background section will explain the relationship between NTDs and cycle of poverty. Next, I will discuss current prevention efforts and the consequences of uncoordinated, non-sustained interventions. Finally, I will discuss the role that a global public health treaty will play and how this proposed treaty should be modeled.



Neglected Tropical Diseases (NTDs)	
CONDITION	# OF DALYs ANNUALLY
HIV/AIDS	84.5 million
NTDs	56.5 million
Malaria	46.5 million
Tuberculosis	34.7 million



NTDs and the cycle of poverty

Economic Impact

- NTDs represent some of the most common infections of the world's poorest people
 - 2.7 billion people live on less than \$2USD/ day
 - Nearly 40% (1 billion) of the world's poorest people are affected by one or more of the 7 most common NTDs
- Lymphatic Filariasis (LF)
 - Afflicted workers must change their trade to one that requires fewer physically demanding tasks
 - One study shows chronic LF patients lose 68 days of work per year
- Onchocerciasis and Trachoma
 - When village blindness reaches high levels, there are not enough people to tend the fields, resulting in food shortages and community wide poverty

NTDs & the cycle of poverty

Impact on health and education

- Studies show that roundworms, whipworms and hookworms are associated with adverse effects on memory and cognition. Infection may negatively impact children's cognitive development.
- Hookworm
 - Chronic infection with hookworm during childhood is associated with a 43% reduction in future wage-earning capacity
 - Hookworm is also a threat to pregnant women. Iron losses lead to neonatal prematurity, low birth weight and increased maternal mortality.
- Onchocerciasis and Trachoma
 - Cause blindness. When a woman can no longer work in the household, the responsibility falls to her daughter, who is forced to leave school.
- Schistosomiasis
 - Children and adolescents are at the highest risk
 - Chronic schistosomiasis is associated with anemia, undernutrition, growth impairments and poor school performance.

We have the tools!

Existing prevention efforts

- Sanitation and Vector Control
 - The CDC estimates that improvements in sanitation and hygiene alone could result in:
 - 29% decrease in illness from hookworm
 - 77% reduction in Schistosomiasis
 - 78% reduction in Guinea worm disease
 - The WHO estimates that 25% of the global disease burden (and more than one-third of the burden among children) may be attributed to modifiable environmental factors
- Preventative Chemotherapy
 - High impact, low cost, and require very little institutional support
 - Increased immunization coverage is the central reason why the number of children under 5 dying every year is now below 10 million, for the first time in history.
 - Advanced market commitments and public private partnerships incentivize R&D of vaccines that affect the world's poor

The PROBLEM

Lack of Funding and Political Will

- NTDs are not currently a high priority on the global health agenda. Despite the huge impact of NTDs, development assistance has been aimed primarily at fighting HIV/AIDS, malaria and tuberculosis.
- Although the tools exist to control and even eliminate some NTDs, current efforts are insufficient
 - Over the last 30 years, it has been estimated that less than half of the eligible populations have received preventative chemotherapy treatments for STHs, Schistosomiasis, LF and Trachoma
- When they are implemented, interventions often overlook the threat of re-infection
 - Many programs focus almost entirely on pharmacological treatments for infected individuals.
 - This is a decidedly non-sustainable approach.

The PROBLEM

Consequences of Non-sustained Interventions

- › Existing efforts are uncoordinated
- › When funding for a program runs out, the intervention ends and disease transmission returns
 - There is tremendous need for sustained improvements in health system infrastructure, sanitation and housing
- › Examples:
 - Chagas in Argentina
 - Dengue in the Americas
 - Schistosomiasis MDA campaign in Mali

Treaty as a solution

- › Existing prevention programs are only as effective as long as they are able to receive funding.
- › To make a lasting impact, it is essential that the public health community take successful programs and operationalize them.
- › A global public health treaty is one promising way to accomplish this goal.

International Public Health Law

- › Existing UNGA resolutions are inspirational but their scope is too broad to produce measurable results in the often overlooked area of neglected tropical diseases.
 - International Covenant on Economic and Social, and Cultural Rights (ICESCR)
 - UN Millennium Declaration
- › WHO Framework Convention on Tobacco Control (2005)
 - The World's first ever global public health treaty
 - Signed by 168 states worldwide and binding international law for the 172 states that have also ratified/ acceded to the FCTC (87.3% of the world's population)
 - Notable for its unprecedented inclusion of nongovernmental organizations throughout the negotiation and drafting processes

Lessons learned from International Environmental Law

- › Over the past 50 years, the field of international environmental law has developed a large body of treaties.
 - When dealing with such a large subject area, individual treaties will tend to have specific foci, together comprising a comprehensive body of law.
- › Convention-Protocol Approach
 - Allows states to proceed incrementally.
 - First, the framework convention allows the parties to establish a basic obligations, principles and objectives.
 - Then, protocols build on the parent agreement through the addition of more specific commitments and institutional arrangements.

Current Political Climate

- › First WHO report on NTDs (2010)
- › 21st century global health movement
- › FCTC precedent
- › Existing NTD organizations
 - GAVI Alliance for vaccine development
 - Global Network for NTDs
 - Disease specific Initiatives



Proposal: WHO CNTD

- › WHO Framework Convention on Neglected Tropical Diseases (CNTD)
 - The framework convention approach will help to build an international consensus about the causes of NTDs, analyze best practices and disparities between countries.
 - In subsequent stages, specific protocols would be developed to achieve the objectives of the original framework.
- › The WHO CNTD will be a long-term commitment to ensure the sustainable future of prevention programs in the long-term so that the health world's poor does not suffer from temporary shifts in political will.
- › Improvements in sanitation, vector control and health system infrastructure will benefit other diseases
- › A step in the right direction for global health law

Conclusion

- › NTDs disproportionately affect the world's poor and keep them trapped in a cycle of poverty
- › We have the tools to reduce infection
- › Existing efforts are uncoordinated, underfunded and unsustainable
- › The political climate is ripe for an international global health movement
- › A treaty on NTDs would build upon existing alliances to raise awareness and ensure the long term support of NTD prevention programs
- › All we have to do is start talking about it.

Summary of Partnerships (2005 – 2011)

University Partners: (18) universities

- Clark Atlanta University, School of Social Work
- Duke University – Children’s Environmental Health Initiative
- Duke University – Trinity College
- Emory University Barton Law Center
- Emory University School of Public Health
- George Washington University School of Medicine & Health Sciences
- Georgia Institute of Technology, Department of Architecture
- Georgia State University Department of Educational Psychology and Special Education
- Georgia State University School of Law
- Mercer University School of Medicine, Department of Community Medicine
- Morehouse School of Medicine, Department of Community Health and Preventive Medicine
- Morehouse School of Medicine, Masters in Public Health
- Spelman College, Department of Biology
- Tulane University Law School
- Tulane University, School of Public Health
- University of Florida in Jacksonville, College of Medicine and College of Public Health
- University of North Carolina-Chapel Hill, Gillings School of Global Public Health
- Wayne State University, School of Medicine

Students Mentored: 48

Fields of advanced degrees of students: public health, medicine, law, education, nursing, social work, architecture

Selected Comments from this Break the Cycle Student Researchers:

“The approach to a problem in both life and medicine is vital. The concept of break the cycle has shown me an approach that will truly make an impact. This will greatly impact my career with research endeavors and clinical practice.”

Sima Patel, University of Florida-Jacksonville, Department of Emergency Medicine

“Break the cycle has provided me with incredible mentorship at my home institution and at other universities as well. This collaboration has been invaluable, opening my eyes to the multiple layers of my research and others experiences as well!”

Alexis Drutchas, Wayne State University, School of Medicine

“Break the Cycle has been a wonderful opportunity for me to focus on and examine the impact of current adverse environmental factors on child academic achievement. I’ve enjoyed the challenge and appreciate the opportunity.”

Lidia Quinones, Georgia State University, Department of Educational Psychology and Special Education

“The Break The Cycle Program offered me a unique opportunity, not only to conduct research, implement an intervention, and eventually publish my findings, but also the chance to learn from the research conducted by the other program participants who had the same goals – to contribute to breaking the cycle of environmental health disparities of children who are vulnerable as a result of social and economic disadvantage.”

Stephane McKissick, Morehouse School of Medicine, Master of Public Health Program

“Participating as a student researcher in the Break the Cycle program has provided an invaluable addition to my education. The hands-on research experience I have gained under the guidance of my mentor Dr. Maxson and the Break the Cycle team will benefit me greatly as I continue my education. I hope that the work I have done might contribute in some small way to breaking the cycle of disparities in pregnancy outcomes.”

Allison Gruber, Duke University, Children’s Environmental Health Initiative

SUMMARY

Children living in circumstances of social and economic disadvantage have long been at high risk for experiencing health problems caused or exacerbated by environmental factors. They are even more likely to be trapped in the cycle of environmental health disparity due to low parental health literacy, limited social capital, and lack of access to comprehensive healthcare and appropriate educational services. Given the current economic realities, it seems unlikely that many children and families will escape this cycle unless resources and public policies make children's environmental health a priority.

The Break the Cycle project is a replicable means by which to promote student and academic interest in addressing issues related to environmental health disparity. It serves as a catalyst through which academic mentors committed to issues of environmental justice can inform, guide, and inspire future professionals to become actively involved in finding creative solutions to environmental health dilemmas that the children of tomorrow will face.

This suggests that the incorporation of environmental health issues into various college curricula may play an important role in shaping future leaders who will be invested in breaking the cycle of environmental health disparities.

Resources

Executive Order no. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Federal Register 59 (1994), 7629.

Gee GC, Payne-Sturges DC. Environmental health disparities: a framework integrating psychosocial and environmental concepts. *Env Hlth Perspect* 2004; 112:1645

Hood, Ernie. Focus: Dwelling Disparities. *Envirol Hlth Perspecs* 2005; 113:5

Institute of Medicine. From Neurons to Neighborhoods: The Science of Early Childhood Development (2000)

Kawachi I, Kennedy BP, Lochner K, Prothrow-Stith D. Social capital, income inequality, and mortality. *Am J Public Health*. 1997 Sep;87(9):1504-6.

Kids Count Data Book. Annie E. Casey Foundation

Lee, C. "Environmental Justice" in Frumkin H (ed). *Environmental Health: From Global to Local*. John Wiley and Sons, 2005

Rubin, I.L., Nodvin, J.T., Geller, R.J., Teague, W.G., Holzclaw, B.L., Felner, E.I. Environmental Health Disparities and Social Impact of Industrial Pollution in a Community – the Model of Anniston, AL Pediatric Clinics of North America. 2007 54:375-398

Rubin, I.L., Geller, R.J., Nodvin, J., Ace, K., Merrick, J. Break the Cycle of Adverse Health and Developmental Outcomes for Children. *International Journal of Child and Adolescent Health* 2009 Volume 2 Number 3

Rubin, I.L., Ace, K., Nodvin, J., Geller, R.J., Marcus, M., Merrick, J. Special Issue on Vulnerable Children: Break the Cycle of Environmental Health Disparities *International Journal of Child Health and Development* 2010 Volume 3, Issue 4

U.S. Environmental Protection Agency, Office of Policy, Economics, and Innovation. Evaluating the Use of Partnerships to Address Environmental Justice Issues. EPA/100-R-03-001. Washington, D.C.: Environmental Protection Agency, January 2003.

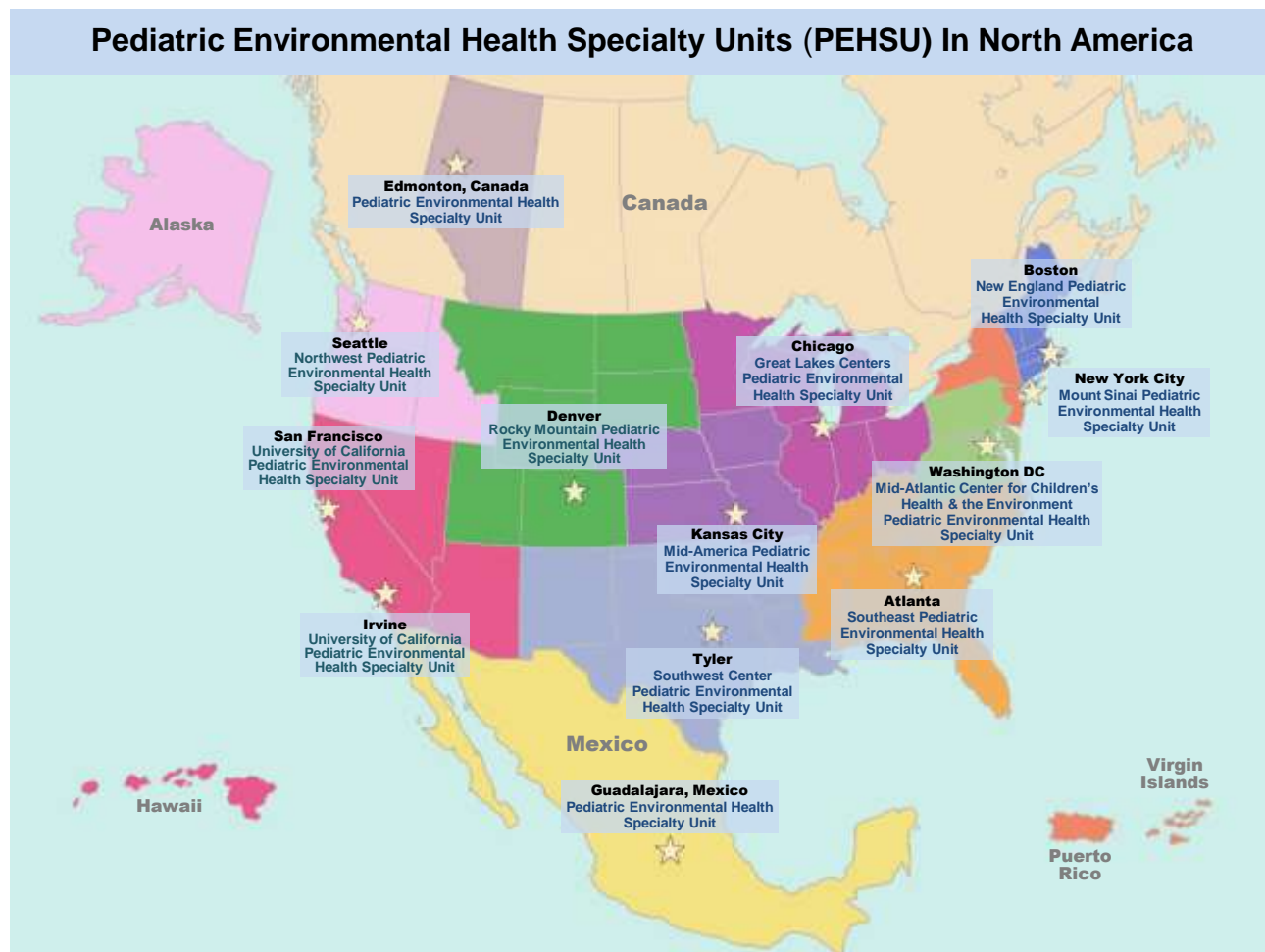


The Pediatric Environmental Health Specialty Units (PEHSU) form a respected network of experts in children's environmental health. The PEHSU were created to ensure that children and communities have access to special medical knowledge and resources for children faced with a health risk due to a natural or human-made environmental hazard, usually at no direct cost.

Located throughout the U.S., Canada, and Mexico, PEHSU professionals provide quality medical consultation for health professionals, parents, caregivers, and patients. The PEHSU are also dedicated to increasing environmental medicine knowledge among healthcare professionals around children's environmental health by providing consultation and training. Finally, the PEHSU provide information and resources to school and community groups to help increase the public's understanding of children's environmental health.

This work is important because children are uniquely vulnerable to environmental toxicants, such as lead, mold, pesticides, and many other sources. Children's environmental health is the study, prevention and treatment of the effects of these toxicants on the health and development of children. It is also important because most healthcare professionals do not receive training to prevent, recognize, manage and treat environmentally-related conditions.

Pediatric Environmental Health Specialty Unit Locations:



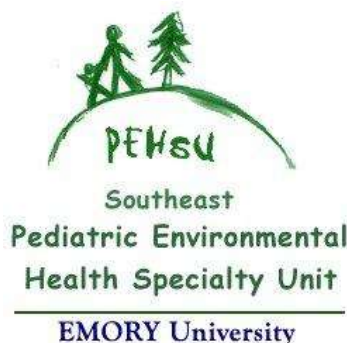
The Southeast Pediatric Environmental Health Specialty Unit at Emory University provides:

- 1-Technical assistance to agencies, health care providers, and concerned individuals
- 2-Health education (e.g. speaking engagements)
- 3-Individual consultation and referral to clinical pediatric environmental health services
- 4-Support and participate in research
- 5-Educational materials

Our region: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee

Our partnerships include Emory University Department of Pediatrics, Emory University School of Public Health, Emory University School of Nursing, Morehouse School of Medicine Department of Pediatrics and The Institute for the Study of Disadvantage and Disability, Inc.

We can be contacted at www.sph.emory.edu/PEHSU or toll free at 1-877-337-3478



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In 2004, the Institute for the Study of Disadvantage and Disability was formed to address the relationship between social and economic disadvantage and the prevalence of developmental disabilities and to reduce health disparities and the disparity in services available for this vulnerable population. The mission of ISDD is to address the environmental impact of social and economic factors on the growth, health and development of children by:

- Supporting and developing programs for families that will reduce the impact of social and economic disadvantage on the health, growth and development of children and adults
- Supporting and coordinating research to reduce the environmental factors that predispose children to developmental disabilities and other chronic health related problems throughout the life span
- Influencing health care policy and practices, training of health care professionals and cultivating future leaders in reducing the impact of social and economic disadvantage on disabilities and other health related problems in children and adults.

This is accomplished through:

Research

ISDD has partnered with the Southeast PEHSU since its inception and in particular has partnered on the ***Break the Cycle*** program. This program invites students and faculty from a variety of colleges and universities to develop projects that will Break the Cycle of Disadvantage and Disability and of Environmental Health Disparities. The project findings are presented at a conference and published in monographs and international journals. This annual program focuses on cultivating future leaders.

Healthcare Without Walls: A Medical Home for Homeless Children (HWW) HWW is a comprehensive community-based model addressing the health care needs of children who have been homeless. ISDD works in collaboration with Mary Hall Freedom House, the Morehouse School of Medicine, Children's Healthcare of Atlanta, Georgia State University and Emory University School of Public Health.

Service Programs

Project GRANDD is a program that provides a network of supports to grandparents in the greater metropolitan Atlanta who are raising their grandchildren who have disabilities, chronic illness, and behavior or learning difficulties.

Adult Down Syndrome Program is an interdisciplinary program that provides coordination of medical, educational, nutritional and life plans for adolescents and adults with Down syndrome and their families.

Partnership with ***Southeast Pediatric Environmental Health Specialty Unit at Emory University (PEHSU)*** to provide consultation, education and referral for questions concerning children's health and the environment especially around environmental health disparities

Interdisciplinary Clinical Programs for autism spectrum disorders, cerebral palsy, and developmental disabilities are held at Children's Healthcare of Atlanta - Hughes Spalding Children's Hospital and the Department of Pediatrics, Morehouse School of Medicine.

Education, Training & Outreach

- Morehouse School of Medicine Medical Student & Pediatric Residency Programs
- Emory University School of Medicine, Department of Pediatrics; School of Nursing; and School of Public Health
- Interdisciplinary leadership training of the students from many universities and colleges in the Break the Cycle Projects
- Local, regional, national and international presentations and conferences
- Partnerships with local, regional, national and international associations, universities and agencies

Advocacy –Health Care Policy

Break The Cycle projects serve to cultivate future leaders and influence health care policy.

ISDD collaborates with local, regional, national and international disability groups with similar missions.

Website: www.isdd-home.org