A Common Childhood Playtime Behavior Linked to Serious Health Risks in Bangladesh

Student Scholarships and Awards

Faculty Honors

Kruse Alumni Award
Mary Cogswell, RN, DrPH ’92

Student Profile
Emily Hurley, MPH ’12
PhD candidate

Multidisciplinary research site founded in Bangladesh
A common childhood playtime behavior linked to serious health risks in Bangladesh

Asst. Professor Christine Marie George from the Department's Program in Global Disease Epidemiology and Control (GDEC) recently led the first prospective cohort study to investigate whether geophagy (consumption of soil) could be linked to reduced gut function and stunting in children.

Dr. George worked in collaboration with faculty from Hopkins and the Department's longstanding partner, International Center for Diarrheal Disease Research, Bangladesh (icddr,b) to develop and conduct this cohort study based in Mirzapur, Bangladesh. Dr. ASG Faruque was the icddr,b principal investigator and Lauren Oldja, MSPH '13, Health Systems, was the field-based research coordinator. "Lauren was an amazing coordinator. Her organization and drive made the study run seamlessly," says Dr. George. "I was very lucky to have her as part of our team."

The project was also a learning experience for Ms. Oldja who was able to gain valuable field experience working with local partners. "The icddr,b research assistants and field attendants brought invaluable local experience, " says Ms. Oldja. "Dr. Faruque's team was dedicated and conducted the direct household observations very effectively."

An unobserved pathway

Most studies in this area focus on the fecal-oral pathways of enteric infections described in the "F Diagram" (flu, kids, fingers, fields, flies, food). However there has been a growing body of evidence suggesting that geophagy is an overlooked pathway that could contribute substantially to stunting and environmental enteropathy (impaired gut function) in children. For over a decade, Professor Jean Humphrey from the Department's Program in Human Nutrition and her team based in Zimbabwe have been building evidence that poor sanitary conditions contribute to stunting and anemia in children. As part of the Sanitation, Hygiene, Infant Nutrition Efficacy Project (SHINE) their team conducted one of the first formative studies to observe how often children ingest soil and animal feces."

Finding a link

Building on SHINE’s findings, the study team set out to investigate the association between geophagy, stunting, and gut function. With funding Dr. George received from the Sherrilyn and Ken Fisher Center for Environmental Infectious Diseases, the team observed over 200 children while they played outdoors—amounting to over 1,000 hours of child outdoor playtime. The team also collected reports of geophagy from caregivers and took soil samples from where children played to test for E. coli.

Measuring environmental enteropathy

The study employed the environmental enteropathy disease activity score to measure overall gut function health. The score is a composite of several fecal markers of gut function. Children with higher scores have been shown to have significantly impaired growth. Assistant Professor Margaret Kosek led the development
New evidence for building better interventions

Nearly a third of children were observed putting dirt in their mouths while they played. Not only did these children have significantly higher environmental enteropathy disease activity scores, they were twice as likely to be stunted compared to the other children in the study. In addition, nearly all soil samples had detectable E. coli and 14% had pathogenic E. coli, one of the most common enteric pathogens found in children under five years of age globally. These findings taken together demonstrate how geophagy puts children at risk for environmental enteropathy and can lead to stunting. Dr. George believes these results can help advance our understanding of risk factors for environmental enteropathy and stunting that could in turn lead to more effective interventions for susceptible pediatric populations.

Two articles based on this prospective cohort study are currently in press, and a third is under review:

**Geophone is Associated with Environmental Enteropathy and Stunting that could in turn lead to more effective interventions for susceptible pediatric populations.**


Emily Hurley, MPH ’12
Doctoral student
Program in Social and Behavioral Interventions (SBI)

Emily Hurley fell in love with Mali during her time there as a Peace Corps volunteer. From 2008 to 2010, Emily helped train community health workers in and around her rural village of Dombila. She also taught health classes to secondary school students, trained adolescent peer leaders, and worked with the local health center to establish a rehabilitation and growth-monitoring program for malnourished infants.

Now she’s back, to start her field work for her doctoral dissertation. Based at the University of Bamako in Mali’s capital city, Emily is studying the effect of patient-provider communication on adherence to antiretroviral therapy. She’s also wrapping up a study on prevention of malaria in pregnancy. A graduate of the School’s Master of Public Health program and a Somer Scholar, Emily returned to Hopkins as a doctoral student in 2013 after working at the Johns Hopkins Center for Communication Programs.

Preventing malaria during pregnancy

Malaria is one of the leading contributors to death of pregnant women and their newborn children in Mali, but only about 15 percent of pregnant women receive the recommended doses of anti-malarial drugs that can prevent the disease. Assistant Professor Steve Harvey, SBI, has been leading a research project to uncover the barriers to this preventive treatment. In 2013, he enlisted Emily to help collect qualitative data for the project. Emily speaks French and learned Bambara (the local language) during her Peace Corps years. She recalls going out into a little far off village for data collection with a team of three students from the University of Bamako.

One of the team’s main findings was that even though women, their husbands, health workers, and other community members consider malaria to be a major threat to a woman’s health during pregnancy, they rarely talk about preventive treatment (or the multiple doses required). This and other preliminary results are helping to inform development of a new maternal mHealth program in the country that Professor Peter Winch, SBI, is launching—one of the many initiatives Hopkins has helped lead over the past few years in Mali.

A growing partnership between universities

Since 2010, a deep partnership has been developing between the Department and the University of Bamako. Winch has led an NIH Fogarty Training grant to support the first public health training program in Mali. And from this grant, many new research projects have been able to develop. It has also allowed Hopkins to host doctoral students and visiting scholars from Bamako. In turn, “there is great public health research momentum here at the University of Bamako,” Emily...
reports. “In fact, there are four Hopkins master's students and one undergraduate student coming this summer.”

Emily has also been coordinating a student team based in Baltimore that meets weekly with Harvey to analyze data and develop articles for publication. Before leaving for Mali in February, Emily participated in person; now she joins via Skype from Bamako. Each student is working on a manuscript for submission to a scientific journal, and each has submitted an abstract for the 2015 annual meeting of the American Society of Tropical Medicine and Hygiene.

“It’s been great to have students so immersed in the project since literally their first week of school,” says Harvey, and he adds: “This kind of hands-on learning is a fantastic way for students to build their analytical and writing skills. We expect that everyone will have one or more peer-reviewed publications as an outcome. And they will have had an opportunity to affect a critical public health problem.”

Improving antiretroviral therapy programs in Mali

The strong relationship between Hopkins and Bamako also made it possible for Emily to propose a research project based in Bamako for her dissertation. Her project received funding from the Fulbright-Hays Doctoral Dissertation Research Abroad Fellowship. She’s currently based at the University of Bamako while she manages her study. The project is investigating how to improve antiretroviral therapy programs in Mali and continue to work with the public health community. “There is also a real problem of making sure people who seek care stick with it,” which her project seeks to address.

Once Emily completes her PhD, she would like to continue in research and academia. “There is a lot to do here in Mali and tremendous opportunity for future research. I love the academic setting, and hope to be a faculty member one day. It would be a dream if I could sustain this partnership and continue to work with the public health program here in Bamako—both in research and in public health training.”

Yeeli Mui, MPH, a doctoral student in the Department’s Program in Human Nutrition, is the lead student who manages the VPOP system. She uses VPOP as part of her dissertation to evaluate the impact of neighborhood blight on the food environment and adolescent obesity risk in Baltimore City. Her findings will also inform the Baltimore Low-Income Food Environment (BLIFE)—a model related to the B’more Healthy Communities for Kids (BHCK) project led by Professor Joel Gittelsohn—which simulates children’s food choices and exercise behavior in a low-income Baltimore neighborhood.

Atif Adam, MBBS, MPH, a doctoral student in the Department’s Health Systems program, is using VPOP to help calculate caloric intake and energy expenditure modeling. Atif uses VPOP to help determine what each individual represented in the model does every day in relation to weight, energy expenditure modeling. Atif uses VPOP to help determine what each individual represented in the model does every day in relation to weight, energy expenditure modeling.
Robert & Helen Wright Fund
Samira Sami, DrPH program
Kwame Sakyi, SBI
Created in 1983 with donations from family members and friends of former International Health faculty member Robert Wright, MD, MPH '40. The Fund provides support for continuing doctoral students who expect to contribute to the improvement of public health in Africa, particularly in Nigeria.

Diana Hess Scholarship
Carina Rosado, Health Systems
In 1983 the Diana Hess Memorial Fund was established with contributions from her family and friends. Diana Hess, a former Peace Corps volunteer in Kenya, was devoted to improving public health in Africa. The Hess Fund provides an annual scholarship to students in the Department of International Health. The award is based on academic and professional accomplishments and need for financial support. Preference is given to those planning to work in Africa.

Nancy Stephens Fund
Goro Yamada, GDEC
Allison Nelson, GDEC
Established in 1970 as the International Health Fund, this fund provides grants to master's or doctoral students in the Department who are completing their degrees. For 37 years Nancy Stephens was the immensely popular student coordinator in the Department. At her retirement in 2001, Dr. Robert Black honored her by renaming this fund the Nancy Stephens Student Support Fund.

John Snow Award
Ruthy Francois, GDEC
Julia Kaminsky, SBI
John Snow, Inc.'s mission is to provide an extensive range of research and consulting services to the health care and service sectors. The International Division provides technical assistance designed to enhance the effectiveness and quality of public health programs. The John Snow, Inc. Award, an annual award created in 2001, provides financial assistance to outstanding, second-year master's students in the Department who are engaged in internships in the field.

Humanitarian Assistance Award
Ann Suk, Human Nutrition
Kia Guarino, Health Systems
This fund provides support to master's and doctoral students committed to improving humanitarian response and health for refugees, displaced persons and populations affected by conflict and natural disasters.

Georgeda Buchbinder Award
Alexandra Searle, Health Systems
Dr. Georgeda Buchbinder received her MPH from the School in 1984. She then moved to Hawaii and began a public health career by teaching Population Science and International Health. Her career was progressing extraordinarily well when she was diagnosed with cancer. This fund was established by friends and colleagues after her death to celebrate her all-too-brief career in public health. This fund annually supports students, junior faculty, or other priority projects in international health.

Henry & Lola Beye Award
Cesar Ugarte, GDEC
Chike Nwangwu, DrPH Program
This fund was established in 2001 through the estate of Lola Beye, widow of Henry Beye, MD. Dr. Beye received his MPH degree from the School in 1942 and was an authority on tropical diseases. He spent many years at the US Public Health Service where he was the director of the Malaria America Research Unit. He conducted intensive studies on elephantiasis, hemorrhagic fever, filariasis, and schistosomiasis, and during his career worked in such countries as Bolivia, British Guiana, Thailand, and Panama. Mrs. Beye, a nurse, often worked in the field with Dr. Beye. This fund supports an outstanding student who has completed a medical degree and is pursuing a graduate degree in the Department.

Bacon Chow Award
Vanessa Oddo, Human Nutrition
This fellowship was established in 1997 by Mrs. Idella Chow in memory of her husband, Bacon Field Chow, who served on the faculty of the Department of Biochemistry from 1949 until his death in 1973. Dr. Chow was internationally recognized for his studies on the effects of maternal diet on a mother's offspring. The fellowship supports outstanding doctoral students working in the area of human nutrition research.

Richard Morrow Award
Kendra Williams, SBI
This scholarship is in honor of Richard H. Morrow, MD, MPH, who was a professor in the Department from 1991 until his death in 2013. Dr. Morrow was a pioneer in the field of health systems and international public health, is remembered for his brilliance, curiosity, humility, humor, generosity, and above all, his integrity.

The Harry J. Prebluda Fellowship in Nutritional Biochemistry
Jillian Emerson, Human Nutrition
Marie Spiker, Human Nutrition
This fellowship was established in 1990 by Mrs. Harry J. Prebluda and her children in memory of her late husband. Harry Prebluda earned his doctorate degree in Biochemistry at the School in 1937, and worked closely with E.Y. McCallum. The fellowship fosters the careers of outstanding young scientists focusing on nutritional biochemistry and metabolism.

The Elsa Orent Keiles Fellowship in Human Nutrition in International Health
Zaynah Chowdhury, Human Nutrition
Nadine Budd, Human Nutrition
Bess Lewis, Human Nutrition
This fellowship was established in 1996 with a bequest from the estate of Elsa Orent Keiles, ScD '25, a graduate of the Department of Chemical Hygiene (now Biochemistry and Molecular Biology). In keeping with Dr. Keiles' research interests, the award provides tuition support for graduate students with demonstrated financial needs in the Department of Biochemistry and Molecular Biology or the Program in Human Nutrition in the Department of International Health.

Mary and Carl Taylor Fund
Nicholas Fanocourt, Health Systems
This program provides grants for undergraduate and graduate students to work with a mentor on a global health project in a developing country.

Global Health Field Research Awards
Jasmine Blake, Health Systems
Daniel Erichick, GDEC
Alexandra Searle, Health Systems
Rachel Turkel, SBI
This program provides grants for undergraduate and graduate students to work with a mentor on a global health project in a developing country.
The Harry D Kruse Fellowships and the Harry D Kruse Publication Awards in Nutrition

The Harry D Kruse Fellowships recognize individuals who have demonstrated outstanding achievements in nutrition research and practice. The Harry D Kruse Publication Awards honor individuals who have made significant contributions to the publication of nutrition research.

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CONGRATULATIONS TO OUR 2015 GRADUATES

PhD: 28  MSPH: 69  MHS in Health Economics: 3

Home Countries
Australia  Indonesia  USA
Canada  Japan  Peru
China  Sierra Leone
Ghana  South Korea
Hong Kong  India

Professor Joanne Katz, ScD '93, MS, professor, GDEC, was awarded the Data for Life Prize by CappSci. The award will allow her to test the feasibility of community-based portable ultrasound use to reduce intrapartum-related fetal and neonatal death in rural Sarlahi District, Nepal.

Allison Barlow, PhD, MPH '97, MA, assistant scientist, Health Systems, received the 2014 Indian Health Service Director's Award. The award honors those who have helped raise the health status of American Indian and Alaska Native people and who have demonstrated extraordinary achievements in public health leadership.

Delta Omega Public Health Honor Society

NEW MEMBERS

Master’s Students
James Bao
Melinda Brown
Alessandra Grasso
Xi Li
Jessica Lin
Ryan Max
Caitlin Milder
Allyson Nelson
Yasmin Ogale

Elinor Shetter
Grace Trompeter
Christine Williams

Doctoral Students
Katharine Allen
Sarah Dalglish
Nasreen Jessani
Sarah Meyer
Melissa Poulisen

Kruse Awards Ceremony in Human Nutrition

Inaugural Kruse Alumni Research-to-Policy Achievement Award in Human Nutrition
Mary Cogswell, RN, DrPH ’92

The Department’s Center for Human Nutrition hosted the Inaugural Kruse Awards Ceremony and seminar in Human Nutrition, at which Dr. Mary “Molly” Edmonds Cogswell received the first Kruse Alumni Research-to-Policy Award in Human Nutrition. The award was founded by Doug Kruse and his wife Betty Wetherell to recognize significant contributions in translating nutrition science into programs and policies to protect population health.

Dr. Cogswell received her DrPH from the Department and since then has been working as a nutritional epidemiologist with an outstanding track record of translating science into practice. She is currently a senior scientist at the CDC where she’s been a leader and innovator in building the scientific and policy foundation for promoting the reduction of sodium consumed by people. According to the Director of the Division of Heart and Stroke Prevention at the CDC, Dr. Barbara Bowman, she was instrumental in the inclusion of a measurement tool to monitor population-level sodium intake. This was one of her many contributions in addition to her leadership that have helped build an evidence base for policymakers to make key decisions on sodium labeling and intake recommendations.

Dr. Cogswell presented a seminar on “Sodium Reduction in the United States: From Science to Policy.” The presentation surveyed the science behind the public health actions to reduce excessive sodium intake in the United States. It also covered what was and wasn’t known about sodium intake as well as current controversies surrounding current guidelines. Dr. Kruse and Professor Keith West, director of the Center and Program in Human Nutrition in the Department, then presented her with the inaugural award. “We deeply appreciate the commitment of the Kruse family to excellence in public health nutrition research and practice while students are at Johns Hopkins, and now in their careers as alumni,” West said.

The Harry D Kruse Fellowships and the Harry D Kruse Publication Awards in Nutrition

The Kruse family also makes two other nutrition awards possible. These awards honor the work and memory of Doug’s father, Harry D Kruse. Harry, a protégé of EV McCullum, received his ScD from Hopkins in 1926 and became a distinguished member of the Department of Biochemistry. After leaving the University, he became the Executive Secretary of the NY Academy of Medicine where he published an impressive body of work.

Since 1987, the Center for Human Nutrition has awarded the Harry D Kruse Fellowship to support doctoral candidates in nutrition who display outstanding achievement and promise (Dr. Cogswell was its 1989 recipient). And since 2010, the Kruse Publication Awards have provided incentive for program students to publish their nutrition research in a peer-reviewed journal prior to graduation.

Harry D Kruse Publication Award
Rebecca K. Campbell, MSPH, PhD student
Hannah Lee Coakley, MSPH ‘13
Yichen Jin, MSPH ’14, CPH
Anna Y. Kharmats, MA, PhD student
Vanessa M. Oddo, MPH, PhD student
Eliza L. Pehlke, MSPH ’13
Melissa Sattler, MSPH / RD student

Harry D Kruse Fellowship
Julie Juel-Bergeron, MPH, PhD student
Zaynah Chowdhury, MPH, PhD student
Leah Redmond, MS, RD, PhD student

From left to right: Professor Keith West, Dr. Molly Cogswell, and Dr. Doug Kruse who presented the first Kruse Alumni Research-to-Policy Achievement Award to Cogswell.

Student Assembly Awards

Awarded by the student body to acknowledge special contributions to student life

Advising, Mentoring & Teaching Recognition Award
Assistant Professor Jesse Jones-Smith
Associate Professor Andrea Ruff

Student Recognition Award
Jessica Atwell, GDEC
Danielle Jung (Sunhee), SBI

Elisa L. Pehlke, MSPH '13
Vanessa M. Oddo, MPH, PhD student
Anna Y. Kharmats, MA, PhD student
Yichen Jin, MSPH '14, CPH
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Harry D Kruse Fellowship
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Zaynah Chowdhury, MPH, PhD student
Leah Redmond, MS, RD, PhD student
INTERDISCIPLINARY PROGRAM FOSTERS STUDENT INNOVATION IN NEWBORN SURVIVAL INTERVENTIONS

As the research of faculty such as Professor Abdullah Baqui has shown, community-based management of newborns can save millions of newborn lives. The team hopes to improve the effectiveness of this type of treatment by providing community health workers with improved information to identify high-risk newborns early in their illness and to begin care sooner. Sensors linked to mobile phones could help collect data that are now difficult to collect, such as pulse oximetry and respiratory rate, and could provide more accurate information about symptoms such as respiratory irregularities that are very hard to measure. Novel physiologic metrics like heart rate variability might even prove to be useful. Data could be transmitted to centrally located providers for a diagnosis, or the team could develop algorithms to guide the course of treatment. Such innovations could both reduce unnecessary treatments and initiate treatment well before more serious symptoms develop. Once tools are developed, the team will seek funding to test feasibility and predictive accuracy in real-world settings.

Immersion to drive innovation

The JiVitA Maternal and Child Health and Nutrition Research Center, a long-standing Johns Hopkins research site well-known for its innovations, is hosting the project, together with leading Bangladeshi neonatologists, such as Professor Monir Hossain at Dhaka Shishu (Children) Hospital. As a first step, students are engaging local technology firms and public health organizations to find out what types of sensors are available and affordable. They’re also accompanying community health workers to map opportunities and understand the local context, and to test how prototype technology works in the field where they might encounter challenges such as heat, dust, and lack of power to charge devices.

JOHNS HOPKINS
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OF PUBLIC HEALTH

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Summer 2015
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Associate Chairs:
Joanne Katz, Academic Programs
Andrea Ruff, Director, Global Disease Epidemiology and Control
Adnan Hyder, Director, Health Systems
Keith West, Jr., Director, Human Nutrition
Peter Winch, Director, Social and Behavioral Interventions
Writer/Designer, Brandon Howard

More Insight, Sooner

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Bangladesh GEMS Research Team

Faculty
Dr. S. Acharya, Whiting School of Engineering
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Dr. A. B. Labrique, Bloomberg School of Public Health
Dr. Y. Yazdi, Whiting School of Engineering

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Wes Bernier, Whiting School of Engineering
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Naveed Pasha, School of Medicine
Allie Sibole, Whiting School of Engineering
Emerson Song, Bloomberg School of Public Health
Melody Tan, Whiting School of Engineering
Jackie Wanjala, Whiting School of Engineering