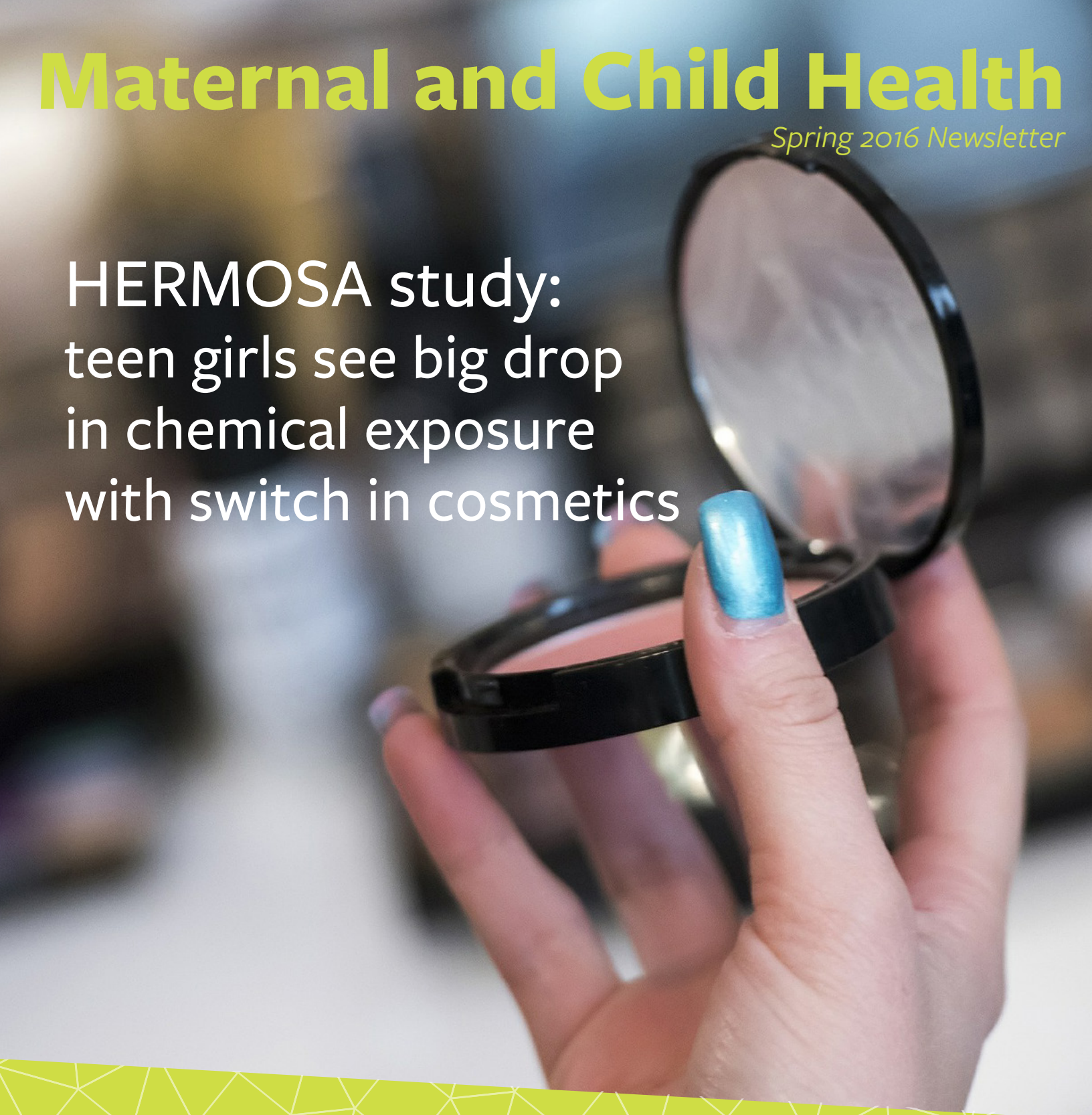
Maternal and Child Health

Spring 2016 Newsletter



HERMOSA study: teen girls see big drop in chemical exposure with switch in cosmetics

Berkeley School of Public Health

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letter from the chair

Dear Alumni and Friends,

On Monday, May 16th our Maternal Child Health community grows stronger and larger by nine; the number of emerging leaders graduating from our MPH programs ready to make change in the world. Though we are always sad to see them go, we couldn't be more proud of what they have learned and accomplished while in the program.

I write these words at the tail end of the spring semester whirlwind. In the last few weeks students have presented their capstone research papers, handed in final projects and are sitting for final exams this week. Continuing students head out into the field in just a few weeks time in order to begin their summer internships. It's been a busy and exciting time for the MCH Program, our Center of Excellence and Postdoctoral Program, and several faculty Research Centers. Please read on to learn about our progress developing the Wallace Center for MCH Research, meet our new Postdoctoral Fellows, and watch the presentations from our spring MCH Research Symposium featuring scholars from UC San Francisco and UC Berkeley.

Maternal Child Health is a diverse and thriving community of people, projects, and activities at UC Berkeley School of Public Health. As always, we invite you to join us. Please contact us if you have an idea or suggestion for collaboration. We look forward to hearing from you.

Best wishes for a happy and productive summer,

Sylvia Guendelman

Sylvia Guendelman PhD, LCSW
Chair, Maternal & Child Health

brown bag lunch series

During the Spring 2016 semester, MCH hosted a pair of Brown Bag Lunches featuring MCH alumni who spoke about their career trajectories post-graduation. The first speaker, Jocelyn Audelo, (MPH '11) spoke about her work as Principal Consultant at Kaiser Permanente's Care Management Institute, where she provides clinical and public health expertise about Maternal-Child populations. Our second guest, Brett AugsJoost, (MPH'12), is a Trainer/Program Advisor with the California Department of Public Health STD Control Branch.

The purpose of the talks was to inform current UCB MCH students about career possibilities after graduation and where an MPH in Maternal and Child Health can take them. Alumni interested in speaking at future lunches should contact Kate Jerman, MCH Assistant Director, at mphprogram@berkeley.edu.

MCH student internships Summer 2016

STUDENT	ORGANIZATION
Lauren Hunter	Advancing New Standards in Reproductive Health (ANSIRH)
Brittany Margot	Telecare, Cultural Competency Evaluation Team
Hmellisa Mlo	Wallace Maternal and Child Health Center
Christine Naya	HRSA Graduate Student Epidemiology Program, (GSEP), Los Angeles Department of Public Health Maternal and Child Health Bureau
Natalie Oman	Global Development Fellow, Groote Schuur Hospital in Cape Town, South Africa
Kaitlyn Patierno	RTI International-Women's Global Health Imperative
Amelia Plant	Phillip Lee Policy Institute, UCSF
Lauren Smith	Children's Hospital Oakland Research Institute--International Zinc Nutrition Consultative Group (IZiNCG)
Claudia Zaugg	California Family Health Council
Sonya Zhu	National Growth and Health Study, UCB School of Public Health
Sophie Lyons	American Civil Liberties Union, Reproductive Justice Project
Allison Rodriguez	San Francisco Department of Public Health, Maternal Child & Adolescent Health Division
Maansi Shah	Behavioral Health Concepts, Inc - California External Quality Review Organization

MCH Capstone

On April 22nd, the graduating class in Maternal & Child Health presented their Capstone research to faculty, fellow students and friends. Congratulations to the class of 2016!

MPH Candidate	Capstone Research Project
Stephanie Arteaga	Perceptions of educational attainment and early adolescent pregnancy
Billy Luong	Immigrant status and gestational diabetes
Colleen McCorkell	Socioeconomic status and parent-child interactions
Soniya Mehra	Pre-pregnancy BMI and preterm delivery in Mexican-American teenagers
Jennifer Menjivar	Access to care among mixed status Hispanic children: Pre- and post-ACA
Sarah Raby	Father's opinion on infant feeding and breastfeeding outcomes
Stacey Yamamoto	Subjective social status and mental health outcomes among adolescents
Anne Yen	C-section rates among US born versus foreign born Chinese women in the US
Yves-Yvette Young	Maternal communication about sex topics and preadolescent sexual behavior

Maternal and Child Health Program awarded $520k HRSA grant for new Center of Excellence and postdoctoral program

Dr. Cheri Pies, UCB MCH Clinical Professor, will oversee the Center of Excellence.

In June 2015, the Maternal and Child Health Program at the UC Berkeley School of Public Health was awarded a 5-year grant from the Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau. The School will receive $520,000 per year to fund its Center of Excellence in Maternal and Child Health in Education, Science and Practice, as well as a new postdoctoral program in Maternal and Child Health Epidemiology. The grant will be overseen by Dr. Cheri Pies, a clinical professor of Maternal and Child Health at UC Berkeley and a longtime administrator and advocate in the field of public health. The postdoctoral training portion of the project will be directed by Dr. Brenda Eskenazi, Jennifer and Brian Maxwell Professor of Maternal and Child Health and Epidemiology at the School of Public Health, and Dr. Kim Harley, Associate Adjunct Professor Maternal Child Health and an alumni of the UC Berkeley MCH Leadership Training Program.

The goals of the Center of Excellence will be to prepare graduates to lead Title V and other MCH organizations, to promote and protect the health status of diverse MCH populations, and to prepare public health and health care professionals to be 21st-century leaders in the field of MCH with a culturally competent, multidisciplinary, community-oriented, ethical, and cost-effective vision of maternal, child, and adolescent health. The CoE will work closely with Title V and other MCH programs at the state, local, national and global level to reduce and ultimately eliminate health disparities and the barriers to health that affect MCH populations.

The postdoctoral program is part of an effort on the part of MCHB to continue to develop new and emerging leaders in the field. "This postdoctoral program, and the ones that will be in place at Johns Hopkins and University of South Florida, will offer exceptional learning, research and teaching opportunities for both DrPH and PhD graduates through collaboration with faculty and students at the institutions as well as a learning community of MCH professional that are part of the Centers for Excellence in MCH", says Pies.

The CoE will work with Title V and other MCH programs at the state, local, national and global level to reduce and ultimately eliminate health disparities and the barriers to health that affect MCH populations.

Fellows will be selected to address key national research priorities in the field of MCH, including health disparities, ACA implementation and changes in health outcomes; children with special health care needs; healthy weight and nutrition; adolescent health; and disparities in maternal and infant mortality and morbidity. Recruitment will focus on fellows who are diverse in terms of interests, prior training, background and experiences, and who are committed to reducing health disparities in racially, culturally, and socioeconomically diverse communities.

Two fellows have been recruited for 2016, Dr. Irene Headen and Dr. Eric Coker (see our Postdoc interviews on pg. 8). Anyone who wishes to be notified of future opportunities should contact mchprogram@berkeley.edu.

--Diana Stasko
MCH Program Assistant

MCH Professor Kim Harley and CHAMACOS Youth Council to investigate adolescent exposure to pesticides

Thanks to a grant from the California Breast Cancer Research Program, a university and a community researcher are collaborating to investigate how adolescents are exposed to potentially carcinogenic and hormone disrupting pesticides. Kim Harley, associate adjunct professor of maternal and child health at the UC Berkeley School of Public Health, and Kimberly Parra from the Clinica de Salud del Valle de Salinas, will use the Community Research Collaboration (CRC) award of $600,000 over three years to conduct a study with Latina teenagers in agricultural Salinas Valley.

Though epidemiologic studies have linked pesticide exposure with breast cancer, information is lacking about how much residents of agricultural communities are exposed. This is particularly true for adolescent girls, who are undergoing rapid reproductive development and breast cell proliferation and may be particularly sensitive to toxic exposures. This study will generate critical data on carcinogenic and endocrine-disrupting pesticide exposure to Latina girls in an agricultural community.

"We know little about how pesticides impact breast cancer risk, but there is increasing concern that environmental chemicals play a role in breast cancer etiology," says Harley. "We know that many pesticides appear to be carcinogenic or hormonally active—which can impact breast cancer risk—but we really don't have a good sense of the extent to which young women who live near fields are exposed to these pesticides of concern."

The CHAMACOS Youth Council (YCC), a group of Salinas high school students that are engaged in learning about environmental health literacy and participatory action research, will be trained in scientific methods and employed in helping conducting the research. Local teen leaders from the YCC will be involved in all stages of the research, including design, implementation, data analysis, interpretation, and presentation of the results. Ultimately, the YCC youth will develop educational materials and identify advocacy projects to reduce local pesticide exposure. Through this peer-to-peer approach, the researchers hope to raise community awareness about chemical exposures and breast cancer risk.

"An exciting aspect of this study is that we get to engage local youth in the research and advocacy process," says co-PI Kimberly Parra.

Approximately 100 14- and 15-year-old female participants will be asked to wear silicone bracelets that measure pesticide exposure through sensory technology, carry GPS loggers to track their movements, and allow dust collection in their homes to measure pesticide levels.

Unique to California, all agricultural pesticide use is reported to the state, including the active ingredient; the amount used; and the date, time, and location of each application. This study will identify the specific pesticides to which residents are being exposed and how those correlate with nearby agricultural use.

The study will be a collaboration between UC Berkeley's Center for Health Assessment of Mothers and Children of Salinas (CHAMACOS) and Clinica de Salud del Valle Salinas (CSVS). The CHAMACOS project is guided by a Community Advisory Board with input from the YCC, a Grower Council made up of agriculture industry representatives, and a Farmworker Council.

The California Breast Cancer Research Program is a state-funded research program that seeks to prevent and eliminate breast cancer by leading innovation in research, communication, and collaboration in the California scientific and lay communities. The CRC award is designed for community based participatory research projects that include a collaborative partnership between a community co-PI and an academic co-PI in all phases of research.

--Jasmine M. Huynh
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Postdoctoral Fellows:

Building bridges to MCH research

The UC Berkeley School of Public Health MCH Epidemiology Postdoctoral training program admitted its first fellow, Dr. Irene Headen, in January of 2016, followed by Dr. Eric Coker in March. Both will be working with the Center for Environmental Research & Children's Health.

Tell us about your career path. How did you get here?

As a Black woman, I'm driven by a desire to understand why health issues in the Black community exist and persist. While at MIT pursuing a pre-med track Bachelor of Science in Brain and Cognitive Sciences, I realized the lens of medicine did not have a wide enough view of these issues, and that understanding them required examining the context in which the Black population exists.

Further investigation revealed a perfect match for my interests: the field of public health and the concentration on racial/ethnic health disparities, which I first investigated as a research associate with the Health Policy Center at Urban Institute in Washington, DC. There, I was exposed to how policy can shape disparate access to health resources for minority and disadvantaged populations.

In the UC Berkeley doctoral program in Epidemiology, I learned to investigate social determinants of health, and how they work as fundamental causes of disparate health outcomes among Black populations. I was also introduced to research on fetal programming and developmental origins of disease, as well as research surrounding the pregnancy and postpartum experiences of Black women as a critical window during which disparities emerge. This intriguing path of research motivated me to apply to the MCH postdoctoral fellowship.

Where do you envision your career in 10 years?

I see myself as an independent researcher investigating structural factors that contribute to persistent racial/ethnic disparities in birth outcomes among Black women. Understanding how this environment contributes to health outcomes during this critical period is key to being able to achieve health equity and eliminate health disparities across generations. With research in this area contributing to the evidence-base to inform interventions, practical and sustainable solutions can be designed for the most disadvantaged communities. In 10 years, I envision myself as scholar who not only conducts the work to build this evidence base but also contributes to the application of this evidence toward action to achieve reproductive health equity.

What energizes you to work in MCH?

I am passionate about eliminating racial/ethnic disparities in key birth outcomes, which shape trajectories of health over the whole life course. The reasons why these disparities have persisted for decades are multi-dimensional, and I am motivated by the fact that the structural environments in which women and families live, work, and play should not be part of this set of factors. Thus, my research focuses on improving our understanding of how such environments contribute to disparate outcomes across racial/ethnic populations. Improving these structural environments at this critical period of pregnancy can have lasting implications for improving the health in minority populations for generations in the future and, thus, am inspired to contribute what I can to this goal.

What will you focus your research on during the program?

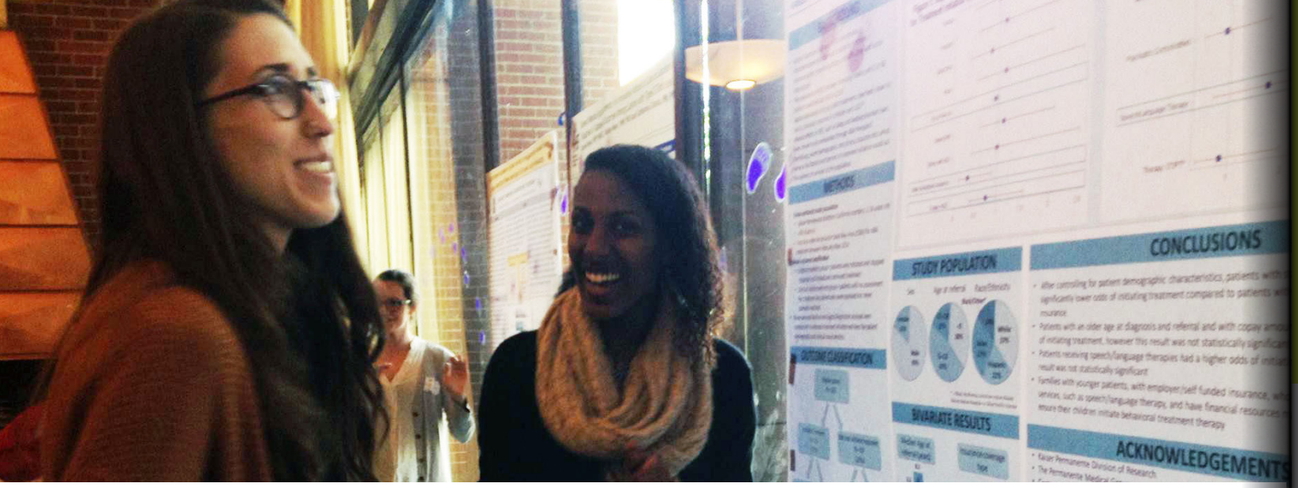
Since my research interests lie on the intersection of environmental exposures, maternal and child health outcomes, and health disparities, my initial research efforts will focus on multiple chemical and non-chemical exposures among the children of farm workers in relation to neurodevelopmental outcomes. I also hope to conduct air pollution birth outcomes research with an emphasis on cumulative exposures to multiple pollutant and non-chemical stressors.

Which faculty will you be working with as a mentor, and why?

I will be working with Dr. Brenda Eskenazi in the Center for Environmental Research and Children's Health (CERCH) and Center for Excellence in Maternal and Child Health. I jumped at this opportunity to work with Dr. Eskenazi for several different reasons. First and foremost, Dr. Eskenazi possesses a wealth of experience in the field of MCH epidemiology of which I hope to learn a great deal about. Secondly, I admire the work and community collaborations that she has developed focusing on vulnerable populations (i.e. low income migrant farm workers); such work represents the type of research and community based projects I would like to be a part of and to help foster moving forward.

What energizes you to work in MCH?

What energizes me about MCH is the vast array of opportunities to sustain positive change on population health. Public Health interventions that protect the health of the mother and the child create benefits for the lifespan of individuals and further presents the opportunity to reduce health disparities and uplift disadvantaged and marginalized groups. Much of our health disparities both locally in the US and globally, whether it be birth outcomes, childhood diseases (i.e. asthma and diabetes), or even diseases into adulthood, are rooted in a variety of preventable early-life or prenatal environmental insults. Hence, having the opportunity to work in MCH energizes me in this way.



MCH **SYMPOSIUM**

Students and professionals in the Maternal and Child Health Field presented their latest research findings at the 2016 Maternal and Child Health Interdisciplinary Research Symposium, held on March 15th at Alumni House on the Berkeley campus. The event featured talks from six researchers in MCH from UC Berkeley and UCSF, and ten posters were displayed illustrating research from individuals and teams.

Presentation topics included identity development in immigrant teenagers, body mass index and preterm delivery in Mexican-American adolescents, and the connection between intergenerational smoking behaviors and maternal adverse childhood experiences. Click on the links on the next page to view videos of select presentations.

Symposium Presentations

Click on the presentation title to view the video on Youtube.

Abbey Alkon, RN, MPH, PhD
Professor, UCSF School of Nursing
"Effects of Pre- and Post-natal Maternal Stress on Infant Temperamental and Autonomic Nervous System Reactivity In a Low-Income Sample."

Emily Green, RN, PhD
"Identity Development in Ugandan Immigrant Adolescents."

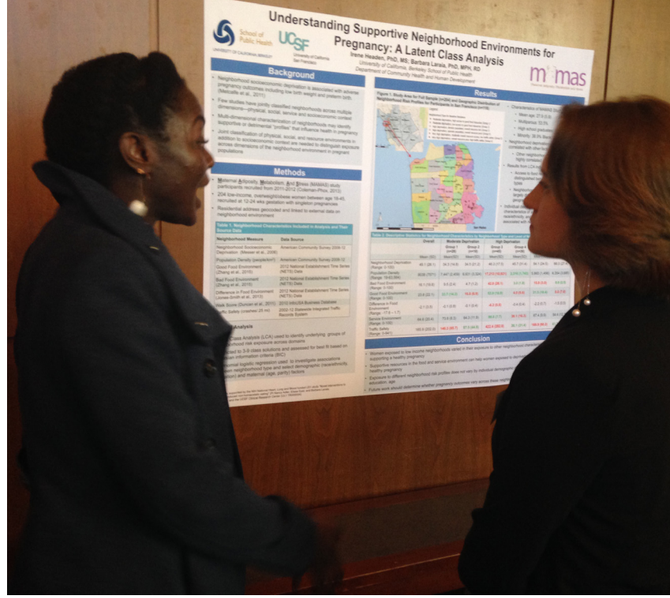
Megan Johnson, PhD
Postdoctoral Fellow, UC Berkeley School of Public Health
"Maternal Sensitivity Buffers the Effect of Social Economic Adversity on Children's Resting Autonomic Functioning."

Soniya Mehra, MD, MPH candidate
Maternal Child Health Program, UC Berkeley School of Public Health
"Pre-Pregnancy BMI & Preterm Delivery in Mexican-American Adolescents."

Veronica Pear, MPH candidate
Epidemiology/Biostatistics Program, UC Berkeley School of Public Health
"The Role of Maternal Adverse Childhood Experiences and Race in Intergenerational High-Risk Smoking Behaviors."*

Varada Sarovar, PhD Candidate
Biostatistics Program, UC Berkeley School of Public Health
"Association Between High Ambient Temperature and Risk of Stillbirth in California."

*We apologize; due to technical difficulties, this presentation video is not available for viewing.



The Wallace Center: UCB MCH seeks mulitple partners to investigate digital health solutions

by Hmellisa Mlo
UCB Maternal and Child Health
2017 MPH Candidate

Under the leadership of Sylvia Guendelman, MCH Chair, the Wallace Maternal and Child Health Center has developed a mission and vision and formed strategic partnerships with centers within the SPH (Bixby), the broader UC system (CITRIS), and with private industry (Aetna Foundation). The center has also undergone some staff changes. Wendy Hussey stepped down as assistant director in the beginning of 2016 to accept a position with the Pre-Term Birth Initiative at UCSF. To provide administrative support for the spring semester, the center has hired a 1st year Maternal and Child Health MPH student, Hmellisa Mlo.

The Wallace Center envisions a world where all children and adolescents have the opportunity to be born healthy, grow healthy, and reach their fullest potential. The center's mission is to support the education and training of students, help advance maternal, child, and adolescent health, and reduce health disparities using technology and innovation. The center has aligned its mission with several strategic focus areas for the School of Public Health over the next five years, including that of eliminating inequalities and leveraging technology as a means of accelerating public health impact.

Spearheaded by Professor Guendelman, the center is embarking on two projects for the coming year that will help understand how MCH populations engage with technology and how this information can be used to design appropriate interventions that empower and educate end users and improve peer-to-peer and patient-provider communication.

The Wallace Center will explore how pregnant women and mothers of young children perceive, adopt, and engage with digital health tools and identify barriers and motivators of health technology engagement.

Listening to Communities is being developed through a partnership with Aetna Foundation, the Center for Information Technology Research in the Interest of Society (CITRIS), Public Health Institute (PHI), and the Bixby Center at UCB. The main objective of Listening to Communities is to understand the actual and potential role for digital health solutions in reducing health disparities in low income populations. Through the implementation of listening sessions, the Wallace Center will explore how pregnant women and mothers of young children perceive, adopt, and engage with digital health tools and identify barriers and motivators of health technology engagement. Virtual convening of community stakeholders will be used to identify key target populations and focus group questions, discuss findings, and follow-up on actions. The Wallace Center hopes to begin pilot work in several Bay Area communities this summer and extend the work to communities in other states in the fall.

Pre to 3 is a collaboration with Google to analyze Google searches in order to understand what health information parents consume online from pre-conception to early childhood and how these searches differ by spatial characteristics and user demographics.

These two projects are just a small sample of the type of groundbreaking work the Wallace MCH Center is leading. Active conversations are underway with other research institutions to develop partnerships that will advance MCAH research opportunities for students, postdocs, and faculty. The center will officially launch this fall, so be on the lookout for more news and updates as we begin this new and exciting work!

MPH Candidate Kaitlyn Patierno presents African policy analysis at the 2016 ICFP

In January 2016, I had the opportunity to join nearly 4,000 family planning champions, researchers, practitioners, and youth leaders at the fourth International Conference on Family Planning in Indonesia. Even a volcanic eruption that delayed the conference from November to January could not slow the energy and momentum surrounding the conference. The ICFP 2016 was opened by His Excellency Joko Widodo, President of Indonesia, who spoke eloquently about the impact of family planning on health and economic development in Indonesia.

The David and Lucile Packard Foundation hosted its second Quality Innovation Challenge, a call for "creative ideas to improve quality in sexual and reproductive health and rights for adolescents and youth." The Children's Investment Fund Foundation launched Adolescents 360, a $30 million initiative to increase uptake of modern contraceptives and reduce teen pregnancy in Ethiopia, Tanzania and Nigeria through user-centered design. The enthusiasm around the launch of these innovative initiatives and the commitment of participants to continue accelerating global access to family planning for women and girls was contagious and invigorating.

I was invited to participate on a panel to present the findings of a policy analysis "Inequity, Fertility and Economic Opportunity: Access to Family Planning Makes a Difference." The analysis explores the impact of wealth-based differentials in fertility decline on population age structure in four African countries, the trajectory of these trends under two different scenarios of fertility decline through 2050, and the impact of those trends on dependency ratios, maternal and child health, nutrition, and education. In all four countries, the poor have higher than desired fertility rates, suggesting persistent wealth-based disparities in access to family planning. High fertility contributes to high maternal and child mortality, poor nutrition, and limited access to education among the poor. These factors limit access to economic opportunity, and perpetuate a cycle of poverty. Fertility decline must be considered a critical element of efforts towards social inclusion and sustained economic growth.

This was my first panel presentation on my own research at a global conference, and the experience was thrilling! ICFP 2016 also presented a great opportunity to network with colleagues in global reproductive health, and to explore ideas for my thesis. As I grow in understanding and applying the rigor of quantitative analysis through my coursework at Berkeley, I am planning to be back to present at ICFP 2018!

--Kaitlyn Patierno
UCB Maternal and Child Health
2017 MPH Candidate

Patierno presents at the conferfence.

HERMOSA study:
teen girls see big drop in chemical exposure with switch in cosmetics

by Sarah Yang

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A new study led by researchers at UC Berkeley and Clinica de Salud del Valle de Salinas demonstrates how even a short break from certain kinds of makeup, shampoos and lotions can lead to a significant drop in levels of hormone-disrupting chemicals in the body.

The shampoos, lotions and other personal care products you use can affect the amount of endocrine-disrupting chemicals in one's body, a new study showed. The results, published in the journal Environmental Health Perspectives, came from a study of 100 Latina teenagers participating in the Health and Environmental Research on Makeup of Salinas Adolescents (HERMOSA) study.

HERMOSA is a community-university collaboration between UC Berkeley, Clinica de Salud del Valle de Salinas, and a team of youth researchers from the CHAMACOS Youth Council, a project to involve young people in public health and the environment.

Researchers provided teen study participants with personal care products labeled free of chemicals such as phthalates, parabens, triclosan and oxybenzone. Such chemicals are widely used in personal care products, including cosmetics, fragrance, hair products, soaps and sunscreens, and have been shown in animal studies to interfere with the body's endocrine system.

"Because women are the primary consumers of many personal care products, they may be disproportionately exposed to these chemicals," said study lead author Kim Harley, associate director of the UC Berkeley Center for Environmental Research and Children's Health. "Teen girls may be at particular risk since it's a time of rapid reproductive development, and research has suggested that they use more personal care products per day than the average adult woman."

Analysis of urine samples before and after a three-day trial in which the participants used the lower- chemical products found significant drops in levels of these chemicals in the body. Metabolites of diethyl phthalate, commonly used in fragrances, decreased 27 percent by the end of the trial period. Methyl and propyl parabens, used as preservatives in cosmetics, dropped 44 and 45 percent respectively. Both triclosan, found in antibacterial soaps and some brands of toothpaste, and benzophenone-3 (BP-3), found in some sunscreens under the name oxybenzone, fell 36 percent.

Surprisingly, there was a small increase in concentrations in two less common parabens. Those levels were small and could have been caused by accidental contamination or a substitution not listed on the labels, the study authors said. Kimberly Parra, study co-director, said it was important to involve local youth in the design and implementation of the study.

"The results of the study are particularly interesting on a scientific level, but the fact that high school students led the study set a new path to engaging youth to learn about science and how it can be used to improve the health of their communities," she said. "After learning of the results, the youth took it upon themselves to educate friends and community members, and presented their cause to legislators in Sacramento."

The CHAMACOS Youth Council included 12 local high school students who helped design and carry out the study. One teen researcher, Salinas native and study co-author Maritza Cárdenas, is now a UC Berkeley undergraduate majoring in molecular and cell biology.

"One of the goals of our study was to create awareness among the participants of the chemicals found in everyday products, to help make people more conscious about what they're using," said Cárdenas. "Seeing the drop in chemical levels after just three days shows that simple actions can be taken, such as choosing products with fewer chemicals, and make a difference."

The researchers noted that cosmetics and personal care products are not well-regulated in this country, and that getting data about health effects from exposure, particularly long-term ones, is difficult. But they say there is growing evidence linking endocrine-disrupting chemicals to neurobehavioral problems, obesity and cancer cell growth.

"We know enough to be concerned about teen girls' exposure to these chemicals. Sometimes it's worth taking a precautionary approach, especially if there are easy changes people can make in the products they buy," said Harley.

Cárdenas said the research findings have already influenced the products she buys for herself. "Personally, since the study, I've tried to use more organic products," she said. "It's hard, especially as a college student who doesn't have a lot of money. You tend to just get what's on sale. But I've decided to splurge more on products with fewer chemicals because of the effect in the future. And if you can't make the best choice when you're buying because of cost, you can at least try to limit the use of the products you do buy."

The California Breast Cancer Research Program of the University of California helped support this research. Chemical analyses were performed through Biomonitoring California, a California Department of Public Health program that tracks levels of chemicals in California residents.

MPH candidate Samantha Ngo presents on PDA management at Making Lifelong Connections 2016

At the Making Lifelong Connections 6th Annual Meeting for current and former trainees of the HRSA training program, held in Albuquerque New Mexico this year, I presented my research on trends in patent ductus arteriosus (PDA) management in 134 neonatal intensive care units (NICUs) throughout California between 2008-2014. PDA is a condition that occurs when the blood vessel outside of the heart, the ductus arteriosus, does not close after birth. This becomes problematic if the hole does not close within a couple of days outside of the womb. Blood flows back into the lungs through the opening, causing fluid build-up. If the opening does not spontaneously close, it is referred to as the patent ductus arteriosus. This commonly occurs in preterm infants and can contribute to a number of morbidities including mechanical ventilation support, necrotizing enterocolitis or possibly even death.

PDA treatment is available, but controversial because the ductus can spontaneously close, but we're unsure in which populations and if/when it might happen. There is unfortunately also an increased morbidity risk associated with treatments, including chronic lung disease and neurodevelopmental impairment. Though treatments have been known for several decades, recent studies have shown wide variation in hospital practices, which is likely the result of so much uncertainty surrounding the condition.

We classified infants receiving either a PDA diagnosis or treatments to prevent or treat a PDA into four groups based on the level of treatment aggressiveness 1) no intervention, 2) pharmacologic intervention--patients receiving indomethacin or ibuprofen, 3) pharmacologic and surgical ligation--if a hospital administered a pharmacologic treatment and then ligated, and 4) surgical ligation without pharmacologic therapy. That was why our research question was to see whether hospitals have changed their management of PDA over time by describing diagnosis and treatment patterns over time through a retrospective cohort study of 28,025 very low birth weight (VLBW) infants (<1,500 grams).

We found that the rate of infants receiving a PDA diagnosis decreased annually over the seven year period. Infants who did not receive a treatment for a PDA increased from 60.5% of 4,205 VLBW infants in 2008 to 78.3% of 4,001 VLBW infants in 2014. Over this period, the rate of infants who received pharmacologic intervention decreased from almost one-third of patients (30.5%) to 15.7%. Patients receiving both pharmacologic intervention and surgical ligation decreased from 6.9% to 2.9%, while infants who underwent primary surgical ligation increased from 2.2% to 3.0% of VLBW infants. We observed similar annual trends in infants weighing between 1,000-1,499 grams as well as infants weighing under 1,000 grams.

PDA treatments have been known for several decades, but a review published in 2011 concluded that randomized control trials and meta analyses had not demonstrated long-term benefits of pharmacologic intervention or ligation. We found that PDA treatments were quick to be incorporated into hospital practices, but when treatments were shown to not be as useful, downturn in use was gradual, which often occurs in medicine. Because hospitals are unclear on what to do about the PDA, this study sets the stage for future research around how different hospitals manage PDA and other conditions as well as therapy and outcomes for VLBW infants.

--Samantha Ngo
UCB Maternal and Child Health
2017 MPH Candidate

CHAMACOS study finds reduced breathing capacity in kids linked to early pesticide exposure

Taking a deep breath might be a bit harder for children exposed early in life to a widely used class of pesticides in agriculture, according to a new paper by UC Berkeley researchers.

A new study has linked the levels of organophosphate pesticide metabolites in the urine of 279 children living in California's Salinas Valley with decreased lung function. Each tenfold increase in concentrations of organophosphate metabolites was associated with a 159-milliliter decrease in lung function, or about 8 percent less air, on average, when blowing out a candle. The magnitude of this decrease is similar to a child's secondhand smoke exposure from his or her mother.

The findings, published in the journal Thorax, are the first to link chronic, low-level exposures to organophosphate pesticides – chemicals that target the nervous system – to lung health for children.
"Researchers have described breathing problems in agricultural workers who are exposed to these pesticides, but these new findings are about children who live in an agricultural area where the organophosphates are being used," said study senior author Brenda Eskenazi, a professor of epidemiology and maternal and child health at the UC Berkeley School of Public Health. "This is the first evidence suggesting that children exposed to organophosphates have poorer lung function."

The children were part of the Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS), a longitudinal study in which the researchers follow children from the time they are in the womb up to adolescence.

The researchers collected urine samples five times throughout the children's lives, from age 6 months to 5 years, and measured the levels of organophosphate pesticide metabolites each time. When the children were 7 years old, they were given a spirometry test to measure the amount of air they could exhale.
The study accounted for other factors that could affect the results, such as whether the mothers smoked, air pollution, presence of mold or pets in the home and proximity to highways.

"The kids in our study with higher pesticide exposure had lower breathing capacity," said study lead author Rachel Raanan, who conducted the research while she was a postdoctoral scholar in Eskenazi's lab. "If the reduced lung function persists into adulthood, it could leave our participants at greater risk of developing respiratory problems like COPD (chronic obstructive pulmonary disease)."

--Sarah Yang
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needs assessment

Needs Assessment in Maternal and Child Health is a course for students who anticipate working in positions involving measuring health problems in communities, planning for health services, and advocating or making decisions about the distribution of community health resources. We've featured projects by two students which were completed for the class, taught by Professor Dana Hughes in Fall 2015.

MCH MPH candidate Christine Naya develops non-clinical competencies evaluation for neonatal resuscitation

Organization: San Francisco General Hospital Pediatric Department

Description of the project:
Recently, there has been interest in improving medical delivery during neonatal resuscitation. Due to the high stress nature of neonatal resuscitation, little effort has been put into teaching during these situations, and often there is little to no post-event analysis to provide constructive feedback for learners. Specifically, some leaders felt the need to develop a method to evaluate, teach, and improve learner's non-clinical skills/ professional skills, which were often overshadowed by the number of medical and technical skills that are emphasized in neonatal resuscitation. However, it was recognized that non-clinical skills, such as leadership and communication with others are as important as objective medical skills for learners of neonatal resuscitation. The main goal of this project was to identify non-clinical competencies and help create an evaluation tool that could be used to assess, teach, and improve residents' non-clinical skills during a resuscitation.

The problem or issue and the proposed solution:
I conducted telephone-based informational interviews of healthcare professionals working in San Francisco General Hospital Pediatric Department to identify non-clinical competencies in four domains (Leadership, Communication, Teamwork, Debrief) and receive input on how to improve neonatal resuscitation training for pediatric residents in these competencies.

Most successful part of the project:
I was able to establish a reciprocal relationship with the preceptors; I felt my voice and opinion were well respected, but the preceptors guided the project and provided the right amount of support when needed. My experience working with community partners provided a real-life professional development opportunity, as I interacted with the preceptors and various healthcare providers.

Most challenging part of the project:
Some limitations of this study include possible selection bias, as the participants were chosen specifically by the preceptors, rather than interviewing a random sample of all providers involved in neonatal resuscitation at San Francisco General Hospital. I was not able to get any patient input or feedback, though I believe this would have added valuable perspectives to the study.

How were you able to apply theory to practice?
Analyzing the qualitative data for this project allowed me to apply much theory learned in lecture to practice. The iterative process of guiding theory through data and analyzing data through theory required a coding system that was more complex than initially lanned. However, this process fostered a new found appreciation and respect toward qualitative data for me, and opened up all the possibilities of qualitative research.

Did you receive any feedback from the organization?
The preceptors and interviewees were very excited to hear the results and learn from each other's feedback.

MCH MPH candidate Claudia Zaugg evaluates food insecurity in West Marin

Organization:
Our preceptor for this project was Julia Van Soelen Kim at the UC Cooperative Extension, Division of Agriculture and Natural Resources. We also worked closely with members of the Marin Food Policy Council, a project of the UC Cooperative Extension, and West Marin Collaborative, an informal group of officials from West Marin social service agencies.

Description of the project:
Our team and I were asked to make a fact sheet with nutrition-related health outcomes and broader demographic information about West Marin residents. What resulted from this iterative process is a succinct presentation of food insecurity, obesity prevalence, and food assistance usage in West Marin, how West Marin compares to Marin County as a whole, and recommendations of where to go from here. We also included a detailed map of grocery store and farmers market locations in West Marin.

The problem or issue and proposed solution:
Marin County is consistently ranked as one of the wealthiest counties in the nation with above average health outcomes on average. However, many inequities exist within. Little is known about the status of West Marin, a largely rural and agricultural part of the county that includes Point Reyes Station, Bolinas, and Lagunitas. In order to inform future policy developments in the area, we needed to come up with a way to show exactly who lives in West Marin and what nutrition and food insecurity related issues they face. My team and I spent the majority of the semester collecting secondary data and sifting through census data in order to answer this question.

Where the students succeeded and what the challenges were:
We were very lucky to have a great preceptor that responded to all our questions and consistently reached out to colleagues in the field to further inform our process. Our final product is reader-friendly and extremely practical. However, we were challenged to answer all the questions we had due to a lack of data pertaining to West Marin specifically. Since this area is largely rural and sparsely populated (approximately 12,000 people out of a total 260,000 in the county) there are large gaps in the literature. Therefore, one of our recommendations is to move forward in collecting up-to-date data in the area.

How were you able to apply theory to practice?
We believe that our project played a very small but necessary part in a comprehensive needs assessment. By having population characteristics in a succinct and accessible format, an argument can be made to perform a more thorough needs assessment that includes community interviews and focus groups.

Did you receive any feedback from the organization?
Our final project was extremly well received. Julia Van Soelen Kim responded with the following: "Thank you so much for your high quality work, professionalism, and enthusiasm for this project. I'm really looking forward to sharing the fact sheet with the rest of the members of the Marin Food Policy Council and West Marin Collaborative. Please know that it will be used and provides an excellent base for us to keep it as a living document."

"Thank you so much for your high quality work, professionalism, and enthusiasm for this project....please know that it will be used and provides an excellent base for us to keep it as a living document."

2017 Center for Health Leadership Fellows

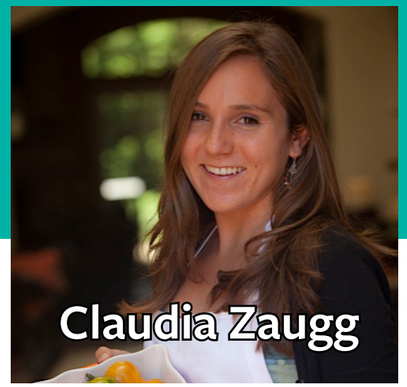
For much of the first year of graduate school, we are so focused on absorbing new content, and often too busy to reflect upon our growth. I wanted to leave the MCH Program with new statistical analysis and evaluation skills, but also with increased confidence in my facilitation, public speaking, and leadership skills. To turn attention to these "soft skills," I applied to be a Center for Health Leadership (CHL) Fellow.

The 3-semester CHL Fellowship Program accepts ten Master's students in the School of Public Health to further develop themselves as leaders. In the first semester, the program director leads us through sessions on teamwork, facilitation and digital storytelling. We get to know each other well during these learning sessions, forming a strong support group. Fellows also partner with a leadership coach to define personal and professional goals. During the final two semesters, we work in groups to consult on a project with a community-based organization. The CHL Fellowship Program is unique amongst schools of public health; the focus on holistic growth has been one of the highlights of my Berkeley experience so far.

As the end of the first semester of the Fellows Program is approaching, I already feel better equipped to initiate projects at future internships and jobs. With renewed awareness of my public speaking strengths, I worked with two other Fellows to facilitate a conversation on ethics. We used a case study to explore ethical issues surrounding a childhood obesity prevention campaign. Another highlight of the semester was learning how to craft a compelling personal narrative; we used iMovie to create videos about our paths to public health. It was inspiring to hear about everyone's journeys.

There is so much more to look forward to. And through it all, we have had a supportive space to discuss our challenges, celebrate our successes and practice new skills. I can't wait to see what the next year will hold.

-Amelia Plant
UCB Maternal and Child Health
2017 MPH Candidate



I decided to participate in the CHL Fellows program in order to gain the leadership skills I felt I lacked or hadn't been exposed to through my previous undergraduate studies and stint at a non-profit. I wanted to gain confidence in front of a room of strangers and to comfortably put my data-driven thoughts into coherent words for anyone outside the field of public health. To me, leadership in public health is extremely important in order to ensure the voices of the populations I represent –mothers, children, adolescents, and women –are heard. Three months into this eighteen-month journey and I am slowly getting there.

Perhaps the most formative experience of the CHL Fellows Program so far has been the extensive self-exploration and self-assessment: Who am I as a leader so far? What characteristics do I associate with myself and what do others see in me? What irks me? What calms me? While I definitely thought about these questions prior to coming to UC Berkeley, CHL Fellows has given me the space and tools necessary to take it to the next level. Since I now have a much better grasp on who I am and how I work in a professional and academic environment, I am more confident in what I can achieve and exactly how I go about doing it.

Looking ahead, I am excited to use the group facilitation skills we've learned in a two-hour discussion on power, privilege, and race at the end of April. Using Ta-Nehisi Coats' *Between the World and Me*, three of my colleagues and I will engage our cohort in a thought-provoking discussion on sensitive topics while maintaining a professional and unbiased atmosphere. And next fall, we will begin our consulting projects with an external organization –an opportunity that will undoubtedly challenge me to put into practice the arsenal of leadership skills I am developing as a CHL Fellow and MCH student.

--Claudia Zaugg
UCB Maternal and Child Health
2017 MPH Candidate

Spring faculty updates

MCH and Epidemiology Professor **Brenda Eskanazi** spoke at a UCB Expert Panel on the Zika Virus March 3rd, along with other School of Public Health Epidemiology professors. Watch a video of the presentation here: **http://clas.berkeley.edu/events/spring-2016/zika-virus.**

Professor Eskenazi was also quoted in a February 6th New York Times article on high lead levels in homes in Flint, Michigan. According to Professor Eskenazi, lead poisoning causes "poorer cognition, attention disorders and, at higher doses, seizures, coma and death." **Read more**

Ndola Prata, MD, MSc, MCH Professor and director of the **Bixby Center for Population, Health & Sustainability** presented at the **3rd International Congress for Women's Health & Unsafe Abortion** held in Bangkok from January 26th – 29th. Professor Prata presented her findings on attitudes about abortion and abortion safety in Angola and Rwanda.

Professor Sylvia Guendelman participated in the **UC-Mexico Health Initiative** in Mexico City from April 29-30 along with UC Berkeley School of Public Health Dean Stefano Bertozzi and faculty from UCSF. The initiative, spearheaded by University of California President Janet Napolitano, brings together faculty from the UC system and its partners in Mexico to conduct innovative research in maternal-neonatal health and in diabetes, obesity and violence reduction in Mexico.

MCH Professors **Malcolm Potts** and **Nap Hosang,** pictured above, are working with pharmaceutical entrepreneur Samantha Miller to make birth control pills available over the counter. In January 2016 their company, Pelagius, bought the rights to an existing prescription oral contraceptive. The next step is to submit the pill to the FDA for approval, with an estimated approval date sometime in 2019.

Select 2016 faculty, student and alumni publications

Alumni indicated with *, student/postdoc indicated with †

MULTIPLE FACULTY AUTHORS

Mexico's Seguro Popular Appears To Have Helped Reduce The Risk Of Preterm Delivery Among Women With Low Education. Strouse C*, Perez-Cuevas R, **Lahiff M, Walsh J, Guendelman S**. Health Aff (Millwood). 2016 Jan 1;35(1):80-7. doi: 10.1377/hlthaff.2015.0594.

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Decreased lung function in 7-year-old children with early-life organophosphate exposure. Raanan R, Balmes JR, **Harley KG,** Gunier RB, Magzamen S, Bradman A, **Eskenazi B**. Thorax. 2016 Feb;71(2):148-53. doi: 10.1136/thoraxjnl-2014-206622. Epub 2015 Dec 3.

Erratum: "In Utero and Childhood Polybrominated Diphenyl Ether Exposures and Body Mass at Age 7 Years: The CHAMACOS Study". Erkin-Cakmak A*, **Harley KG**, Chevrier J, Bradman A, Kogut K, Huen K, **Eskenazi B**. Environ Health Perspect. 2016 Apr 1;124(4):A68.

JULIANNA DEARDORFF

Preferred Child Body Size and Parental Underestimation of Child Weight in Mexican-American Families. Pasch LA, Penilla C, Tschann JM, Martinez SM, **Deardorff J,** de Groat CL, Gregorich SE, Flores E, Butte NF, Greenspan LC. Matern Child Health J. 2016 Mar 25.

Neighborhood deprivation, race/ethnicity, and urinary metal concentrations among young girls in California. Gonzales FA, Jones RR, **Deardorff J,** Windham GC, Hiatt RA, Kushi LH. Environ Int. 2016 May;91:29-39. doi: 10.1016/j.envint.2016.02.004. Epub 2016 Feb 22.

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NDOLA PRATA

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Cost of providing injectable contraceptives through a community-based social marketing program in Tigray, Ethiopia. **Prata N**, Downin J, Bell S,* Weidert K, Godefy H, Gessessew A. Contraception Journal. Published Online:February 09, 2016. DOI: http://dx.doi.org/10.1016/j.contraception.2016.01.017

SYLVIA GUENDELMAN

Biomechanical and organisational stressors and associations with employment withdrawal among pregnant workers: evidence and implications. **Guendelman S,** Gemmill A*, MacDonald LA. Ergonomics. 2016 Apr 27:1-12. [Epub ahead of print]

Weight Loss Success Among Overweight and Obese Women of Mexican-Origin Living in Mexico and the United States: A Comparison of Two National Surveys. **Guendelman S**, Ritterman Weintraub M, Kaufer-Horwitz M. J Immigr Minor Health. 2016 Mar 22. [Epub ahead of print]

BRENDA ESKENAZI

Perfluoroalkyl Substances, Sex Hormones, and Insulin-like Growth Factor-1 at 6-9 Years of Age: A Cross-Sectional Analysis within the C8 Health Project. Lopez-Espinosa MJ, Mondal D, Armstrong BG, **Eskenazi B,** Fletcher T. Environ Health Perspect. 2016 Jan 22. [Epub ahead of print]

The impact of maternal depression and overcrowded housing on associations between autonomic nervous system reactivity and externalizing behavior problems in vulnerable Latino children. Waters SF, Boyce WT, **Eskenazi B,** Alkon A. Psychophysiology. 2016 Jan;53(1):97-104. doi: 10.1111/psyp.12539.

MALCOLM POTTS

The Pill Really Can Be Mightier Than the Sword: A Response to Recent Commentaries. **Potts M**, Graves A*. Int J Health Policy Manag. 2016 Jan 6;5(3):219-20. doi: 10.15171/ijhpm.2016.02.

CHERI PIES

Growing a Best Babies Zone: Lessons Learned from the Pilot Phase of a Multi-Sector, Place-Based Initiative to Reduce Infant Mortality. **Pies C,** Barr M*, Strouse C*, Kotelchuck M; Best Babies Zone Initiative Team. Matern Child Health J. 2016 May;20(5):968-73. doi: 10.1007/s10995-016-1969-1. Review. PMID: 27013517

MAUREEN LAHIFF

Female Sterilization and Poor Mental Health: Rates and Relatedness among American Indian and Alaska Native Women. Cackler CJ*, Shapiro VB, **Lahiff M**. Womens Health Issues. 2016 Mar-Apr;26(2):168-75. doi: 10.1016/j.whi.2015.10.002. Epub 2015 Nov 19.

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