

BREAK THE CYCLE **11**

BREAK THE CYCLE OF ENVIRONMENTAL HEALTH DISPARITIES

APRIL 18-19, 2016

ROLLINS AUDITORIUM, 1ST FLOOR
HEALTH SCIENCES RESEARCH BUILDING, EMORY UNIVERSITY
1760 HAYGOOD DRIVE NE, ATLANTA, GEORGIA 30322

A PROJECT OF:

Southeast Pediatric Environmental Health Specialty Unit at Emory

Innovative Solutions for Disadvantage & Disability

Georgia Council on Developmental Disabilities

Sustainability Initiatives at Emory University



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For more information, visit us at: www.pehsu.emory.edu or www.isdd-home.org or www.sustainability.emory.edu

MONDAY APRIL 18, 2016

8:00 AM REGISTRATION & BREAKFAST

8:30 AM OPENING OF PROGRAM

Robert Geller, MD, Director, Southeast PEHSU, Professor of Pediatrics, Emory University, Atlanta GA

8:40 AM MESSAGE FROM THE ATSDR

Michael Hatcher, DrPH, Chief, Environmental Medicine Branch, Division of Toxicology and Human Health Sciences, ATSDR, CDC, Atlanta GA

8:50 AM MESSAGE FROM THE EPA

Latisha P. Mapp, Acting Director, Program Implementation and Coordination Division, United States EPA Office of Children's Health Protection, Washington DC

9:00 AM MESSAGE FROM THE AAP

Jerome A. Paulson, MD, Medical Director, Pediatric Environmental Health Specialty Units – East Medical Director, AAP Initiative on Climate Change and Health

9:10 AM INTRODUCTION TO BREAK THE CYCLE

Leslie Rubin, MD, Director, Break the Cycle Program, Associate Professor, Morehouse School of Medicine, President, ISDD, Atlanta GA

9:45 AM ACCESS TO EARLY INTERVENTION SERVICES FOR PRETERM SURVIVORS

Marie Fefferman, student, Dr. Bree Andrews and Dr. Michael Msall, mentors, University of Chicago, Pritzker School of Medicine, Department of Pediatrics

10:05 AM BARRIERS TO BLOOD LEAD SCREENING PRACTICES AMONG HEALTHCARE PROVIDERS

Jennifer Ross, student, Dr. Nicholas Newman, mentor, University of Cincinnati, College of Medicine, Department of Environmental Health

10:25 AM ZIKA—HIGHLIGHTS AND RECOMMENDATIONS

Kurt Martinuzzi, MD, Emory University, Department of Obstetrics/Gynecology

10:40 AM HEALTH BREAK

11:00 AM AN ECOLOGICAL MODEL OF HEALTHCARE DISPARITIES FOR POOR CHILDREN IN THE SOUTH

Kammy Kuang, student, Dr. David Wood and Dr. Kiana Johnson, mentors, East Tennessee State University, Quillen College of Medicine, Department of Pediatrics

KEYNOTE SPEAKER

11:20 COMMUNITY ENGAGEMENT: A FRAMEWORK FOR SCIENCE THAT MATTERS

Community engaged research is in many ways very traditional and in others- radically novel. It uses community building principles of cooperation, commitment, dialogue and negotiation of shared values to drive science into areas of health disparity research and other unsolved health problems of our time.

Linda A. McCauley, RN, PhD, Dean and Professor, Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta GA

12:00 PM LUNCH

1:30 PM HEALTH VULNERABILITIES OF UTAH'S IMMIGRANT CHILDREN: BREAKING THE CYCLE

Grant Holyoak and Morgann Holyoak, students, Dr. Courtney Flint, mentor, Utah State University, Department of Sociology, Social Work and Anthropology (Grant), Department of Education and Human Services (Morgann)

1:50 PM ADDRESSING SOCIAL DETERMINANTS OF HEALTH AT A FEDERALLY QUALIFIED HEALTH CENTER

Caroline Hensley, student, Dr. Kelley Carmelli, mentor, University of Cincinnati, Public Health Sciences Department of Environmental Health

2:10 PM MOMMY--A MATERNAL SURVEILLANCE SYSTEM

Júlia Carmona Almeida Chaves, student, Dr. Enrique Cifuentes, mentor, University of Sao Paulo, Department of Computer Science and Mathematics

2:30 PM SCHOOL READINESS IN YOUNG CHILDREN

Ellen Litkowski, student, Dr. Ann Kruger, mentor, Georgia State University, Department of Educational Psychology and Special Education

2:50 PM HEALTH BREAK

3:30 PM LEARN, EAT, GROW: HEALTHY LIVING INITIATIVE

Maya Bornstein, student, Dr. Melissa Pirkey, mentor, Emory University College of Arts and Sciences

3:50 PM ASSESSING THE HEALTH OF GRANDPARENTS WHO RAISE GRANDCHILDREN WITH DISABILITIES

Kelly Brown, student, Dr. Lilly Immergluck, mentor, Morehouse School of Medicine, Department of Clinical Research

4:10 PM I WAS SCARED OVER THERE--FAMILY WELLBEING AFTER RELOCATION FROM A DISTRESSED PUBLIC HOUSING DEVELOPMENT

Kirstin Frescoln, student, Dr. Mai Nyugen, mentor, the University of North Carolina at Chapel Hill, Department of City and Regional Planning

4:30 PM ART WORKS: CONVERTING ISSUES INTO ART

Paul Nyugen, student, Caleb Peng and Marc Cordon, mentors, Emory University College of Arts and Sciences, Office of Health Promotion; Rollins School of Public Health

4:50 PM REVIEW AND CONCLUSION

Leslie Rubin, MD

5:00 PM ADJOURN

TUESDAY APRIL 19, 2016

8:30 AM INTRODUCTION

Leslie Rubin, MD, Director, Break the Cycle Program, Associate Professor, Morehouse School of Medicine, President, ISDD, Co-director Southeast PEHSU, Atlanta GA

8:50 AM COMMUNITY ENGAGEMENT ADDS VALUE TO ENVIRONMENTAL HEALTH SCIENCE AT EMORY

Melanie A. Pearson, PhD, Director of Community Engagement, Michigan PBB Registry, HERCULES – Emory's Environmental Health Research Center, Rollins School of Public Health, Emory University, Atlanta GA

9:10 AM ENGAGING YOUTH IN COMMUNITY-ENVIRONMENT RESEARCH

Courtney G. Flint, Ph.D. Associate Professor Dept of Sociology, Social Work & Anthropology, Utah State University, Logan UT

9:30 AM POSITING CHANGE IN LIVES THROUGH EVIDENCE-INSPIRED, UNITED ACTION AND COMMUNITY SERVICE (PLUS)

Carol J. Rowland Hogue, PhD, MPH, Jules & Uldeen Terry Professor of Maternal and Child Health, Professor of Epidemiology, Director, Women's and Children's Center, Rollins School of Public Health, Emory University, Atlanta GA

9:50 AM CHALLENGES TO WORK GROUPS

Leslie Rubin, MD

10:00 AM HEALTH BREAK

10:15 AM GROUP DISCUSSIONS

11:00 AM FEEDBACK FROM GROUPS AND CONCLUSION

12:00 PM ADJOURN

GUEST PRESENTERS:

LINDA A. MCCAULEY RN, PHD, FAAN, FAAOHN, DEAN AND PROFESSOR, NELL HODGSON WOODRUFF SCHOOL OF NURSING, EMORY UNIVERSITY, ATLANTA GA

Linda A. McCauley is dean of the Nell Hodgson Woodruff School of Nursing. Dr. McCauley has special expertise in the design of epidemiological investigations of environmental hazards and is nationally recognized for her expertise in occupational and environmental health nursing. Her work aims to identify culturally appropriate interventions to decrease the impact of environmental and occupational health hazards in vulnerable populations, including farm workers and young children. She has been widely published in the fields of nursing and environmental health. She is a sought-after speaker and has been featured in national publications and broadcasts including Time, Business Week, the Atlanta Journal-Constitution, NPR, and the Weather Channel. Dr. McCauley is a member of the Institute of Medicine, she is active on the Membership Committee, Environmental Health Roundtable and the Board of Population Health. She currently serves as a member of the National Advisory Environmental Health Sciences Council. She also is a fellow of the American Academy of Nursing and the American Academy of Occupational Health Nurses.

MELANIE A. PEARSON, PHD, DIRECTOR OF COMMUNITY ENGAGEMENT, MICHIGAN PBB REGISTRY, HERCULES – EMORY'S ENVIRONMENTAL HEALTH RESEARCH CENTER, ROLLINS SCHOOL OF PUBLIC HEALTH, EMORY UNIVERSITY, ATLANTA GA

Melanie Pearson received her bachelor's degree from Clemson University and her graduate degrees from the University of Missouri-Columbia. She began working as an environmental scientist at Emory University, managing two longitudinal environmental exposures studies, publishing scholarly articles, and working with a local community to address environmental concerns and implement an alternative approach to pesticide applications for their municipal sports fields. Through this work, Dr. Pearson developed a strong interest in community-engaged research, playing a primary role in implementing and conducting community-based initiatives for three NIH-funded research centers. She currently works with a state-wide community of farmers, former chemical workers, residents, and their children who continue to suffer from an industrial mix-up that led to polybrominated biphenyls (PBB) being mixed into livestock feed, resulting in the contamination of food products distributed throughout the state of Michigan in the 1970s. This work has led to in-depth engagement with the community surrounding the former chemical plant responsible for both the industrial mix-up as well as waste practices that continue to plague the community with three Superfund sites. This collaboration with the affected community, a local non-profit, a district health department, and the research team has led to four additional research grants.

Dr. Pearson also co-leads the Community Outreach and Engagement Core of the Emory HERCULES Exposome Research Center for which she has developed strategies to engage the local Atlanta community with the dual-purpose of strengthening the Atlanta community in its capacity to address its environmental health concerns and to create a feedback system so that the community's concerns and ideas are shared with the scientists and integrated into the exposome concept. To this end, HERCULES offers a community grants program, a technical assistance program, and direct interaction between HERCULES scientists and community members. A highly engaged, 30 plus member Stakeholder Advisory Board (SAB) guides core activities via quarterly board meetings interspersed with smaller, focused SAB workgroups.

**COURTNEY G. FLINT, PH.D. ASSOCIATE PROFESSOR DEPT OF SOCIOLOGY, SOCIAL WORK & ANTHROPOLOGY
UTAH STATE UNIVERSITY, LOGAN UT**

Dr. Courtney Flint is an Associate Professor of Sociology at Utah State University. Her research and teaching focus on natural resource sociology and community wellbeing and vulnerability. She is particularly interested in contributing to the development of a global mountain community observatory and works closely with the Mountain Research Initiative in Bern, Switzerland, to foster the integration of mountain social science. Dr. Flint serves as vice-chair of the U.S. EPA's Board of Scientific Counselors' Sustainable and Health Communities Committee as well as on the advisory board of the Afro-Montane Research Unit of the University of the Free State in South Africa.

**CAROL J. ROWLAND HOGUE, PHD, MPH, JULES & ULDEEN TERRY PROFESSOR OF MATERNAL AND CHILD
HEALTH, PROFESSOR OF EPIDEMIOLOGY, DIRECTOR, WOMEN'S AND CHILDREN'S CENTER, ROLLINS SCHOOL
OF PUBLIC HEALTH, EMORY UNIVERSITY, ATLANTA GA**

Carol Hogue PhD, MPH, is Terry Professor of Maternal and Child Health and Professor of Epidemiology in the Rollins School of Public Health of Emory University. She is also Director of Emory's Center of Excellence in MCH Education, Science, and Practice and Director of Emory's Women's and Children's Center. She is one of the founding mentors in the BTC program and has mentored many leading public health professionals. Her current research interests are how to eliminate racial disparities in perinatal health with focus on the intersection of biology, social science, and evidence-based practice.

CONFERENCE PARTICIPANTS

UNIVERSITY OF CHICAGO PRITZKER SCHOOL OF MEDICINE DEPARTMENT OF PEDIATRICS

STUDENT:

MARIE FEFFERMAN

Marie Fefferman is a fourth-year undergraduate at the University of Chicago, studying Public Policy and Biology. As a research assistant for Dr. Bree Andrews and Dr. Michael Msall, Marie is interested in understanding barriers to healthcare access among underserved populations. Her research explores the discrepancies in access to early intervention services for preterm infants. With this research, she hopes to learn how to help underserved families and their children receive the highest level of care possible. Apart from her research, Marie directs a volunteer program at Maria Shelter, a women's transitional shelter for homeless women with multiple health and social challenges on the South Side of Chicago. This program offers various health, counseling and social services for the women and child care for those under 5 years and after school tutoring for children aged 5-18 years. She also tutors pediatric patients in Comer Children's Hospital which serves a large number of children with special health care needs and children exposed to violence and poverty. Marie will attend medical school in Chicago next year and would like to focus her efforts on women and children in underserved Chicago communities.

FACULTY MENTOR:

BREE ANDREWS, MD/MPH

Dr. Bree Andrews is faculty at the Pritzker School of Medicine in the Department of Pediatrics. She is also the Director for the Center for Healthy Families, the NICU follow up program at the Comer Children's Hospital and Larabida Children's Hospitals in Chicago. Her outpatient research focuses on social determinants of health and the role of legal advocacy in improving health outcomes. In the NICU she focuses on determining and conveying prognosis to parents for VLBW infants. Traditionally prognostic efforts have focused on a broad view of epidemiology. She takes a more personal approach to determine each infant's prognosis and to shape ongoing developmental care accordingly.

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE DEPARTMENT OF ENVIRONMENTAL HEALTH

STUDENT:

JENNIFER ROSS, MD

Dr. Jennifer Ross is currently completing her MPH in Health Services Management at the University of Cincinnati College of Medicine. Dr. Ross received her B.S. from the University of Kentucky and her M.D. from the University of Cincinnati. She will begin her medical residency in pediatrics in June at the Children's Hospital of The King's Daughters in Norfolk, Virginia. After completing her residency training she plans to incorporate public health into her career as a pediatrician, focusing on underserved populations and preventive medicine.

FACULTY MENTOR:

NICHOLAS NEWMAN, MD

Dr. Nicholas Newman is a physician who is board-certified in general pediatrics and occupational/environmental medicine. He is the director of the Pediatric Environmental Health Specialty Unit (PEHSU) Satellite at Cincinnati Children's Hospital (CCHMC) as well as the Medical Director of the Pediatric Environmental Health and Lead Clinic. He is Co-Director of the Community Outreach and Engagement Core for the NIEHS P30 Center at the University of Cincinnati and is the Associate Program Director for the Occupational/Environmental Medicine Residency program at the University of Cincinnati. His interests include: translation of environmental health research into action, lead poisoning prevention, and mitigating the effects of inhaled pollutants on human health.

**EAST TENNESSEE STATE UNIVERSITY
QUILLEN COLLEGE OF MEDICINE
DEPARTMENT OF PEDIATRICS**

STUDENT:

KAMMY KUANG

Kammy Kuang is a recent graduate of East Tennessee State University (ETSU). She completed her undergraduate study in Public Health with the concentration in Health Service Administration in August 2015. Kammy currently works as a Research Assistant in the Pediatrics Department at ETSU Quillen College of Medicine. Her primary research interests include health care disparities among marginalized populations, health communication and education, family empowerment, as well as public policy and community advocacy. She will be attending Columbia University Mailman School of Public Health in the fall of 2016 to pursue a Master's degree in Public Health. She hopes to use her training in sociomedical sciences and epidemiology to serve as a social advocate for the unprivileged communities both in the U.S. and abroad.

FACULTY MENTORS:

DAVID WOOD, MD, MPH, FAAP AND KIANA JOHNSON, PHD, MSED, MPH

Dr. David Wood graduated with honors from Harvard University, completed medical school and pediatric and preventive medicine residencies at UCLA. He also completed a fellowship in Health Services Research at RAND/UCLA. He is currently a Tenured Professor and Chair, Department of Pediatrics at the East Tennessee State University. For more than twenty years his research and advocacy efforts have focused on improving the health and health care for underserved children and adults. He has published more than 150 peer-reviewed publications, reports, and book chapters. He has founded programs for and conducted advocacy-oriented research on multiple groups of disadvantaged children, including poor children, children in homeless shelters, children in foster care and youth with special health care needs. He directed the Jacksonville Health and Transition Services (JaxHATS) program from 2005 until late 2014, a model patient-centered medical home to over 1000 medically complex and developmentally disabled youth and young adults. Dr. Wood helped create and was the Medical Director of FloridaHATS, the Florida Office of Health Care Transition. Dr. Wood has been active in advocacy for disadvantaged children and adults, with a focus on children and adults with IDD, serving as a gubernatorial appointee to the Florida Developmental Disabilities Council for over 12 years. In his current position Dr. Wood is working with ETSU colleagues and community partners to evaluate the health and health care services of children and families in Middle Appalachia, and to build health care programs to meet children's critical health needs.

Dr. Kiana Johnson is a native of Indianapolis, Indiana, where she attended Purdue University. Her graduate work was completed at both Purdue University (PhD) and the University of Minnesota (MPH). Dr. Johnson has completed two post-doctoral fellowships at the University of Minnesota. As a Leadership Education in Neurodevelopmental Disabilities (LEND) fellow she focused her work on the transition to adult healthcare for youth with neurodevelopmental disabilities. As a Leadership Education in Adolescent Health (LEAH) fellow she focused her efforts on health self-management and motivation for youth with special healthcare needs. Dr. Johnson is currently an Assistant Professor in the Department of Pediatrics at East Tennessee State University where she focuses her efforts on the transition to adulthood and adult healthcare for youth with special health care needs. She serves an advocate in many non-profit organizations and taught workshops to patients and families on the topic of self-advocacy. Dr. Johnson has published in international journals and presented at numerous international conferences.

**UTAH STATE UNIVERSITY
DEPARTMENT OF SOCIOLOGY, SOCIAL WORK AND ANTHROPOLOGY
SCHOOL OF ELEMENTARY EDUCATION AND LEADERSHIP**

STUDENTS:

GRANT AND MORGANN HOLYOAK

Morgann Holyoak is a senior at Utah State University graduating in Elementary and Early Childhood Education. She worked on campus as a grader and is now working on a research project that aims to uncover the health vulnerabilities that reside in the immigrant youth population. Her passion is in pre-school education and she hopes to one day be an international pre-school teacher.

Grant Holyoak is an undergraduate senior pursuing majors in sociology and economics and a minor in statistics from Utah State University. He served a full-time LDS (Mormon) mission to Chihuahua, Mexico from 2011-2013. He married Morgann Seipert in August 2014. He has many research interests, and throughout his undergraduate career has completed projects related to corporate migration, demographic shifts in Western states, climate change beliefs, residential water use, immigration policy, social service provision, and US-Latin American foreign relations. He will pursue a career as a Foreign Service Officer in the US Department of State following his graduate education.

FACULTY MENTOR:

COURTNEY FLINT, PHD

Dr. Courtney Flint is an Associate Professor of Sociology at Utah State University. Her research and teaching focus on natural resource sociology and community wellbeing and vulnerability. She is particularly interested in contributing to the development of a global mountain community observatory and works closely with the Mountain Research Initiative in Bern, Switzerland, to foster the integration of mountain social science. Dr. Flint serves as vice-chair of the U.S. EPA's Board of Scientific Counselors' Sustainable and Health Communities Committee as well as on the advisory board of the Afro-Montane Research Unit of the University of the Free State in South Africa.

**UNIVERSITY OF CINCINNATI
COLLEGE OF MEDICINE
DEPARTMENT OF ENVIRONMENTAL HEALTH**

STUDENT:

CAROLINE HENSLEY

Caroline Hensley is currently completing her MPH with a concentration in Health Services Management at the University of Cincinnati College of Medicine. She earned her Bachelor of Science in Biology and Bachelor of Arts in Spanish from the University of Cincinnati. Caroline coordinates the volunteer internship program at Crossroad Health Center, an FQHC in Cincinnati. Caroline co-founded the Let's Change Our City initiative in Cincinnati and is committed to finding creative and efficient ways to better serve the healthcare and social needs of individuals experiencing poverty. Her research interests include social determinants of health, developmental disabilities, interdisciplinary healthcare teams, minority health, and health equity. Caroline will begin her MD at the University of Cincinnati College of Medicine in August 2016 and looks forward to serving vulnerable populations in the US and abroad throughout her career.

FACULTY MENTOR:

KELLEY CAMELI, DRPH

Dr. Kelley Carameli is a doctoral alumni of the UCLA School of Public Health. She serves as a Health Scientist in the Research Division of the Veterans Health Administration, National Center for Organization Development (www.va.gov/NCOD). Dr. Carameli has served with the VA since 2010, as a researcher and communications lead on organizational health and development issues, including workforce engagement, job satisfaction, civility, and psychological safety.

Dr. Carameli communicates these applied organizational health experiences to the next generation of healthcare leaders as an Adjunct Assistant Professor at the University of Cincinnati, College of Medicine, Department of Environmental Health (www.med.uc.edu/eh). She has provided graduate-level instruction at UC since 2011, and previously at UCLA, the University of Chicago, and UIUC.

UNIVERSITY OF SAO PAULO DEPARTMENT OF COMPUTER SCIENCE AND MATHEMATICS

STUDENT:

JULIA CARMONA ALMEIDA CHAVES

[Julia Carmona](#) studies Biomedical Informatics at University of Sao Paulo, Brazil; she has been in Lisbon for 6 months studying informatics engineering through an exchange scholarship; she was a student of the Science without Borders program and studied Biomedical Sciences at SUNY at Plattsburgh for one year. She also was Teacher Assistant of Dr. Enrique Cifuentes helping him to build the winter course: Public Health In Megacities: The Environmental Dimension. Now, she wants to use technology to help people to have a healthier life and, consequently, live better.

FACULTY MENTORS:

ENRIQUE CIFUENTES, MD, PHD, MS AND ALESSANDRA MACEDO, PHD, MSC

[Dr. Enrique Cifuentes](#) is a Principal Research Scientist in the Department of Environmental Health at the Harvard TH Chan School of Public Health. In recent years, he and his partners conducted a series of community based projects (CBP) focused on the obesogenic environment in cities, youth violence as a public health crisis, as well as prenatal exposure to methyl mercury (fish consumption during pregnancy) and infants' neurobehavioral development. (http://www.case.org/Award_Programs/Circle_of_Excellence/Previous_Winners/2015_Winners/News_and_Research_Videos_2015.html) He is also teaching a new course: "Public health in megacities; the environmental dimension" which will offer opportunities for collaboration and exchange between faculty and students from the Harvard TH Chan School of Public Health and academic institutions from Latin America and the Caribbean countries over the next four years (<http://mcao.drclas.harvard.edu/public-health-megacities> see also <https://publichealthinmegacities.wordpress.com/>)

[Dr. Alessandra Macedo](#) studied Computer Science at the State University of Londrina; received a MSc. in Computer Science at the University of Sao Paulo and received a PhD in Computer Science at the University of Sao Paulo. Currently, she is a professor at the University of Sao Paulo at Ribeirão Preto. Her currently research interests includes Hypermedia, Semantic Web, Information Retrieve, and Biosciences.

GEORGIA STATE UNIVERSITY DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SPECIAL EDUCATION AND COMMUNICATION DISORDERS

STUDENT:

ELLEN LITKOWSKI

[Ellen Litkowski](#) is currently completing her PhD in Educational Psychology at Georgia State University. She received her B.S. in Biology and English from Duke University in 2011. While at Duke, she became involved in implementing outreach activities to encourage young girls in the Durham area to pursue careers in science. This outreach experience prompted her desire to continue teaching, especially in low-income areas. Following graduation, she spent a year serving in Literacy AmeriCorps where she taught in a preschool for students of migrant farmworker parents. Through

her current degree program, she has been able to combine her interests in psychology and learning – particularly in regards to young, urban students. Ellen hopes pursue a career in policy or academia, where she can work to improve developmental and educational outcomes for young children.

FACULTY MENTOR:

ANN CALE KRUGER, PH.D.

Dr. Ann Cale Kruger is an Associate Professor of Educational Psychology at Georgia State University. She is a developmental psychologist whose research investigates the functions of discourse, relationships, and thought in the development of cultural knowledge. Dr. Kruger has investigated the changes in language development and academic achievement in children who experience instruction that integrates drama into the language arts curriculum. Dr. Kruger is also on the research faculty of the GSU Center for Research on School Safety where she directs Project PREVENT, an intervention to promote the psychological health of Atlanta school children most at risk of commercial sexual exploitation.

**EMORY UNIVERSITY
COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF SOCIOLOGY**

STUDENT:

MAYA BORNSTEIN

Maya Bornstein is a first-year student at Emory University studying sociology and economics. She is especially interested in social justice and health disparities. As a board member of the Homeless Outreach Awareness Program, Maya has taken an active role in the fight against poverty and advocates for education to break the stigmas associated with individuals experiencing homelessness. Through tutoring volunteering and facilitating workshops in Atlanta, Washington DC, Boston, and Jerusalem, Maya strives to promote sensitivity to differences and awareness of unconscious bias. After Break the Cycle, she will continue to work on urban health initiatives and will continue to partner with Druid Hills High School in order to build a greenhouse. She hopes to expand her Break the Cycle project in the Atlanta area in the coming years.

FACULTY MENTOR

MELISSA PIRKEY, PHD

Dr. Melissa Pirkey is a Post-Doctoral Teaching Fellow in the Sociology Department at Emory University. Her work draws on organizational, cultural, and social psychological theories and frameworks and focuses primarily on the processes and mechanisms that support cohesion, commitment, trust, and effectiveness in small groups and organizations. Additionally, Dr. Pirkey is interested in alternative food institutions and is currently exploring how stakeholder's perceptions of different types of alternative food institutions shapes structure and behavior within those organizations.

MOREHOUSE UNIVERSITY SCHOOL OF MEDICINE

STUDENT:

KELLY BROWN

Kelly Brown is a Master of Science in Clinical Research Fellow at Morehouse School of Medicine from Detroit, Michigan. She received her B.S. from Howard University in Sports Medicine with a Minor in Chemistry. Ms. Brown has been in the research field for 5 years. While in undergrad under the guidance of her mentor, she conducted basic research on thermodynamics. In 2012, she had the opportunity to present her findings at the National American Chemical Society Symposium in San Diego, California. In addition to her research, she is heavily involved in serving her community. Ms. Brown has had the liberty of working with inner city youth in cities such as Chicago, New Orleans, and Baltimore. She recently partnered with Habitat for Humanity to help build a home for a welcoming older woman in East Point, GA. She is currently working on two research projects. One of her projects specifically examines the health of grandparents who raise grandchildren with disabilities. She can be reached at kbrown@msm.edu.

FACULTY MENTOR:

LILLY IMMERGLUCK, MD, MS, FAAP

Dr. Lilly Immergluck is Associate Professor in the Departments of Microbiology/Biochemistry/Immunology and Pediatrics and is Director of the Pediatric Clinical & Translational Research Unit of the Clinical Research Center, Morehouse School of Medicine. She also holds an adjunct appointment as Associate Professor of Clinical Pediatrics at Emory University, in the Division of Pediatric Infectious Diseases. She is a general pediatrician and pediatric infectious disease specialist, who is interested in understanding the social determinants which may impact children developing antibiotic resistant and vaccine preventable infections. Dr. Immergluck has particular interest in understanding the clinical and molecular epidemiology of children who develop community associated methicillin resistant *Staphylococcus aureus*. Her research in particular has centered on understanding the social determinants which contribute to health disparities seen with a number of both infectious and non-infectious diseases which affect our nation's children, using geo-spatial statistical modeling. Dr. Immergluck serves on the Executive Council for the Section on Infectious Diseases for the American Academy of Pediatrics. She also is involved with the local Georgia Chapter of the AAP, serving on the Infectious Diseases and School Health committees. She also serves as the Co-facilitator for the Academy's Community Access to Child Health (CATCH) program. Dr. Immergluck is involved in a number of the pediatric clinical translational and community engagement studies which are based at the Clinical Research Center. She has mentored several students at various stages in their academic and professional careers including undergraduate, graduate, and medical students.

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL DEPARTMENT OF CITY AND REGIONAL PLANNING

STUDENT:

KIRSTIN PETERSON FRESCOLN

Kirstin Peterson Frescoln is currently a doctoral student at the University of North Carolina at Chapel Hill where her research focuses on housing and community development to improve the health and well-being of vulnerable populations. She works as a graduate research assistant at the Center for Urban Regional Studies at UNC Chapel Hill. Prior to this, she served as North Carolina's Treatment Court Manager. As part of this work, she developed and delivered training and technical assistance to local and state courts to improve their court processes and service interventions for individuals involved in the criminal and civil abuse neglect court systems with alcohol, other drug, and mental health disorders. She is a Certified Public Manager and Certified Public Meetings Facilitator and Mediator.

FACULTY MENTOR:**MAI THI NGUYEN, PHD**

Dr. Mai Thi Nguyen is an Associate Professor in the City & Regional Planning Department at the University of North Carolina at Chapel Hill. She is an expert in housing policy, community economic development, immigration and urban growth phenomena. Her work has been published in peer-reviewed journal articles, edited books, and public policy reports. She also teaches courses in the Housing and Community Development specialization with the focus of teaching about practices and policies that create transformative community change. Her research has been funded by the National Science Foundation, the U.S. Department of Agriculture, the U.S. Department of Housing and Urban Development, and the John D. and Catherine T. MacArthur Foundation.

**EMORY UNIVERSITY
COLLEGE OF ARTS AND SCIENCES****STUDENT:****PAUL NGUYEN**

Paul Nguyen is a fourth-year at Emory College of Arts and Sciences double majoring in neuroscience and behavioral biology, and music composition. As a premedical student and musician, he is interested in continuing both fields of study after graduating with a Bachelor of Science in 2016. This project for Break the Cycle combines his interest in mental health and art, and builds upon his work in the Office of LGBT Life where he leads weekly identity-based discussion groups. His belief that art works in the world is founded both on his studies of the musical brain and his observation of various creative projects in the community, such as the art studio in the Metro Atlanta Task Force for the Homeless and the Issues Troupe. After participating in Volunteer Emory's Homeless Immersion trip, he continued to volunteer at various shelters and early-education programs in Atlanta. These experiences helped him create the Art Works project, which he plans to develop into a sustainable program during his gap year before medical school.

MENTORS:**CALEB PENG, BA AND MARC CORDON, MPH**

Caleb Peng is currently completing his MPH in Behavior Sciences and Health Education at Emory University Rollins School of Public Health. He works for Emory University's Division of Campus Life as a Complex Director, overseeing a Social Justice themed residence hall for second-year students. Caleb's current research is on how pornography consumption can increase gender-based violence in society at large. He has created various media projects in the past focused on sexual violence awareness and prevention that are used at 100+ universities, various organizations, and the United States Air Force.

Marc Cordon is the coordinator for the ACHA-NCHA study at Emory. He implements and oversees related research on health promotion strategies and student health needs and organizes Emory's Healthy Campus initiative. Marc received his BS in Neuroscience and Behavioral Biology from Emory University. He went on to receive his MPH in Health Policy and Management from Emory's Rollins School of Public Health, and is a PhD Doctoral Candidate for Counseling and Human Development Services at the University of Georgia. His other professional affiliations include the National Association of Student Personnel Administrators (NAPSPA) and the Southern Association for College Student Affairs (SACSA): Chair, Multicultural Awareness.

SOUTHEAST PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNIT TEAM AT EMORY UNIVERSITY

EMORY UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PEDIATRICS

PEHSU

ROBERT J. GELLER, MD

Robert Geller currently serves as the Chief of the Emory Pediatrics Service at the Grady Health System/CHOA, Hughes Spalding campus, as Medical Director of the Georgia Poison Center, and as Director of the Emory Southeast Pediatric Environmental Health Specialty Unit (PEHSU). Dr. Geller 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. He 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

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MAEVE HOWETT, PHD, APRN, CNP-PED, IBCLC

Maeve Howett is a pediatric nurse practitioner, lactation consultant, and Clinical Associate Professor in the Nell Hodgson Woodruff School of Nursing at Emory University. She has over twenty-five years of pediatric nursing experience, with research interests in infant attachment and 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. She lectures on multiple environmental topics and has incorporated environmental health into Emory School of Nursing's curriculum - twice lecturing to the National Student Nurses Association. Recently named to the Federal Advisory Committee: Environmental Protection Agency (EPA) Children's Health Protection Advisory Council (CHPAC), she also is President of the Georgia Chapter of Pediatric Nurse Practitioners and in 2013 became a Nurse Luminary with Healthcare Without Harm's Luminary Project. She serves on the international board of the Lactation Education Accreditation and Approval Committee (LEAARC) and in that capacity is also the commissioner to CAAHEP - the Commission on Accreditation in Allied Health Education Programs. Dr. Howett serves on the Sustainability Taskforce for Emory Healthcare. She has two grown children and is a foster parent for medically fragile infants.

MOREHOUSE SCHOOL OF MEDICINE DEPARTMENT OF PEDIATRICS INNOVATIVE SOLUTIONS FOR DISADVANTAGE AND DISABILITY

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LESLIE RUBIN, MD

Leslie Rubin, MD, is Research Associate Professor in the Department of Pediatrics at Morehouse School of Medicine, Co-Director of the Southeast Pediatric Environmental Health Specialty Unit at Emory, President and Founder of Innovative Solutions for Disadvantage and Disability, and Principal Investigator of the Healthy Tomorrows Partnership Project - Healthcare Without Walls, a project to create a medical home for homeless children. He founded the Institute for the Study of Disadvantage and Disability (now renamed Innovative Solutions for Disadvantage and Disability) in May 2004 and launched the first Break the Cycle Program in 2004-2005! He is dedicated to improving awareness and understanding of the relationship between social and economic disadvantage and disabilities in children. Since

2000, he has been a Co-Director with the Southeast Pediatric Environmental Health Specialty Unit at Emory University, where he focuses on raising awareness of environmental health disparities and promoting health equity for children - particularly those who are most vulnerable from exposure to adverse environmental factors. In 2012, the American Academy of Pediatrics (AAP) presented Dr. Rubin with the Calvin C. J. Sia Community Pediatrics Medical Home Leadership and Advocacy Award. This award honors pediatricians who have advanced the medical home through practice and advocacy, especially for children with special health care needs. On behalf of ISDD, he received the 21st Annual Community Service Award from Emory University Rollins School of Public Health and The Goizueta Business School of Emory University.

EMORY UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF OBSTETRICS & GYNECOLOGY

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KURT MARTINUZZI, MD

Kurt Martinuzzi, MD, is an assistant professor and specialist in Obstetrics and Gynecology at Emory University. His interests include resident and medical student education, recurrent pregnancy loss, premature ovarian failure and polycystic ovary syndrome. Over his 20 plus year career he has been awarded multiple teaching awards and presented at many national and regional Ob/Gyn meetings. Current NIH funded research involves the evaluation of a new rapid PCR technique to identify the shedding of HSV virus in laboring women.

EMORY UNIVERSITY DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES

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CLAIRE COLES, PH.D.

Claire D. Coles, Ph.D., is Professor of Psychiatry and Behavioral Sciences and Pediatrics at Emory University School of Medicine, Atlanta, Georgia, and Director of the Center for Maternal Substance Abuse and Child Development (MSACD). Dr. Coles' research on the developmental and behavioral effects of prenatal exposure to drugs and alcohol and on the interaction of these effects with the postnatal environment began in 1980 and was among the first to describe many behavioral effects of prenatal exposure in infants, young children and adolescents as well as the effects on brain in young adults. She was also among the first to investigate effects of cocaine exposure on child development. In 1995, Dr. Coles established the only multidisciplinary clinic in the Southeastern United States providing specialized services to individuals prenatally exposed to drugs and alcohol. Currently the Emory Neurobehavior and Exposure Clinic (ENEC) serves more than 200 new patients a year, providing differential diagnosis and behavior evaluation, referral, psychotherapy and educational services. In the addition to training of professionals in the care of children with prenatal exposure as well as environmental stress, MSACD carries out Clinical Research to design and improve interventions for affected individuals and their families, including the MILE (Math Interactive Learning Experience) program and the GoFAR intervention that supports self-regulation and adaptive functioning for children 3 to 9 years. Dr. Coles work has received national and international attention through the publication of numerous articles and books on these topics. Dr. Coles is the Director of MotherToBaby.Georgia, a Teratology Information Service associated with the National Organization of Teratology Information Specialists that provides free counseling to pregnant and breastfeeding women, their families and the professionals who care for them about the implications of exposure to drugs, alcohol, prescription medications and environmental exposures and a member of the South Eastern Pediatric Environmental Health Specialty Unit (PESHU).

INNOVATIVE SOLUTIONS FOR DISADVANTAGE AND DISABILITY

PEHSU

LAURA WELLS, LCSW

Laura Wells serves as Project Administrator for the Southeast Pediatric Environmental Health Specialty Unit. She is Program Director for ISDD, Innovative Solutions for Disadvantage and Disability. Ms. Wells directs Project GRANDD, a program providing intensive supports to grandparents who are raising grandchildren with disabilities. She serves as the Program Director for Healthcare Without Walls: A Medical Home for Homeless Children (HWW) and Healthcare Without Walls-Veterans (HWW-V). As Project Administrator for the PEHSU, Ms. Wells serves as the initial contact to the SE PEHSU as well as the project coordinator to our Break the Cycle projects. Ms. Wells is a Licensed Clinical Social Worker with over 17 years of experience working with children and adults with developmental disabilities. She is also the parent of a child with special needs. With this diversity, she shares insight with parents and professionals alike.

GEORGE WASHINGTON UNIVERSITY CHILDREN'S NATIONAL MEDICAL CENTER IN WASHINGTON D.C

BREAK THE CYCLE CONSULTANT

BENJAMIN GITTERMAN, MD

Benjamin Gitterman, MD is Associate Clinical Professor of Pediatrics and Public Health at George Washington University and Children's National Medical Center in Washington D.C. His major interests have included Children's Environmental Health, Child Advocacy, and Community Health-focused training and program development. Prior to coming to Washington D.C., he was the Director of Ambulatory Pediatric Services for Denver Health and Hospitals, and was a faculty member of the University of Colorado School of Medicine. In Washington, 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 (the PEHSU serving the mid-Atlantic region). He is a member of the Children's Environmental Health and Protection Advisory Council for the State of Maryland. He has been a member of the Scientific Advisory Board for Children's Environmental Health of the U.S. Environmental Protection Agency, and has been a liaison member to the Advisory Committee for Children's Lead Poisoning and Prevention for the CDC. He has been a member of the American Academy of Pediatrics (AAP) Committee on Children's Environmental Health. He is currently the Chairperson of the AAP Council on Community Pediatrics and is a member of the AAP Task Force on Childhood Poverty. He continues to be a practicing pediatrician.

HEALTH SERVICES, DIVISION FOR INTELLECTUAL AND DEVELOPMENTAL DISABILITIES, MINISTRY OF SOCIAL AFFAIRS AND SOCIAL SERVICES, JERUSALEM

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Joav Merrick, MD, MMedSci, DMSc, is Professor of Pediatrics, Child Health and Human Development, Kentucky Children's Hospital, University of Kentucky, Lexington, United States and affiliated with the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel. He is the Medical Director of the Health Services Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, and the founder and director of the National Institute of Child Health and Human Development in Israel. He has authored numerous publications in the fields of pediatrics, child health and human development, rehabilitation, intellectual disability, disability, health, welfare, abuse, advocacy, quality of life and prevention. Dr Merrick received the Peter Sabroe Child Award for outstanding work on behalf of Danish Children in 1985 and the International LEGO-Prize ("The Children's Nobel Prize") for an extraordinary contribution towards improvement in child welfare and well-being in 1987.

Thank you to our sponsors and participants.

Southeast Pediatric Environmental Health Specialty Unit at Emory: www.pehsu.emory.edu

Innovative Solutions for Disadvantage and Disability: www.isdd-home.org

Sustainability Initiatives at Emory University: www.sustainability.emory.edu

Georgia Council on Developmental Disabilities: www.gcdd.org

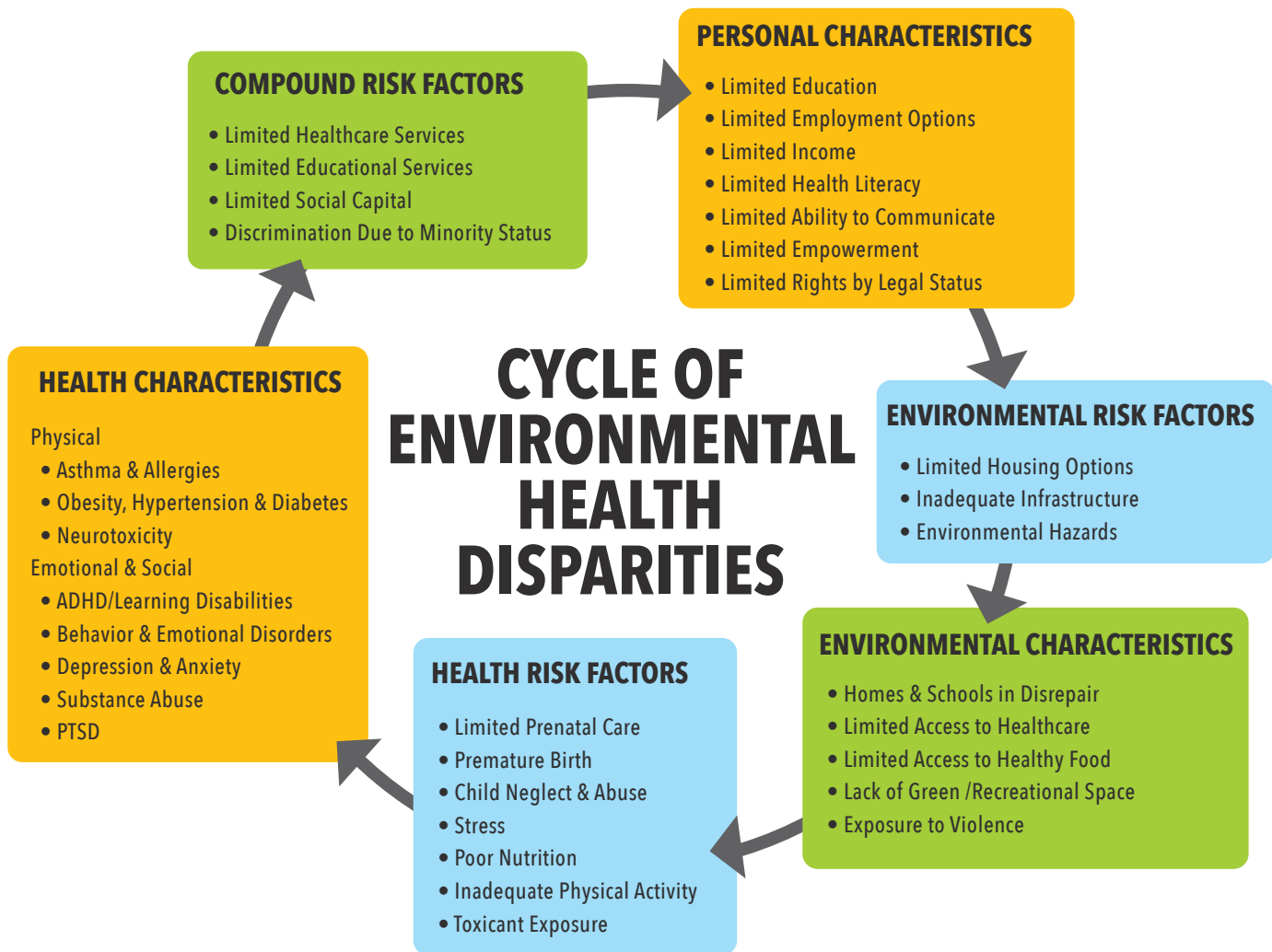
OVERVIEW OF BREAK THE CYCLE

The threats to children's health and well-being 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-body mass; they are closer to the ground, and they may pick up and play with objects and then put these objects in their mouths and may even swallow them. They are at risk, therefore, to absorb more toxins in the environment through their skin, from the air they breathe, from the food they eat, and the water they drink. Also, they do not yet have the fully sophisticated metabolic systems to detoxify some chemicals, or they may metabolize chemicals into toxic metabolites at a different rate than adults. Furthermore, because they are growing rapidly and their organs and organ systems are developing, they may incorporate toxins into their developing organ systems which can have immediate adverse impact. They are more likely to suffer long-term consequences on organ structure and function that may only be evident much later in life.

Today, some of the major health concerns for children, such as asthma, obesity and its complications of hypertension and diabetes, and neurodevelopmental disorders (most commonly learning disabilities, attention deficit hyperactivity disorder and autism), are often caused or exacerbated by environmental factors. Not only does the presence of a disorder or disability create significant complications that affect the child's health as well as learning and social opportunities, but it may adversely affect the child's potential for self-actualization and fulfillment. This is a challenge, not only at an individual level, but also at the level of the family and community and, ultimately, it also has an impact on society in terms of prevention and management strategies, and utilization of resources as well as how society cultivates its future citizens, workforce, and leaders.

Not only are children vulnerable to the chemical, physical and microbiological factors in their environment, they are uniquely sensitive to the social and economic environment in which they live, learn, and play. It has become increasingly evident that children who grow up in an environment of social and economic disadvantage are at greater risk for exposure to toxins like lead and other chemicals. They are impacted by the age and quality of the houses in which they live as well as the schools where they learn, the infrastructure of the communities in which they live, the risks of violence that they may experience, and the associated emotional stress that they face on a day to day basis. The vulnerability of these children is therefore greater, by virtue of their risks for exposure, magnified further by limitations in support for optimal education, access to quality health care, infrastructure, and limited social capital. The impact is even greater because the risks are cumulative.

The diagram below illustrates the elements that operate when children are born into circumstances of social and economic disadvantage and the resultant impact that manifests in disparities in health and education. The diagram also illustrates how the pattern becomes intergenerational and traps people in this cycle.



Our real challenge is how to Break the Cycle and liberate the children by providing a more nurturing and supportive environment, greater access to quality education and health services and to opportunities for success in life. We know this can be achieved at many different levels.

At a fundamental level, the idea of changing the life of one child for the better can have a positive impact not only for that child, but also for the family, for other people who know that child and for what that child can do in the present and in the future to change the world for the better. So, it might be said that “if you save the life of one child, you may be saving the whole world!” Ideally, it would be desirable to improve the lives of as many children as possible today, so that we have a better world in the future. Realistically, however, doing so would require substantial changes, if not complete redesign to many of our social institutions, including the health care delivery system, educational system, social safety net systems and economic and financial systems. Because those changes are beyond our scope and require large shifts in politics and economics over long periods of time, we have developed an approach to Break the Cycle and change the world a little at a time towards achieving health and educational equity for our most vulnerable children.

PROJECT PRESENTATIONS: ABSTRACTS

ACCESS TO EARLY INTERVENTION SERVICES FOR PRETERM SURVIVORS

Marie Fefferman, student; Dr. Bree Andrews and Dr. Michael Msall, mentors
University of Chicago, Comer Children's Hospital

This study examines access to state-provided Early Intervention (EI) programs among extremely low birth weight (ELBW) infants.

HYPOTHESIS:

- (1) ELBW Infants from low-income families have less access to state-provided Early Intervention services than infants from middle or high-income families.
- (2) ELBW Infants at greatest risk of neuro-developmental impairments receive the highest level of support from state-provided Early Intervention programs.

BACKGROUND: Extremely low birth weight (ELBW) infants or those born \leq 1000 grams are at high risk for developmental delays in early childhood and at school-age. At the time of NICU discharge, there are numerous social and public factors that impact how NICU 'graduates' are served in the community. Early Intervention programs take advantage of a crucial window during a child's development, and recent studies suggest that interventions during the first few years of life play an integral role in mediating the health and educational discrepancies that low-income children experience.

METHODOLOGY: Comer Children's Hospital at the University of Chicago discharges 800 infants each year from the Neonatal Intensive Care Unit (NICU). The NICU follow-up clinic, directed by Dr. Bree Andrews, has robust data for 131 extremely low birth weight infants born between 2008-2014. Electronic health records were searched for clinician notes on receipt and extent of EI services. Full addresses were used to approximate family income using 2010 census data. Risk of neuro-developmental impairment was assessed using medical staff members' longitudinal intuitions on the extent of neurological impairment for each patient.

RESULTS: Controlling for race, gender, and predicted neuro-developmental impairment, for every \$10,000 increase in income, the odds of receiving access to full EI services are increased by 24% ($p = 0.026$). Male children were 62.8% less likely than female children to receive access to full EI services. Predicted neuro-developmental impairment had no significant effect on access to full EI services.

DISCUSSION: Infants from low-income families who are at high risk for developmental delays face barriers in EI access that reach beyond need alone.

IMPLICATION: This analysis calls for physicians, policymakers, and families to work together to identify mechanisms for low-income families to access the highest quality of care and supports for their babies. This needs to start while the critically ill child is in the hospital as well as attending to the needs of children who are most impoverished, sickest, and male.

BARRIERS TO BLOOD LEAD SCREENING PRACTICES AMONG HEALTHCARE PROVIDERS

Dr. Jenny Ross, student; Dr. Nicholas Newman, mentor
University of Cincinnati School of Medicine, Department of Environmental Health

This study examines the screening practices of pediatric blood lead levels in clinics and identifies the reasons why blood lead level screening is or is not being accurately implemented in healthcare practices identified as high-risk zip codes throughout Cincinnati.

GOALS:

- (1) To determine health care providers' knowledge of current lead level screening recommendations, as well as to raise awareness of these current recommendations.
- (2) To identify the specific factors that are contributing to low screening rates of blood lead levels in our community and to identify the community health care providers that have the most influence on these screenings.

BACKGROUND: Elevated blood lead levels in children can result in decreased IQ, behavioral problems, academic failure, and increased risk for incarceration. In the past 4 years, in Cincinnati, lead poisoning has disproportionately affected children of low income and low education families. These health disparities cause a preventable increased risk for lead toxicity in these children of low socioeconomic status. In the neighborhoods of Cincinnati making up Lower and East Price Hill, 66% of housing units were built before 1950; 77% children less than 60 months of age are living below the federal poverty level, and only 37.5% of children were tested for lead in 2012.

METHODOLOGY: Participants for this study will be eligible if they work full-time at a primary care pediatric or family medicine facility in a high-risk urban center where there is an increased risk of lead toxicity. Interviews will be qualitative and semi-structured to collect data on the participants' opinions and knowledge of blood lead level screening, as well as their opinions on the interventions in place to prevent lead toxicity.

RESULTS: Participants reported numerous differences in lead screening practices, varying from one test at one year to four tests before the age of five years. No practice reported practicing or being aware of the Cincinnati Health Department's current recommendations. The most common reported barriers to successful lead screenings included appointment attendance, parent willingness, and ability to successfully draw blood on the first attempt. There were significant knowledge differences in lead poisoning among healthcare positions, although all were identified as having influence on effective lead prevention approaches. The interviews themselves helped to raise awareness of the importance of pediatric lead level screening and the current screening recommendations.

DISCUSSION: The low level of lead testing is due to a combination of environmental health disparities and educational barriers. By identifying the specific barriers that are leading to low screening rates, we will be able to begin to break the cycle of lead level toxicity caused by environmental health disparities in Price Hill, Cincinnati.

AN ECOLOGICAL MODEL OF HEALTH CARE ACCESS DISPARITIES FOR POOR CHILDREN IN THE SOUTH

Kammy Kuang, student; Dr. David Wood, mentor; Dr. Kiana Johnson, mentor
East Tennessee State University Quillen College of Medicine, Department of Pediatrics

Using an ecological framework, this study examines the role of poverty and southern residence as predictors of pediatric healthcare access disparities while taking into account of the influences of social cohesion and community characteristics.

HYPOTHESIS:

1. Compared to other U.S. children, poor children in the south have worse health care access on average across a variety of measures.
2. Social cohesion and community characteristics can contribute to health care disparities for poor children in the south.

BACKGROUND: The southern region of United States is home to approximately 20% of the U.S.'s total pediatric population. Previous research have shown that, compared to those in other regions, children in the south experience higher poverty rate and poorer health outcomes, including higher rates of infant mortality, asthma, and obesity. Meanwhile, neighborhood environment is also associated with child health problems and quality of health care. Poverty, living in the southern region, as well as adverse community characteristics may serve as compounding risk factors for children's access to care.

METHODOLOGY: This study used data from the 2011-12 National Survey for Child Health. Descriptive, bivariate analysis, and multivariate logistic regression analysis were conducted to measure health care access disparities between poor children in the south and all other U.S. children. Our primary outcomes are access to a medical home, having a preventive medical care visit within the past year, and having a preventive dental visit within the past year. Our logistic regression models included covariates of individual demographics (race/ethnicity, age, family structure, language, parental education, insurance status/type, child physical health, and presence of special health care needs) as well as ecological factors (measures of social cohesion and community characteristics).

RESULTS: Compared to all other children in the U.S, poor children in the south were significantly ($p < 0.001$) less likely to have a medical home (37.7% vs 55.4%), have a preventive dental care visit (65.9% vs 77.8%) and have a preventive medical care visit (77.4% vs 84.8%) within the past year. In multivariate logistic regression, the combination of poverty and southern residence remained significant for all three access outcomes. Other predictors for worse access include minority status, single family structure, uninsured, low parental education, and poor child health status. Importantly, social cohesion and community characteristics were significant ecological predictors of all three measures of health care access.

DISCUSSION/CONCLUSION: The study indicates that poor children in the south are associated with lower odds of having access to adequate health care compared to other U.S. children, even after adjusting for multiple demographic and child health characteristics. In addition, parental ratings of lower social cohesion and negative community characteristics were also associated with lower access to a medical home, medical care visit and dental visit within the past year. Poor children in the south who live in unsupportive and disadvantaged community may experience additional risks due to lack of access. In order to help Break the Cycle of Disadvantage, an ecological model should be used to guide future interventions for improving access to comprehensive health care services for all children.

HEALTH VULNERABILITIES OF UTAH'S IMMIGRANT CHILDREN

Grant Holyoak & Morgann Holyoak, students; Dr. Courtney Flint, mentor
Utah State University, Department of Sociology, Social Work, & Anthropology; School of Teacher Education and Leadership

The project is designed to identify the medical vulnerabilities faced by Utah's immigrant children and the availability of services meant to address those vulnerabilities. It is also designed to identify strategies that can be employed to break the cycle of vulnerability among immigrant children.

HYPOTHESIS:

- (1) There is a greater availability of medical services, and thus better opportunities to break the cycle, for immigrant girls than boys.
- (2) The health vulnerabilities experienced by the children of refugee families are less extreme than those experienced by the children of undocumented immigrant families.

BACKGROUND: Utah, as a new destination state for immigrants, is historically unaccustomed to providing healthcare for a heterogeneous population. State policy regarding reception of immigrants vacillates between acceptance and condemnation. This turbulent political and social atmosphere places unique pressures on the social and medical services that work with immigrant populations and, of course, on the immigrants themselves.

Methodology: The study employed sixteen total semi-structured telephone interviews. Respondents were identified via criterion sampling (using publically-available information on Utah social services) and snowball sampling. Participants in the study were health care-related social service providers in the state of Utah, along with others that these respondents identified as key informants. The sample included providers of all kinds, and interviews were discontinued when responses highlighted existing themes and when the majority of referrals directed the team to respondents with whom they had already spoken.

RESULTS: Neither of the hypotheses were supported by the information provided in the interviews. Rather, we found that medical services were equally available (and equally unavailable) for immigrant boys and girls. We also found that refugee children are subjected to a series of vulnerabilities that are not commonly experienced by the children of undocumented immigrants. Indeed, the vulnerabilities faced by each of these child populations require different solutions in order to be resolved.

DISCUSSION: While barriers to health are experienced by both immigrant families and the agencies that seek to serve them, social service providers have adopted creative strategies to overcome these barriers and lay the foundation for a healthcare system that is more open to the needs of immigrant children of all backgrounds.

ADDRESSING SOCIAL DETERMINANTS OF HEALTH AT A FEDERALLY QUALIFIED HEALTH CENTER

Caroline Hensley, student; Dr. Kelley Carameli and Dr. Christy O'Dea, mentors
University of Cincinnati College of Medicine, Department of Environmental Health

This study examines the establishment of a procedure for addressing social determinants of health at a Federally Qualified Health Center.

HYPOTHESIS: The establishment of a procedure for addressing social determinants of health (SDH) as a part of every Well-child visit at a Federally Qualified Health Center (FQHC) in Southwest Ohio will increase the number of children connected to community resources and providers' confidence in ability to address SDH.

BACKGROUND: The conditions in which a child and his or her family live, work, learn, and play largely impact the child's health. This impact is often negative when a child is living in poverty.

METHODOLOGY: Volunteer interns managed the screening of all pediatric patients and families at the FQHC for Well-Child visits. The screening utilized HealthBegins' Upstream Risk Screening Tool. Based on results of the screening, volunteer interns will connect pediatric patients' and families to community resources that addressed the areas of highest need for the patient and family. The project was evaluated for success according to the following metrics 1) percent of patients with unmet non-clinical needs 2) providers' confidence in ability to address SDH 3) volunteer intern productivity. Quality metrics were collected and evaluated at start and throughout project.

RESULTS: Establishment of a procedure for addressing social determinants of health at a Federally Qualified Health Center was useful in identifying and addressing social determinants of health. Population data of pediatric patients and their families better informed need for social services. Volunteer interns were effective in connecting patients to community resources. Restriction of the screening to only Well-child visits limited opportunity for volunteer intern productivity.

DISCUSSION: Continued support for social needs programs in primary care settings is needed to sustainably decrease percent of patients with unmet non-clinical needs and increase provider confidence in ability to address SDH. Further studies regarding the impact of participation in the screening and referral process on volunteer interns will be beneficial.

MOMMY: A SURVEILLANCE SYSTEM FOR PREGNANT WOMEN

Júlia Carmona Almeida Chaves, student;
Dr. Enrique Cifuentes and Dr. Alessandra Macedo, mentors
University of Sao Paulo, Department of Computer Science and Mathematics

INTRODUCTION: Maternal mortality is a major public health problem in the world, and this problem is even more severe in developing countries, which account for 99% of cases of maternal deaths. Despite the Maternal Mortality Ratio in Brazil have reduced in the last 18 years (120 per 100,000 live births in 1990, 64 / 100,000 live births in 2005 and 58 / 100,000 live births in 2008), the rate of reduction, in September of 2010, had not yet reached the value stipulated in the "Millennium Development Goals" by WHO, UNICEF, UNFPA and the World Bank.

BACKGROUND: In pregnancy, both mother and fetus are extremely vulnerable to factors such as the pregnant woman's lifestyle, which can bring risks in pregnancy. However, these factors do not present a major risk to maternal and fetus health when appropriate preventive measures are taken.

METHODOLOGY: This project proposes the creation of a computer system that will be designed to assist and monitor the pregnant woman minimizing their exposure to risk factors, which can be detrimental to the mother and fetus health. Smartphones will be used to capture the environment data of the pregnant woman and to send her alerts and tips about her daily life, helping her to recognize signs of danger and encouraging her to seek help.

EXPECTED RESULTS: It is expected that this project will contribute to a healthier pregnancy, which in turn will reduce the number of maternal and neonatal deaths. Therefore, Mommy would contribute directly to the achievement of the target set by the "Millennium Development Goals" related to maternal mortality.

SCHOOL READINESS IN YOUNG CHILDREN

Ellen Litkowski, student; Dr. Ann Kruger, mentor

Georgia State University College of Education and Human Development

Department of Educational Psychology, Special Education and Communication Disorders

This study aimed to understand how teachers and parents of preschool and pre-K students, specifically those growing up in low-income households, conceptualize “school readiness”, how they subsequently help their children prepare for success in school, as well as what types of oral language practices are occurring in the home and classroom.

HYPOTHESIS: Parents and teachers might place greater emphasis on formal literacy practices, such as letter and number writing, rather than on informal activities such as conversation and reminiscing. Parents and teachers might also have different conceptualizations of school readiness.

BACKGROUND: The way conversation is privileged and conducted varies depending on individuals’ culture and socio-economic status. Many prior interventions designed to promote children’s linguistic and cognitive development are grounded in middle class and Caucasian patterns, despite the differing values and practices of the community. To more effectively support language outcomes of children growing up in poverty, we need to ground our interventions in the cultural values of the community, and better understand how parents and teachers are preparing their children for their early academic careers – especially in regards to language outcomes.

METHODOLOGY: Three focus groups were led – one for teachers of preschool and Pre-K students, one for parents of preschoolers, and one for parents of Pre-K students. These focus groups were directed primarily around two questions (1) how do you conceptualize school readiness for your children and (2) what are the current oral language practices in the home and classroom? Focus groups were transcribed and the conversations coded following a thematic analysis framework.

RESULTS: Differences in school readiness beliefs and practices were present across all three groups, particularly between Pre-K parents and teachers. While parents of Pre-K students emphasized the importance of appropriate behavior, structure, and formal learning activities, teachers believed that parents had a misguided view of when learning takes place – and emphasized the value of conversations and play. Preschool parents did not discuss academic skills – but rather focused on the importance of abstract qualities for their children’s success, such as independence and creativity.

DISCUSSION: Differences in beliefs of parents and teachers are of particular interest. Interventions that focus solely on language outcomes may be neglecting what areas parents feel are most important for their children’s success. Additionally, mismatch between parents’ and teachers’ beliefs about when students’ learning takes place may result in tension between the home and classroom environments. Future interventions might promote stronger communication between these two groups – allowing for a shift in perspective about the value of learning through play.

LEARN, EAT, GROW: HEALTHY LIVING INITIATIVE

Maya Bornstein, student; Dr. Melissa Pirkey, mentor
Emory University School of Arts and Sciences

This study examines the impact of urban gardening on the health habits of metro-Atlanta public school children.

HYPOTHESIS: My hypothesis is that if children learn to appreciate their own homegrown food, it will inspire them and their families to garden and to prepare healthier, more affordable meals.

BACKGROUND: A significant health issue in lower income neighborhoods in Atlanta is poor nutrition and obesity. Often this issue is made worse by the lack of affordable healthy foods, and the fact that Atlanta is known to be a food desert. My project is to promote healthier eating by teaching students in an Atlanta school about making healthy food choices and gardening in order to address this health issue.

METHODOLOGY: The children were initially surveyed regarding their baseline eating habits and knowledge about nutritious eating. Then, during the subsequent six weeks, I met weekly with the students. Activities included, planting and growing seeds, educating about maintaining healthy lifestyles, cooking healthy meals, and compiling healthy recipes. At the end of the project students will be surveyed again to see if there is any change in their eating habits.

RESULTS: The results of the initial survey indicated 56% of students reported that they had never previously had a gardening experience, the average number of fruit and vegetables eaten by the students each day was 2.7 ranging from none to 7. Few participants knew the correct recommended number of daily servings of fruit and vegetables. After the 6 educational sessions all but 2 students knew the correct serving of fruit and vegetables per day. The average reported intake of fruits and vegetables eaten 24 hours prior to the survey rose from 2.74 to 3.15 servings. Every student knew 3 healthy snacks, and at least 2 benefits to gardening. 41% of students wrote that they definitely want to start a garden in the future, where before the study around half of the students were not at all familiar with home-grown food. Overall, healthy food intake increases and so did amount of knowledge about gardening.

ASSESSING THE HEALTH OF GRANDPARENTS WHO RAISE GRANDCHILDREN WITH DISABILITIES

Kelly Brown, B.S.

Mentor: Lilly Immergluck, M.S., M.D., FAAP

Co-Mentor: Elham Laghaie, M.S.

Morehouse School of Medicine

Clinical Research Center

BACKGROUND: Grandparents looking after their grandchildren are increasing in the US. This issue affects mainly low-income families and African-American families. Aging grandparents, already deteriorating in health, are compounded with more stress when caring for a disabled grandchild. There are many locally run programs that offer resources and assist with the care of seniors and those with a disability, but few programs provide intergenerational care for both grandparents and grandchildren.

HYPOTHESIS : Access to case management supports grandparents' perceptions of improved health and a safer home environment for themselves and their grandchildren with disabilities.

METHODS: In our study, grandparents were surveyed who enrolled in a program which offers these unique care givers case management, referrals, and group support therapy at regular intervals. We surveyed these grandparents on their own physical and mental health status and also, on the health and well-being of their grandchildren who live with them. We also assessed the ecological environment as it relates to access to housing, food security, and safety.

RESULTS: 38% (46) of the eligible population (120) was enrolled into the study. On average the grandparents were in the program for at least 4 years. Among the grandparents enrolled, 45% reported health improvement and 39% reported an environmental improvement from being in the program. The average amount of resources each grandparent received while in the program was 8. The health improvement [Odds Ratio (OR): 0.963; 95% Confidence Interval (CI): 0.86 – 1.09], environmental improvement [OR: 1.051; 95% CI: 0.927 – 1.191], and environmental composite score [OR: 1.051; 95% CI: 0.927 – 1.191] showed no significant association to the total number of resources received in the program. However, the environmental improvement score [OR: 1.37; 95% CI: 1.05 – 1.78] showed a positive association to the length of time in the program.

DISCUSSION: There was no perceived improvement by participants in overall health or environment, that was statistically significant based on the total resources. Though there is no impact, there is still a need for case support management and safer living standards among this particular population of grandparents. For the future, the data from this project can provide more insight as to how to develop programs that better serve these medically and financially underserved families. In order to improve their quality of life, primary care and preventive measures must be further examined for grandparents and the grandchildren under their care.

“I WAS SCARED OVER THERE” – FAMILY WELL-BEING AFTER RELOCATION FROM A DISTRESSED PUBLIC HOUSING DEVELOPMENT

Kirstin Frescoln, student; Dr. Mai Nguyen, mentor
University of North Carolina at Chapel Hill
Department of City and Regional Planning

This study examines the changes in well-being in families after relocation from a distressed public housing development.

HYPOTHESES:

- (1) Parents who report greater safety and neighborhood satisfaction post-relocation will report greater health and mental wellbeing.
- (2) Children who move to better neighborhoods – measured by parental reports of greater safety and neighborhood satisfaction – will have better health and educational outcomes due to improved caretaker mental health and wellbeing.

BACKGROUND: The US Housing and Urban Development’s HOPE VI program provided funding to local housing authorities to redevelop highly-distressed public housing developments. Affected households were relocated to either another public housing development or private housing and provided case management services for up to five years. This project examines post-relocation health and wellbeing outcomes associated with moving families from the Charlotte Housing Authority’s Boulevard Homes development, where violence, drug use, school dropout, and teen pregnancy were common.

METHODOLOGY: This mixed methods study uses a socioecological framework of wellbeing to examine within group differences. It draws on survey data collected in 2010 (pre-relocation) and in 2015 (five years post-relocation). It also utilizes semi-structured interviews, conducted in 2015, with a random sample of former residents to better understand their perceptions of the benefits and costs associated with the move.

RESULTS: Paired t-tests found that respondents experienced significant ($p > .0001$) post-relocation improvements in perceptions of violent crime and personal safety. However, these are the only variables within the framework to achieve significance. Interview data confirmed that residents were afraid of violence and crime commonly experienced at Boulevard Homes and that all residents felt safer after relocation to public housing or private-market units. Parents often cited safety and wellbeing concerns for their children when discussing the positive outcomes associated with the move.

DISCUSSION: Public housing serves as a refuge for some of our nation’s most vulnerable families. As such, housing authorities must provide safe and healthy living conditions within their developments. When redevelopment and relocation are necessary, high-quality services that address relocatees’ health and wellbeing can help break the cycle associated with childhood poverty.

SELF-EMPOWERING LGBT YOUTH EXPERIENCING HOMELESSNESS THROUGH COLLABORATIVE ART

Paul Nguyen, student; Marc Cordon; Caleb Peng, mentor
Emory University College of Arts and Sciences
Office of Health Promotion; Rollins School of Public Health

Art Works is a youth-led program which seeks to address identities, social inequalities, and mental wellbeing through artistic collaboration between Emory University and a local LGBTQ youth center.

HYPOTHESIS:

- (1) Art Work's use of recreation is an effective way to engage and empower youth experiencing homelessness.
- (2) Art Work's programmatic focus on sharing personal experiences and exploring identities targets individuals identifying as LGBTQ.

BACKGROUND: Homelessness affects more than 550,000 people on any given night, but a disproportional amount of this population identify as LGBTQ (Lesbian, Gay, Bisexual, Transgender, Questioning). LGBTQ youth experiencing homelessness are reported to experience more mental and physical health disparities and remain homeless for longer periods of time when compared to non-LGBTQ homeless youth. Many shelters do not adequately address the specific needs of this population both as youth experiencing homelessness and as individuals identifying as LGBTQ.

METHODOLOGY: Art Works is a flexible, approximately 7-week cycle which runs for two hours each weekend. Clients are recruited from a local LGBT youth homeless shelter, where Art Works is first introduced and clients can voluntarily participate. Samples of previous work or works-in-progress are shared by both Art Works and clients in a large group discussion. The medium through which the piece will be presented is chosen based upon availability of artists. The piece selected for this cycle is collaboratively workshopped until polished (approx. 2 sessions). The piece is practiced and converted to the respective medium (approx. 3 sessions). The last day is a reflection/ feedback on the process and a presentation of the work, which serves as the sample for the next cycle of Art Works.

RESULTS: Of the eight clients introduced to Art Works, five returned to continue the project for two or more sessions. Two clients consistently returned for 6 sessions to workshop and rehearse, with two more clients joining in the second half of this cycle. Three clients shared their artwork, with one piece (poem) addressing gender identity and the other two pieces (poem and rap music) self-described as messages of "strength".

DISCUSSION: The majority of this cycle was setting up the groundwork for the project, including building trusting relationships between Art Works and the shelters' clients and staff. The stories shared were prompted Quantitative measurements are still needed.

STUDENT COMMENTS ON THE BREAK THE CYCLE EXPERIENCE

This has been a wonderful experience for us since we have had the opportunity to work side by side with outstanding professionals at Emory University. We have already learned so much from our last years' experience with BTC, such as the holistic approach you have in your practice when assessing children. During this new project we have learned even more from receiving enlightening opinions of the different participants of BTC to improve our research. We will also have been able to extract great ideas to incorporate in our work in Chile. We know for sure that we will be helping to Break The Cycle in our community. Keeping this in mind it is important, since the final aim of all the work we do goes in favor of helping our patients, specially the underprivileged children and their families.

Dra. M. Ignacia Eugenin

Residente Pediatría Universidad Católica de Chile

BTC allowed me to dig deeper into a topic I'd been working on – and what I found was really quite interesting! My original hypothesis turned out to be incorrect and thinking about the possible reasons for that – as well as the implications of those underlying reasons – has been both challenging and worthwhile. I've also really enjoyed listening to the other projects. The differences between the projects have made clear how far-reaching environmental health disparities can be and the kind of impacts they can have on the population. I'm really looking forward to meeting everyone in person and hearing the presentations.

Amanda Bzozowski

Emory University Rollins School of Public Health

I feel honored to have our project received so enthusiastically and am very excited to share my passion and work with an international group. Our pilot study will provide a model for a physical activity intervention for overweight/obese urban minority youth that can be replicated at schools and facilities across the country. Incorporating key components of safe exercise prescriptions for obese adolescents from physical therapy into a triathlon program provides a novel and safe medium that allows for individual and team training and goal setting while it redefines success, not as winning with points, but as advancing towards one's full potential to successfully compete and enjoys physical activity events.

Jeff Condit, CSCS

Marquette University: Exercise Physiology '13

BTC fellowship was crucial in allowing me to have the support to explore research topic that excited me most, which turned the luxury of intellectual freedom to a reality of daily life.

Shanna Gairy-Miller

Fort Valley State University

Participating in Break the Cycle has provided me the opportunity to explore real solutions to improving environmental conditions in my community. For years, I have heard people complain about problems with Tuskegee's educational system, but with no solution. By participating in BTC I have been able to take a deeper look at the characteristics that perpetuate the cycle in Tuskegee. I have also been able to examine how the mentoring/tutoring program that I started years ago, Next Step Up, has worked towards breaking the cycle to make a substantial positive impact in my hometown. This has been an incredible experience, and with this foundation I hope to continue working towards improving the educational and community environment in Tuskegee.

Elise Tolbert

University of Michigan

Participating in this program has allowed me to explore an area that I have always had great interest in but had not done academic research in. I have been able to better understand the influences that impact African American girls and how it relates to larger disparities in areas such as mental health and physical wellbeing. Furthermore, the collective nature of the PRAM has illustrated how interconnected many of our interests are and the importance of finding valuable and feasible solutions. Overall, I am so happy have to have participated in the program.

Johari Harris

Georgia State University

SUMMARY OF ACADEMIC PARTNERSHIPS (2005 - 2016)

University Partners and the Departments:

- *Columbia University, Mailman School of Public Health*
- *Clark Atlanta University, School of Social Work*
- *Duke University – Children’s Environmental Health Initiative*
- *Duke University – Trinity College*
- *East Tennessee State University, Quillen College of Medicine, Department of Pediatrics*
- *Emory University Barton Law Center*
- *Emory University College of Arts and Sciences*
- *Emory University Nell Hodgson Woodruff School of Nursing*
- *Emory University Rollins School of Public Health*
- *Fort Valley State University, Department of Graduate Studies*
- *Fort Valley State University, Department of Veterinary Science & 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, Department of Public Health, Healthcare Management and Policy*
- *Georgia State University School of Law*
- *Georgia State University, J. Mack Robinson College of Business*
- *Harvard School of Public Health*
- *Hofstra University, Department of Health Professions*
- *Marquette University, Department of Physical Therapy*
- *Mercer University School of Medicine, Department of Community Medicine*
- *Morehouse School of Medicine, Department of Clinical Research*
- *Morehouse School of Medicine, Department of Community Health and Preventive Medicine*
- *Morehouse School of Medicine, Masters in Public Health*
- *Mt. Sinai School of Medicine, Preventive Medicine*
- *Pontificia Universidad Católica de Chile, Department of Pediatrics*
- *Spelman College, Department of Biology*
- *Tulane University Law School*
- *Tulane University, School of Public Health and Tropical Medicine*
- *University of Cincinnati, College of Medicine, Department of Environmental Health*
- *University of Cincinnati, Public Health Sciences Department of Environmental Health*
- *University of Chicago, Pritzker School of Medicine, Department of Pediatrics*
- *University of Florida in Jacksonville, College of Medicine and College of Public Health*
- *University of Kentucky, Department of Pediatrics*
- *University of Michigan – Ann Arbor, School of Natural Resources and Environment*
- *University of Munich*
- *University of North Carolina-Chapel Hill, Gillings School of Global Public Health*
- *University of North Carolina-Chapel Hill, Department of City and Regional Planning*
- *University of Sao Paulo, Department of Computer Science and Mathematics*
- *University of Zambia, Department of Public Health*
- *Utah State University, Department of Sociology, Social Work and Anthropology*
- *Utah State University, School of Teacher Education and Leadership*
- *Wayne State University, School of Medicine*

Totals to Date: University Departments: 43 Students Mentored: 108

SUMMARY

We have developed an approach to Break the Cycle that is modest, manageable, incremental and achievable. We focus on university students who are in a learning phase and are excited about making a difference in the world. We realize that we, in our generation, may not be able to achieve our ultimate goal but, if we can establish the system and set the process in motion, our goals will be achievable in the future. In other words, we are cultivating our future leaders to improve the lives and the potential of our most vulnerable children and, in so doing, change the world for the better.

The model is simple; we invite students from a variety of different disciplines in universities around the country and the world to develop projects to Break the Cycle that they can achieve in one semester. They are required to have a mentor from their academic discipline who will coach them and guide them through the research process. Some projects are descriptive and some interventional, but all of them contribute significantly to our knowledge of what the challenges are and how we may act to make a positive difference.

The Break the Cycle Program thus is a collaborative, interdisciplinary set of creative projects developed by university students from different schools in different states that specifically address the challenge to Break the Cycle of Environmental Health Disparities. Each year, students from a variety of universities and academic disciplines are invited to submit proposals that will Break the Cycle. The application process with selection criteria judging the likelihood that the students selected will ultimately complete a project that conceptually will break the cycle in a meaningful way. This competitive process enables the selection of those projects with the most promise to become the cadre of students for that particular year. The students will then work collaborative and collectively with their academic mentors and Break the Cycle faculty, towards completion of the projects.

The process is time-limited and time sensitive. From the moment that the students have been selected, we hold conference calls with all students and mentors to have each describe the projects, the research methodology, and describe how their projects will contribute to break the cycle. These conference calls occur monthly in order to keep track of the students and keep them on track. The students and their mentors also have the opportunity during these conference calls to become familiar with the work of the other students from the other universities and disciplines and expand their understanding and appreciation for the complexity of the challenges and solutions. Completion of the project coincides with a conference in which the students are required to present their work to their Break the Cycle peers and to a broader academic and community audience. For many students, this may be their first formal public presentation. Once the project and presentation are completed, they are required to write up their work, which then is published collectively for a supplement in an international journal. Thus, the project, the presentation, and the paper become valuable experiences and achievements for the students that will guide, shape, and support their future success.

Since its inception in 2004-2005, we have had over 108 students from 43 different departments of 30 different universities from twelve states in the continental USA as well as students from Latin America, Europe and Africa. This year, we continue our work with a student from the University of Sao Paulo in Brazil. In 2012, we conducted a survey of all the students who had been part of the program from 2004-2011 and learned that an overwhelming number –indeed, almost all – felt the project was worthwhile. Most reported that it increased their knowledge and understanding of children's environmental health disparities and that they valued the exercise and the outcomes of their involvement in the program. Many graduates reported that they are currently involved in a similar field of practice in academic settings, in the community or in the private sector. The report has been published in our most recent book: *Environmental Health Disparities: Costs and Benefits of Breaking the Cycle*. Nova New York 2015.

The important message is that the Break the Cycle Program can make a difference in generating projects that raise awareness of children's environmental health disparities. It inspires and cultivates a group of students for whom this program is a step towards a career and towards leadership in reducing health disparities and promoting health equity for all children, regardless of their social and economic circumstances.

This year, we have another set of stimulating projects from 10 university departments, from 9 universities in 6 states and one international university.

On Day 2 of our conference we will deal more in depth with the issue of the concept and practice of Community Engagement in breaking the cycle of health disparities. This session will have a workshop format where participants will have the opportunity to examine possible solutions and their cost benefit through work groups.

CONCLUSION

Children living in circumstances of social and economic disadvantage are at higher risk for experiencing health problems caused or exacerbated by environmental factors. They are more likely to be trapped in the cycle of environmental health disparities as a result of family stress, limited quality education, limited social capital, and lack of access to comprehensive healthcare and appropriate educational services. Furthermore, the homes and neighborhoods in which they live learn and play are inadequate at best, and may even result in a serious impact on the child's health, growth and development.

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 health, education and the environment a priority.

The Break the Cycle project is a replicable means by which to promote student interest in addressing issues related to environmental health disparities. It serves as a catalyst through which academic mentors committed to issues of children's health and 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 children's environmental health and children's environmental health disparities into college curricula is likely to play an important role in shaping future leaders who will be invested in breaking the cycle of environmental health disparities.

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BTC III

Rubin IL, Geller RJ, Nodvin J, Ace K, Merrick J. Break the cycle of adverse health and developmental disparities for children. *International Journal of Child and Adolescent Health* 2009; 2(3):265-421.

BTC IV

Rubin IL, Ace K, Nodvin J, Geller RJ, Marcus M, Merrick J. Vulnerable children: Break the cycle of environmental health disparities. *International Journal of Child Health and Human Development* 2010;3(4):357-453.

BTC V

Rubin IL, Nodvin J, Geller RJ, Marcus M, Merrick J. Vulnerable children: Break the cycle of environmental health disparities. *Reviews in Environmental Health* 2011;26(3):135-229.

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BTC VIII

Rubin IL, Geller RJ, Nodvin J, Howett M, Gitterman BA, Merrick J, eds. Break the cycle of disadvantage and disability: Environmental factors, education, AIDS and food insecurity. *International Journal of Child Health and Human Development* 2014;7(3):207-335.

BTC IX

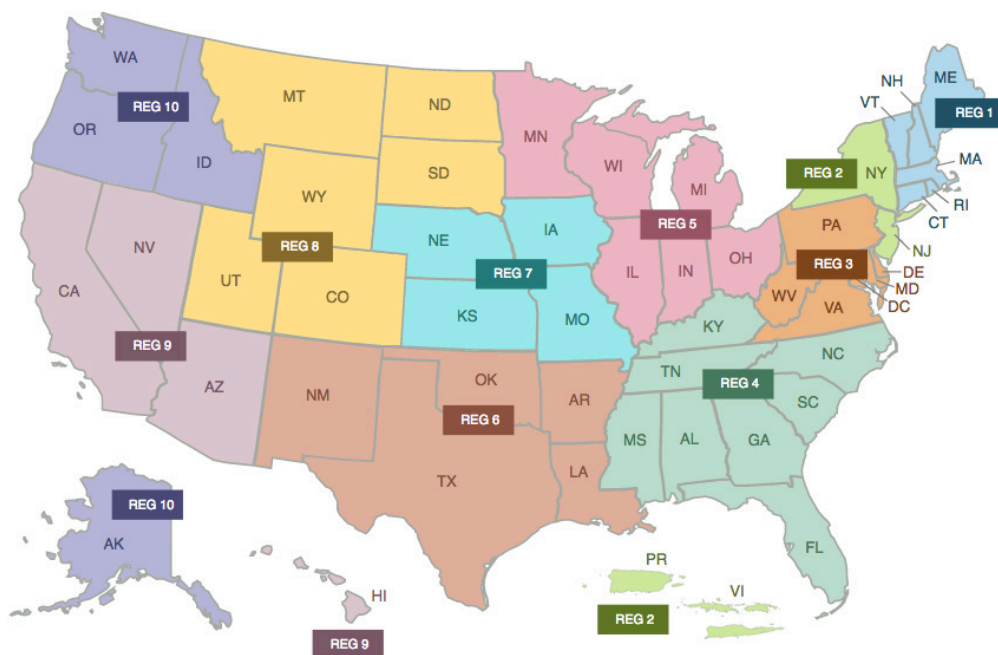
Rubin IL, Geller RJ, Nodvin J, Howett M, Gitterman BA, Merrick J, eds. Break the cycle of disadvantage and disability: The law, health, the environment and international perspectives. *International Journal of Child and Adolescent Health* 2015; 8(4):367-517



PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNITS

www.pehsu.net

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, usually at no cost, special medical knowledge and resources for children faced with a health risk due to a natural or human-made environmental hazard. 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.

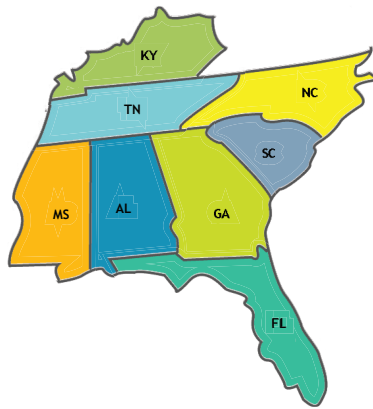




**THE SOUTHEAST
PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNIT**
.....
AT EMORY UNIVERSITY

<http://www.pediatrics.emory.edu/centers/pehsu/>

The Southeast PEHSU services the following states as seen on the map:



Our core experts include specialists in developmental pediatrics, medical toxicology, and environmental epidemiology. Our administrator is skilled and experienced in pediatric referrals, especially when children have complex problems that need multidisciplinary evaluation and care.

Our partners include:

- Emory University, School of Medicine, Department of Pediatrics
- Emory University, School of Medicine, Department of Psychiatry and Behavioral Sciences
- Emory University, Rollins School of Public Health
- Emory University Nell Hodgson Woodruff School of Nursing
- Emory Healthcare, Department of Obstetrics and Gynecology
- Morehouse School of Medicine, Department of Pediatrics
- Innovative Solutions for Disadvantage & Disability (ISDD)
- Georgia Poison Center



About the Innovative Solutions for Disadvantage and Disability
www.isdd-home.org

Innovative Solutions for Disadvantage and Disability (ISDD) is a private not-for-profit 501c3 organization with the mission to promote health equity among children living in social and economic disadvantage with or at risk for disability. ISDD accomplishes its mission through three core programs:

BREAK THE CYCLE

This program is at the heart of ISDD in that it offers a broad look at the relationship between social or economic disadvantage and child health and development. ISDD works in partnership with the Southeast Pediatric Environmental Health Specialty Unit at Emory University (PEHSU). Break the cycle is a multidisciplinary academic program that focuses on cultivating future leaders in the fields of medicine, nursing, public health, law, social work, education and other related disciplines.

HEALTHCARE WITHOUT WALLS

Healthcare Without Walls is a comprehensive community-based, medical home model which addresses 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, and Emory University School of Public Health to provide a medical home for the children and health literacy training for their mothers. This program has since been expanded to serve children of homeless veterans. The programs are funded by HRSA.

PROJECT GRANDD

Project GRANDD is a community-based support program for grandparents who are raising their grandchildren with disabilities, chronic illness, and behavior or learning difficulties. Project GRANDD provides group educational meetings, monthly support groups, material aid, home visits and individual case management. To date over 100 grandparents with over 200 grandchildren between them are served by Project GRANDD. This model can be applied to many populations around the world, where grandparents have the responsibility of raising their grandchildren – especially in areas where HIV and violent strife have decimated the adult population of parents.

ISDD was the recipient of the 2013 Martin Luther King Jr Award from Emory University Goizueta School of Business and the Rollins School of Public Health.