

PROTECTING CHILDREN'S ENVIRONMENTAL HEALTH IN THE U.S.-MEXICO BORDER REGION

SYMPOSIUM PROCEEDINGS

A summary of the Protecting Children's Environmental Health in the U.S.-Mexico Border Region Symposium sponsored by the U.S. Environmental Protection Agency in San Diego, CA on January 27 – 28, 2016, in collaboration with federal, state, and local partners.

Updated: July 11, 2016

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INTRODUCTION

The U.S. Environmental Protection Agency (EPA) works with several partners to address binational environmental challenges and disproportionate health impacts burdening communities in the U.S.-Mexico Border Region. Working to improve children's health is a fundamental strategy of the Border 2020 Program, which is the current environmental program being implemented under the *Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area* (the La Paz Agreement) signed by the United States and Mexico in 1983.

The EPA has supported various educational and outreach activities to help health professionals, promotores, health educators, public health practitioners and others to better recognize and address environmental exposures that may impact children's health. As part of this ongoing capacity-building effort, the EPA hosted a free 1.5-day symposium in San Diego, California from January 27 – 28, 2016. The symposium focused on children's environmental health risks that are commonly found in communities located within the California-Baja California and Arizona-Sonora regions. The goals of the symposium were to:

- Increase knowledge of children's environmental health risks along the U.S.-Mexico Border;
- Increase the capacity of health professionals, public health practitioners, environmental professionals, promotores, and the public to address or mitigate children's environmental health issues; and
- Facilitate networking and knowledge sharing among symposium attendees to promote collaboration across disciplines to resolve children's environmental health issues.

Over 130 people attended the symposium which featured six plenary and six concurrent sessions. Plenary sessions provided an overview of both government and community-based initiatives to address environmental and public health challenges in the border region. Plenary sessions also discussed ongoing challenges in border communities, including air quality, water quality, climate change, and vector-borne diseases. Concurrent sessions provided information on industrial pollution, environmental asthma triggers, pesticides, lead, mercury, and toxic chemicals in personal care products. Furthermore, a grant writing workshop was held to guide participants on how to write competitive grant proposals to support their work.

Thank You to Our Partners

The symposium was possible by support of EPA's partners. Representatives from the following organizations devoted an incredible amount of time, resources, and energy to help organize this symposium: Agency for Toxic Substances and Disease Registry, U.S.-Mexico Border Health Commission, California Department of Public Health Environmental Health Investigations Branch, and the Border Environment Cooperation Commission. In addition, representatives of

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the Centers for Disease Control and Prevention provided considerable assistance throughout the accreditation process.

Moreover, participants of EPA-sponsored trainings and representatives from the following organizations provided invaluable feedback to inform the symposium agenda: Arizona Department of Health Services Office of Border Health; Arizona Department of Environmental Quality Office of Children's Environmental Health and Office of Border Environmental Protection; Sonora Environmental Research Institute, Inc.; University of Arizona; California Office of Environmental Health Hazard Assessment; California Department of Public Health Office of Binational Border Health; Comite Civico del Valle, Inc.; Imperial Valley Child Asthma Program; U.S. Department of Health and Human Services Office of Minority Health; and the Western States Pediatric Environmental Health Specialty Unit.

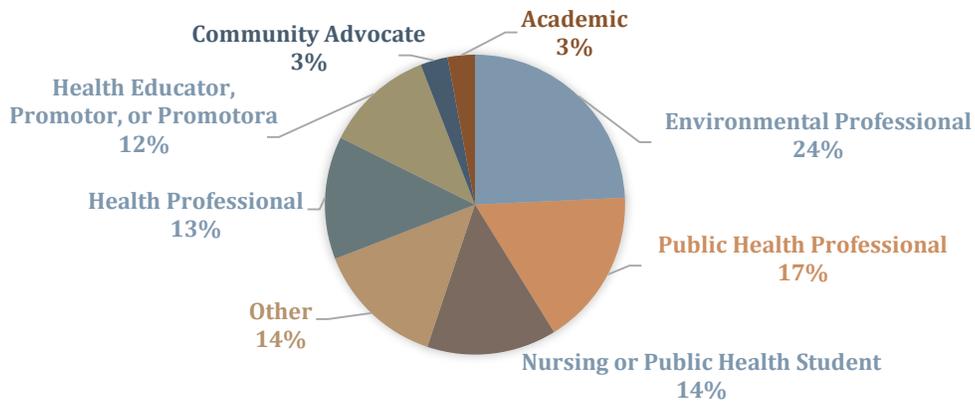
Symposium as Part of a Broader Effort to Protect Children's Health in the Border Region

This symposium was held as part of a broader effort the EPA has undertaken to help improve environmental health conditions in communities within the border region, which spans approximately 2,000 miles from the Pacific Ocean to the Gulf of Mexico. In addition to the symposium that was held San Diego, California, the EPA sponsored a similar symposium in September 2015 in partnership with the Southwest Center for Pediatric Environmental Health at Texas Tech in El Paso, Texas. The EPA has also worked with a variety of partners to support capacity-building efforts in communities. In 2015, the EPA worked with the U.S.-Mexico Border Health Commission, Pediatric Environmental Health Specialty Unit, and several other partners to sponsor 10 training classes for promotores along the border region in California, Arizona, and Texas. Training classes covered a variety of topics, including: healthy homes concepts, asthma, household chemicals, bites and stings, air quality, water quality, lead, pesticides, and climate change. Please see the [Border 2020 website](#) for information on upcoming capacity-building and outreach events in the border region and for more information on current, upcoming, or past projects.

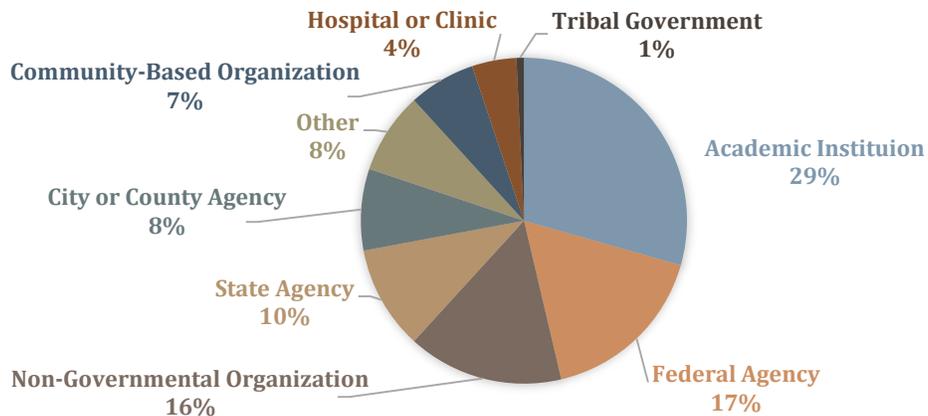
PARTICIPANT SUMMARY

The target audience for the symposium included health professionals (i.e., physicians, nurses, nurse practitioners, etc.), environmental professionals, public health professionals, promotores, health educators, community advocates, and the public from the U.S. and Mexico. A total of 136 people signed in at the symposium. Participants represented various professions and organizations.

Almost one-quarter of the attendees identified as environmental professionals. Public health professionals comprised 17% of the audience, health professionals accounted for 13%, and health educators and promotores represented 12% of the attendees. Nursing and public health students (14%), academics (3%), community advocates (3%) and other professionals (14%) such as program managers, coordinators, and directors also participated.



Several attendees, including health professionals, students, professors, and researchers, were from academic institutions (29%). In addition, many attendees were from different levels of government—tribal (1%), city or county (8%), state (10%), and federal (17%). Representatives of non-governmental organizations (16%), community-based organizations (7%), hospitals and clinics (4%), and other organizations (8%) such as community health organizations, professional networks, and international organizations also attended.



POSTER SESSION AND BOOTHS

The symposium included an outreach area and poster session to encourage networking and knowledge-sharing among attendees. Booths had educational materials about environmental and public health topics as well as information about programs that are being implemented in communities within the border region. Posters featured research and information on a variety of programs.

Organization	Booth or Poster Topic
<p>Arizona Department of Environmental Quality Office of Children's Environmental Health</p>	<p><u>ADEQ Flag and Idle Reduction Program</u> Representative: Julie Finke This poster featured informational graphics summarizing ADEQ's Air Quality Flag and Vehicle Idle Reduction Programs and ADEQ's Office of Border Environmental Health.</p> <p><u>Targeted Childhood Lead Screening in Along the Border</u> Representative: Julie Finke Childhood lead poisoning is still a major preventable public health problem in Arizona. Lead is a silent poison. Because lead exposure often occurs with no obvious symptoms, it frequently goes unrecognized. Even at low blood lead levels, children's intelligence, behavior, hearing and growth can be impacted. Over 800 children are identified with elevated blood lead levels in Arizona every year. This poster described Arizona's Targeted Lead Screening Plan, highlighting how high-risk zip codes were identified, screening recommendations for at-risk children, border health and lead issues, as well as lead sources identified among poisoned children.</p>

POSTER SESSION AND BOOTHS

Organization	Booth or Poster Topic
<p>Children's Environmental Health Network</p>	<p><u>Blueprint for Protecting Children's Environmental Health</u> Representative: Kristie Trousdale, MPH</p> <p>This poster described and provided background on the Blueprint for Protecting Children's Environmental Health. A historic meeting was convened by the Children's Environmental Health Network at Wingspread, headquarters of the Johnson Foundation, in Racine, Wisconsin on October 21-23, 2014. Over 30 visionary leaders representing perspectives from science, non-profit advocacy, environmental justice, child health, urban planning, academia, public health, business, economics, public policy, law, and agriculture gathered in urgent recognition that children are now suffering from an array of illnesses and chronic diseases linked to environmental exposures. This diverse group of leaders drafted a dynamic vision statement calling for transformative change through renewed and collective action to provide all children with the protections from harm that they deserve. In the weeks following the retreat, these leaders developed a Blueprint for Action to move the vision to reality. The recommendations and actions outlined in this Blueprint are the frame for moving forward. The poster emphasized that this is just the beginning and that bold and robust actions are necessary.</p>
<p>Comite Civico del Valle, Inc.</p>	<p><u>Respira Sano: Imperial County Air Quality School Flag Program</u> Representative: Israel Cruz</p> <p>This poster described the School Flag Program in Imperial County that Comite Civico del Valle, Inc. is leading. The program uses colored flags to help children, parents, school personnel, and the community to be aware of daily air quality conditions.</p>
<p>County of San Diego Childhood Lead Poisoning Prevention Program</p>	<p>Representatives: Jamie Schroer Culbert, Community Health Promotion Specialist; Laura Alessio, Public Health Nurse</p> <p>The County of San Diego Childhood Lead Poisoning Prevention Program booth included educational material on prevention, nutrition guidelines, sources of exposure, screening guidelines, and lead safe work practices. Various materials were provided in English, Spanish, Vietnamese, Chinese, Hmong, Lao, Somali, and Farsi.</p>

POSTER SESSION AND BOOTHS

Organization	Booth or Poster Topic
<p>County of San Diego Vector Control Program</p>	<p>Representative: Mayra Hernandez, Environmental Health Specialist I</p> <p>The San Diego County Vector Control Program (VCP) is a countywide program that monitors vectors and the diseases that they carry. A "vector" is an animal or insect capable of transmitting the causative agent of human disease. "Vector" also includes eye gnats. Some examples of vectors in San Diego County are mosquitoes, ticks, and rodents. The VCP has been reducing and controlling mosquitoes since the 1930s. The VCP booth featured educational materials on vectors and vector-borne diseases. The booth consisted of a three panel display board, brochures, DVDs, activity books, samples of mosquito repellent, and adult mosquitoes.</p>
<p>San Diego State University</p>	<p><u>Breast Milk Contamination and Seafood Consumption of Breastfeeding Mothers in San Diego County</u></p> <p>Author: Claire O'Brien</p> <p>Persistent organic pollutants (POPs) are ubiquitous environmental contaminants that have been measured in humans and human breast milk globally. Once absorbed, POPs accumulate in fatty tissues and, during lactation, are mobilized, excreted in breast milk, and passed on to the infant. As a result, breastfeeding infants are exposed to a wide variety of potentially toxic compounds at relatively high doses. This poster described a study that is considering breast feeding mothers in San Diego County for analysis of a wide-range of natural and anthropogenic POPs using a comprehensive two-dimensional gas chromatography coupled to time-of-flight mass spectrometry (GC×GC/TOF-MS). The results of this study will provide a baseline of human exposure to naturally produced hydrophobic organic compounds (HOCs) for the first time and aid in both the characterization of compounds in human breast milk and the effects lifestyle choices have on chemical body burden.</p>

POSTER SESSION AND BOOTHS

Organization	Booth or Poster Topic
<p>San Diego State University, San Diego, CA; Universidad Autónoma de Baja California, Campus Tijuana, Tijuana, Mexico; Secretaría de Protección al Ambiente, Tijuana, Mexico; Universidad Autónoma de Baja California, Campus Mexicali, Mexicali, Mexico</p>	<p><u>Nontargeted Analysis of PM2.5 Particulates in Air Samples from a U.S.-Mexico Border City by Comprehensive Two-Dimensional Gas Chromatography Coupled to Time-of-Flight Mass Spectrometry</u></p> <p>Authors: Penelope JE (Jenny) Quintana, T. Correll, E. Hoh, J. Rodriguez-Ventura, J. Castillo Quñones, R. Zurita Frias, Y. Gutierrez Gonzalez, L. Aguilar Dodier, M. Quintero Nuñez</p> <p>Toxicity and human studies have identified polyaromatic hydrocarbons (PAHs) as a major class of chemicals associated with adverse health effects such as cancer and effects on fetal growth and development. Analysis was by nontargeted comprehensive two-dimensional gas chromatography coupled to time-of-flight mass spectrometry, which can detect a wide range of compounds. The poster reported on PAHs and other compounds found in urban air in the U.S.-Mexico border city of Tijuana, Baja California, Mexico. Samples were collected for 24 hours using a high-volume PM2.5 air sampler. A wide range of PAHs and other compounds were detected. In samples taken in the industrial area near maquiladoras (foreign-owned factories operating on the free trade zone), multiple phthalate compounds were abundant. Some compounds had not been identified in urban air before. Such analysis may inform studies of sources and health risks or pollution in the U.S.-Mexico border region.</p>
<p>Southeast Arizona Area Health Education Center</p>	<p><u>Citizen Science: Health Career Club Adolescents Engage in Mosquito-Borne Disease Prevention in an Arizona Border Community</u></p> <p>Representatives: Claudia Velasco and Gail Emrick</p> <p>The Future Healthcare Leaders Club, sponsored by the Southeast Arizona Area Health Education Center(SEAHEC), works to prepare, encourage, and assist youth from the region's border and tribal communities for a career in the health field. The Santa Cruz County Health Department and Arizona Department of Health Services Border Infectious Disease Surveillance Program have been involved in a pilot project to increase mosquito surveillance and educational outreach for mosquito-borne diseases that are now a risk in the border region. The poster described the strength of the results collected over three weeks showing how adolescents can act as community ambassadors for emerging public health issues and identify and eliminate environmental threats like mosquito breeding sites in order to prevent the spread of mosquito-borne disease in the border region.</p>

POSTER SESSION AND BOOTHS

Organization	Booth or Poster Topic
<p>Southeast Arizona Area Health Education Center</p>	<p><u>Arizona Community Health Workers Association (AzCHOW): Strengthening the Emerging Workforce</u></p> <p>Representatives: Floribella Redondo and Gail Emrick</p> <p>Arizona border communities are faced daily with the challenge of developing long lasting projects that not only impact the health of community members on both sides of the border, but create long lasting policy challenges in which environmental changes can be built to develop sustainable health systems. With that in mind, AzCHOW presented on the role of community health workers in these border projects and how they are a fundamental piece in developing policy and environmental and sustainable system changes in border communities.</p> <p>SEAHEC's booth provided education on the programs that SEAHEC offers, and the opportunities to strengthen and integrate community health workers into the healthcare system.</p>
<p>Universidad Autónoma de Baja California, Centro de Investigación Científica y de Educación Superior de Ensenada</p>	<p><u>Health of Child Population by Proximity to Gas Stations in Baja California</u></p> <p>Author: Marco Antonio García Zarate</p> <p>This poster described a study conducted in schools in the state of Baja California for selected schools located within 300 meters of gas stations to determine whether students at those schools are exposed to gasoline vapors and chemicals in those vapors, in particular benzene. Researchers found that the population of children exposed to the vapors due to the surrounding sources of emission to be considerable. The researchers applied a bio-indicator technique in the Municipality of Ensenada and found a correlation between the sources and exposures in the child population.</p>

POSTER SESSION AND BOOTHS

Organization	Booth or Poster Topic
U.S. Environmental Protection Agency	<p data-bbox="570 310 1133 344"><u>Model School Environmental Health Program</u></p> <p data-bbox="570 359 889 392">Author: Eric Canteenwala</p> <p data-bbox="570 405 1398 982">A school environmental health program is a holistic, comprehensive, and actionable strategy that integrates preventative measures and addresses environmental health issues by fostering well-maintained school buildings and grounds. Sustainable school environmental health programs promote environments that are conducive to learning and protect the health of building occupants. The EPA developed a model K-12 school environmental health program as a resource that states can customize and share with schools and school districts to help them establish, or enhance an existing, school environmental health program. The model program identifies five broad components of environmental health issues encountered in schools and actions schools and school districts can take to address them. These components are: practice effective cleaning and maintenance; prevent mold and moisture; reduce chemical and environmental contaminant hazards; ensure good ventilation; and prevent pests and reduce pesticide exposure.</p> <p data-bbox="570 995 1393 1192">The EPA booth displayed a variety of outreach materials including the Sensible Guide for Healthier School Renovations and information on the following topics: integrated pest management, healthy homes, healthy schools, Pediatric Environmental Health Specialty Units, lead, asthma, pesticides, and climate change. Most of the materials were available in both English and Spanish.</p>

PRESENTATION SUMMARIES

Presentation summaries are provided below.¹ Presentation slides are available on the EPA website at www.epa.gov/border2020/childrens-environmental-health-symposium-san-diego-2016.

Opening Remarks and Keynote

Opening Remarks

Jared Blumenfeld, Regional Administrator, U.S. Environmental Protection Agency

The border region spans a length of 2,000 miles from the Gulf of Mexico to the Pacific Ocean covering a varied landscape that includes vast deserts, valleys, mountains, and coastal areas. It is home to more than 14 million people, with 7.3 million residing in the United States and 6.8 million in Mexico, located in 4 U.S. states, 6 Mexican states, and 26 U.S. federally-recognized tribes. Border communities often face multiple environmental burdens—poor air quality, asthma triggers, exposure to toxics such as lead or pesticides, lack of access to safe drinking water, sanitation and waste management issues, and more. Children are especially vulnerable to these burdens. On top of this, communities also struggle with poverty, lack of access to services, language barriers and other social stressors.

The EPA continues to partner with federal, state, and local agencies, community organizations, universities, and many others to advance environmental justice and protect children's environmental health in the border region. Over the past three years, the EPA has provided more than \$500,000 of funding to assist several organizations to build capacity to protect children's health through training, home assessments, and farmworker education. In particular, through the Border 2020 Program, the EPA has established successful partnerships and leveraging practices amplifying the value and impact of limited agency funds, as demonstrated by our region's ability to leverage \$660,000 in Border 2020 grants with an additional \$328,000 in external match funding in the round of grants awarded in the fall of 2015.

The EPA recently developed two documents that can help schools in the border region and elsewhere create and maintain healthier learning environments. Many school buildings are old and often in need of upgrades. The EPA developed the *Sensible Guide for Healthier School Renovations* to help school officials, facility managers, and the school community understand how to avoid key environmental health hazards as they prepare for and undergo renovations. This guide was completed in January 2016, and we are debuting the guide here at the symposium. In addition, many school buildings are often located near roadways with heavy traffic, which may lead to student and school staff exposure to traffic-related air pollution. To address this issue, the

¹ The materials and opinions presented by non-federal speakers are for informational purposes only and are not products of the U.S. Environmental Protection Agency (EPA) or of the United States Government. These presentations and presentation summaries are not intended to imply an EPA endorsement or sanction of these non-federal presenters, their organizations, materials, or the opinions they express.

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EPA developed *Best Practices for Reducing Near-Road Air Pollution Exposure at Schools* to help schools and communities identify strategies to reduce student and staff exposure to traffic-related pollution.

Children's Health: Environmental Impacts & Social Determinants

Ruth Etzel, MD, PhD, Director, Office of Children's Health Protection, U.S. Environmental Protection Agency

Twenty-four percent of the world disease burden could be prevented by modifying the environment. Child chronic diseases and developmental disabilities are increasing due to many factors influencing environmental degradation, including industrialization, urbanization, poverty and inequality, climate change, desertification, and deforestation. Childhood overweight/obesity rates have quadrupled compared to historic averages. This has resulted in a 2.5-fold increased risk of overall mortality, 4-fold risk of cardiovascular mortality, 5-fold risk of diabetes, and increased risk of hypertension, gall bladder disease, and some cancers. Other issues affecting children's health and development include persistent organic pollutants, endocrine disruption, mycotoxins, Zika virus, and others. Environmentally-related illnesses in children have high social and economic costs, including sick days away from school, productivity lost by parents away from work, and increased medical costs.

Life expectancy varies by zip code demonstrating the effects of social determinants of health, defined by the World Health Organization as "...conditions in which people are born, grow, live, work and age...The social determinants of health are mostly responsible for health inequities." Social determinants of health include poverty, employment, housing, language barriers, access to healthcare, education, and legal status. Environmental exposures coupled with social determinants of health can influence the burden of environmentally-related diseases in certain populations. For example, research has demonstrated that poor and minority children have a greater asthma burden.

Until relatively recently, children's unique vulnerabilities were not recognized. Children were depicted in art as "little adults." It is now recognized that children are at increased risk from environmental hazards than adults because children have different and unique exposures, dynamic developmental physiology, and longer life expectancy. In addition, children are politically powerless, so they must rely on adults for protection from toxic substances. These vulnerabilities can be exacerbated by poverty, malnutrition, degraded environments, and stressful circumstances. Part of the solution includes implementing policies and programs that are fully protective of children's health.

PRESENTATION SUMMARIES

U.S.-Mexico Border Initiatives to Address Environmental and Public Health Challenges

Border 2020: U.S.-Mexico Environmental Program

Jeff Scott, MPP, Region 9 Land Division Director, U.S. Environmental Protection Agency

The Border 2020 Program is the latest environmental program implemented under the 1983 La Paz Agreement. It emphasizes regional, bottom-up approaches for decision making, priority setting, and project implementation to address environmental and public health challenges in the border region. It is an agreement between the EPA, Secretaría del Medio Ambiente y Recursos Naturales, 10 U.S. and Mexican states, and 26 federally-recognized tribes in the U.S. Border 2020 goals include: reducing air pollution; improving access to clean and safe water; promoting waste management and clean sites; emergency response and preparedness; and compliance and environmental stewardship. Working to improve children's health is a fundamental strategy of the Border 2020 Program.

Notable Border 2020 Program accomplishments include the investment of \$680 million to eliminate over 350 million gallons per day of untreated sewage from entering binational rivers, removal of more than 20 million scrap tires from clandestine dump sites throughout the border, and removal of over 2,200 tons of trash from entering the Tijuana and New Rivers. Recent environmental health accomplishments include the renewal of the collaborative agreement with the U.S.-Mexico Border Health Commission; this ongoing partnership has resulted in the establishment of a Pediatric Environmental Health Specialty Unit in the border region and implementation of a series of 10 environmental health workshops for promotores in eight U.S. cities along the border. In addition, the Border 2020 Program continues to support the Healthy Homes Healthy Breathing Project, which has reached 97 families as of the date of the symposium. Another recent accomplishment is an assessment of border environmental health along California-Baja California, which found that asthma emergency department visits are 50 percent higher in Imperial County, CA compared to the rest of the state and heat-related emergency department visits are 5-7 times higher in Imperial County compared to the rest of the state.

Although environmental and public health protection has advanced in the border region, many environmental challenges remain: binational airsheds and rivers continue to exceed standards, there is insufficient infrastructure to support the growing population, management of solid and hazardous waste remains inadequate, and climate change may lead to new issues or exacerbate existing ones.

To help overcome these ongoing challenges, the Border 2020 Program recently awarded more than \$660K in grants to support five projects in California-Baja California and seven projects in Arizona-Sonora (an additional \$330K is being leveraged). Some grant projects include:

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identification of emissions reduction measures and actions in Nogales, Sonora; evaluation of environmental health status along the Arizona-Sonora border; and an “ocean friendly” restaurants campaign in the Tijuana-San Diego area. Furthermore, \$10 million was appropriated for the Border Environment Infrastructure Fund to support of high-priority municipal drinking water and wastewater infrastructure projects.

U.S.-Mexico Border Health Commission Overview

Robert Guerrero, MBA, Chief, Office of Border Health, Arizona Department of Health Services

The mission of the Border Health Commission (BHC) is to provide international leadership to optimize health and quality of life along the U.S.-Mexico border. BHC goals include the institutionalization of a domestic focus on border health that can transcend political change and the creation of an effective venue for binational discussion to address key public health issues at the border. The roles of BHC are to facilitate identification, study and research; be a catalyst to raise awareness; promote sustainable partnerships for action; and serve as an information portal for community partners. BHC strategic priorities include infectious diseases, degenerative chronic diseases, maternal and child health, accidents, and mental health. Transversal priorities include access to care, research, and strategic planning.

Activities proposed in the 2015-2016 Cooperative Agreement Work Plan include: community-based healthy border initiatives, Leaders Across Borders Program, Border Binational Reproductive Health Work Group, U.S.-Mexico Border Tuberculosis Initiative, Border Binational Obesity Prevention Workshop, Healthy Border 2020 community grants, Child and Adolescent Overweight and Obesity Prevention Initiative, Teen Pregnancy Prevention Initiative, and the Binational Border Health Consortium of the Californias Strategic Plan.

Healthy Border 2020 Initiative

Robert Guerrero, MBA, Chief, Office of Border Health, Arizona Department of Health Services

Healthy Border 2020 is a binational initiative of the U.S.-Mexico Border Health Commission (BHC) that focuses on prevalent public health issues in binational border populations. Healthy Border 2020 priorities include: chronic and degenerative diseases; infectious diseases; maternal and child health; mental health and addiction; and injury prevention. The primary objective of the Healthy Border 2020 Initiative is to provide a framework to present public health goals and necessary actions to improve health on both sides of the border. The Initiative establishes the Commission’s border regional agenda on health promotion and disease prevention and comprises measurable and binationally relevant goals and objectives that bring together key regional partners to develop and support policy change and culturally appropriate, evidence-based interventions.

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Principle health problems in the border region can be categorized into the following topics: chronic and degenerative disease, infectious disease, maternal and child health, mental health disorders, and injury prevention. The Healthy Border 2020 Initiative raises objectives for each of these health problems, stated in terms of reducing mortality and morbidity, improving access to services, promoting prevention and early detection. In the case of some priorities and topics, the objectives are different for the United States and for Mexico due to differences in the type of information and data generation systems between the two countries.

The objectives of the Healthy Border 2020 Initiative are measurable and binationally relevant. The Initiative seeks to generate greater awareness of the health priorities in the region and the associated social determinants, as well as opportunities for binational cooperation and collaboration. It also seeks the creation of strategies for health promotion.

The Binational Technical Workgroup offers recommended actions that the BHC can undertake in line with its mission and in collaboration with multiple community-based stakeholders. The recommended actions can be incorporated into existing initiatives, such as: health promotion, disease prevention, health research, education and training, other activities related to Binational Health Week, and other border-wide prevention campaigns.

To assess the progress of actions undertaken by the BHC and measure the impact of the Healthy Border 2020 Initiative, a list of indicators and areas was created associated with measuring the BHC's impact towards achieving Healthy Border 2020 objectives. Healthy Border 2020 calls for a commitment of resources for creating a binational surveillance Public Health Observatory that maintains a dedicated binational technical workgroup tasked with developing a survey instrument designed to measure the primary social determinants related to Healthy Border 2020 priorities.

Environmental Health in California-Baja California and Arizona-Sonora

Evaluation of Environmental Health Status along the Arizona-Sonora Border

Aminata Kilungo, PhD, Director of Research and Development, Sonora Environmental Research Institute, Inc.

The Sonora Environmental Research Institute, Inc. (SERI) is a nonprofit organization that works to address environmental justice issues in Arizona, northern Mexico, and the U.S.-Mexico border region. SERI received a Border 2020 grant to conduct an evaluation of environmental health status along the Arizona-Sonora border. The report will be used to identify data gaps, inform decision making and policies, and guide future research.

Preliminary findings noted an overall decrease in blood lead levels in children living in all four Arizona counties in the border region between 2005 and 2015; however, data were based on low

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screening rates (around 20%) and the state has plans to increase the screening rate to 85%. The preliminary findings also noted that approximately 4 percent of children attending schools in the Arizona border region are served by a water supply with at least one Safe Drinking Water Act violation. Additional information is needed to assess those served by private wells (5 percent of the population). Work continues to evaluate information on additional areas of concern including mercury, pesticides poisoning, air quality, asthma rates, and asthma hospitalizations in the border regions of Arizona and Sonora. The final report is anticipated by October 2016.

Conducting a comprehensive analysis of environmental health status in the Arizona-Sonora border region is hindered by several gaps. Not all environmental health indicators are monitored throughout the region, especially in Mexico. When data are available for communities in Mexico, it may be difficult to access the data, particularly if the data are not available online. To overcome these challenges, it is recommended that binational agencies work in partnership with other organizations to improve data sharing platforms.

Assessment of Environmental Health Data for the California-Baja California Border

Dan Meltzer, MPH, Research Associate, California Environmental Health Tracking Program.

The California Environmental Health Tracking Program (CEHTP) is a part of the National Environmental Health Tracking Program, supported by the Centers for Disease Control and Prevention. The mission of the CEHTP is to provide data and information on diseases and environmental threats to inform environmental and public health programs, research, and policies. The CEHTP was awarded a Border 2020 grant to conduct an assessment of environmental health data for the California-Baja California (CA-BC) border. About 6 million people currently live in the CA-BC border region, and 9 million are expected by 2030.

The border is one interconnected set of people and communities. Binational data coordination can help facilitate public health action that is responsive to local community needs and concerns. Data are most actionable when standardized metrics are used. Good data collection allows for review of environmental and health trends over time and meaningful data comparisons.

The environmental health data assessment covered several environmental and public health topics: air quality, climate change, pesticide use, traffic, drinking water, asthma, cancer, valley fever, heat-related illness, and other topics. The assessment found that asthma severely impacts CA-BC residents. In addition, valley fever continues to pose a risk as the climate changes. Imperial County has a very high rate of heat-related illnesses. The rate of heat-related emergency department visits was consistently about 5-8 times higher in Imperial County compared to San Diego County or the rest of California. Cardiovascular disease is also elevated in Imperial County. The prevalence of children with elevated blood lead levels in Imperial County is nearly two-folds higher than state averages. Levels in San Diego County are slightly elevated compared to state averages.

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The assessment also found that several data gaps continue to exist. For example, valley fever, pesticide illness, and pesticide exposure are likely underreported. Birth defects are not systematically reported throughout the border region. Pesticide use on buildings and structures is also not systematically reported.

The report offers recommendations to overcome these data gaps: 1) create consistent data standards and definitions of terms to allow for meaningful data comparisons over time and between geographic areas; 2) make data publicly available; 3) increase data documentation; 4) increase data relevance; and 5) create a single centralized data system. The full [report](#) is available on the EPA website.

Industrial Pollution in the Border Region

Taking Stock Online: Exploring Pollutant Releases and Transfers in Border Regions

Orlando Cabrera-Rivera, MS, Program Manager, Environmental Quality and Climate Change, Commission for Environmental Cooperation

The Commission for Environmental Cooperation (CEC) was established by Canada, Mexico, and the United States through the North American Agreement for Environmental Cooperation. The CEC aims to facilitate collaboration and public participation to foster conservation, protection, and enhancement of the North American environment for the benefit of present and future generations, in the context of increasing economic, trade, and social links among Canada, Mexico, and the United States. All three countries have a Pollutant Release and Transfer Register (PRTR) to track pollutants that are released from facilities to air, water, land, and injected underground, as well as transferred offsite for recycling, treatment, or disposal.

The CEC's North American PRTR project compiles and disseminates data from all three national PRTRs and provides public access to the data through the CEC's Taking Stock Online tool. This tool can be particularly helpful when assessing the generation and fate of pollutants in border areas. The online tool allows users to search for PRTR data by facility, industry, country, state/province/territory, pollutant and pollutant type. Furthermore, users can download their search results in different file formats (i.e., Excel, CSV, KML, and KMZ).

In addition to the online tool, the CEC's latest Taking Stock report summarizes PRTR data from 2005 through 2010, and provides details about specific pollutants, how they were managed, and the sectors and facilities reporting them over time and across North America. Other resources that may be of interest to those concerned with children's environmental health issues in the border region include the North American Environmental Atlas and CEC publications on environmental health in North America.

Environmental Management of Pediatric Asthma

Environmental Management of Pediatric Asthma: Guidelines for Health Care Providers

James Seltzer, MD, Visiting Professor, Division of Occupational and Environmental Medicine, University of California, Irvine, Regional Consultant, Western States PEHSU; Indoor Hygienic Technologies Corporation

Pediatric asthma is the most prevalent chronic medical condition in childhood, with poor and minority children suffering a greater burden of the disease. Low-income children are more likely to have increased morbidity from asthma and less likely to receive preventive care. Furthermore, African American and Latino children exhibit worse asthma status than comparable white children. African American children are more than two times as likely to be hospitalized and more than three times as likely to die from asthma.

Results from the National Survey on Environmental Management of Asthma show that less than 30% of people with asthma are taking all of the essential actions recommended to reduce their exposure to indoor environmental asthma triggers. People with written asthma action plans are more likely to take actions to reduce exposure to environmental asthma triggers, but only 30% of people with asthma have a written asthma action plan.

According to the National Asthma Education and Prevention Program, inhaled corticosteroids are the most effective medications for persistent asthma. Patients should use a written asthma action plan that incorporates peak flow monitoring. They should also assess asthma severity, assess and monitor asthma control, schedule periodic asthma visits, and control environmental exposures.

Sufficient evidence exists demonstrating the causal relationship between asthma exacerbation and triggers such as cats, cockroaches, environmental tobacco smoke (ETS), and house dust mites. There is sufficient evidence of an association with dogs, mold, rhinovirus, and NO₂ and NO_x.

Multi-trigger interventions have been shown to result in fewer days with symptoms and declines in allergens in the home. Environmental history forms can help to identify triggers and focus intervention activities. Environmental trigger controls may include: dust mite control (i.e., allergen impermeable casings for bedding, removal of carpets, use of a HEPA vacuum); use of a HEPA air cleaner and HEPA vacuum for animal allergens; mold and moisture control; integrated pest management to control or eliminate rodent and cockroach allergens (e.g., filling of holes, vacuuming and cleaning, storing food and trash in closed containers, low-toxicity pesticides, and traps); and prohibiting smoking in homes and cars.

In addition to indoor triggers, outdoor air pollution can also exacerbate asthma. The Southern California Children's Health Study found that asthma and wheeze were strongly associated with

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residential proximity to a major road. Reduction in outdoor air pollutants (e.g., ozone, PM₁₀, CO, NO₂, and SO₂) observed during the 1996 Atlanta Olympics, following increased public transportation, closing of streets to private cars, altering of downtown delivery schedules, and increased telecommuting and work schedule flexibility, was correlated with significant reductions (>40%) in the number of asthma claims per day.

The National Environmental Education Foundation developed the *Environmental Management of Pediatric Asthma: Guidelines for Health Care Providers* to help health care providers integrate environmental management of asthma into pediatric care. The guidelines include an environmental history form, environmental intervention guidelines, and sample patient fliers and references.

Reducing Exposure to Toxics in Personal Care Products

Reduction Exposure to Toxics in Personal Care Products: Less is More

Nancy Palate, Health Educator, Environmental Health Investigations Branch, California Department of Public Health

A cosmetic is a product that is intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance. Cosmetics include shampoo, perfumes, lipsticks, deodorants, makeup, and any other substance that is intended for a cosmetic use.

In the U.S., the Food and Drug Administration (FDA) regulates cosmetics; however, the FDA does not have a list of required tests for particular cosmetic products or ingredients. The manufacturer or distributor is legally responsible for ensuring the safety of the product on the market. Cosmetics may contain a variety of chemicals, such as parabens, heavy metals, and phthalates. All ingredients may not be listed on a product label because companies cannot be forced to disclose ingredients considered trade secrets. For example, fragrance ingredients are typically not listed individually on labels because the fragrance ingredients are likely to be trade secrets.

In order to reduce exposure to toxic chemicals that may be found in cosmetics, one can use cosmetics less often, use a smaller amount of cosmetics, and/or use less toxic products. There are online resources available to search for safer products, such as: the California Safe Cosmetics Program Product Database, the Environmental Working Group's Skin Deep® Cosmetics Database, and the Think Dirty® mobile app.

Consumers should avoid purchasing unlabeled or homemade cosmetics because such products may contain highly toxic substances. Some families in California have suffered from mercury poisoning after family members used an unlabeled, homemade skin lightening cream imported from Mexico.

Lead and Mercury Poisoning: Clinical Management and Action to Eliminate Exposures

Lead and Mercury (...and Fish)

Cyrus Rangan, MD, FAAP, FACMT, Director, Bureau of Toxicology and Environmental Assessment, Los Angeles County Department of Public Health

Removing the patient from the source of poisoning is the best and most significant part of treatment in confirmed cases of lead and mercury poisoning. The best approach for estimating total body burden of heavy metals (except lead and organic mercury) is 24-hour urine collection for quantitative analysis. Whole blood levels can be used to estimate lead and organic mercury levels in the body.

Although efforts have been made to reduce lead poisoning, there remain several sources of lead exposure. Common sources of childhood lead exposure include paint chips, dirt, folk remedies, candy, pottery, and makeup. Non-Hispanic black and Mexican-American children living in inner-city, old, dilapidated buildings are at the highest risk for lead poisoning. In adults, sources include inadvertent occupational exposure, pottery, and folk remedies.

Lead can affect almost every organ system and can result in birth defects. Symptoms of lead exposure vary. Among adults, symptoms range from hypertension at lower blood lead levels (~10 µg/dL) to lethargy, seizures, and encephalopathy at higher levels (~100 µg/dL). Among children, symptoms range from impaired IQ and growth at lower blood lead levels (~10 µg/dL) to encephalopathy, anemia, nephropathy, and seizures at higher levels (~100 µg/dL). In general, a drop of five points in IQ is observed for every 10 µg/dL increase in blood lead level. Treatment options for lead exposure include removal from the source(s) of exposure, nutritional supplementation, whole bowel irrigation for retained metal, and chelation if indicated (BAL, EDTA, DMSA). The treatment regimen depends on the blood lead level observed in the patient.

Mercury is ubiquitous in the environment and can be found in three forms—elemental, inorganic, and organic. Sources of elemental mercury include thermometers, paints, ceramics, batteries, and amalgams. Inorganic mercury compounds can be found in photography, explosives, inking, and cosmetics. Sources of organic mercury compounds include bactericides, fungicides, fish, farming, and embalming preparations.

Mercury can also affect almost every organ system and lead to birth defects. Symptoms of exposure to elemental mercury include acute pneumonitis, corrosive bronchitis, and embolism, and may be preceded by stomatitis, colitis, lethargy, confusion, fever/chills, dyspnea, and metallic taste. Exposure to elemental mercury may be associated with the chronic triad of tremor, gingivitis, and erethism. Symptoms of exposure to inorganic mercury include acute corrosion and death, shock, electrolyte imbalances, or protein loss. Chronic effects of inorganic mercury

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exposure are similar to elemental mercury exposure including long-term behavior impairment, subclinical psychomotor and neuromuscular changes, and renal effects resembling chronic renal failure. Symptoms of exposure to organic mercury may take weeks to manifest and may include fatigue; tremors; weakness in the hands, face, and legs; numbness in the mouth; deafness; tunnel vision; poor concentration/memory; emotional lability; and depression. Treatment includes removal from the source of exposure; whole bowel irrigation for retained metal (needs to be performed early); supportive care for fluid/electrolyte disturbances, renal failure, and pulmonary injury; and chelation, if indicated (BAL, EDTA).

One of the most significant sources of exposure to organic mercury compounds, particularly methyl mercury, is seafood. Fish is an excellent source of protein and omega-3 fatty acids which can help reduce risk of disease and are important for brain and vision development. Consumers should be aware of seafood advisories as fish can become contaminated with mercury, DDT, PCBs, and other chemicals if water bodies are polluted with these substances. Shark, swordfish, tilefish, and king mackerel contain high mercury levels and should not be eaten. Contaminants can build up in the fatty parts of the fish, so only the skinless fillet of the fish should be eaten.

Community-Based Projects that Promote Children's Environmental Health

SERI Community-Based Childcare Program: Extended Healthy Homes Program

Aminata Kilungo, PhD, Director of Research and Development, Sonora Environmental Research Institute, Inc.

The Sonora Environmental Research Institute, Inc. (SERI), a nonprofit organization established in 1994, works to address environmental justice issues in Arizona, northern Mexico, and the U.S.-Mexico border region. SERI has implemented several community-based projects, including: conducting fire inspections; serving as the community liaison for the City of Tucson Lead Hazard Control Program; planting trees and installing rainwater harvesting systems; conducting air and water quality research; and conducting healthy homes and childcare assessments and interventions.

The SERI Community-Based Childcare Program is an expansion of SERI's Healthy Homes Program. The goals of the childcare program were to create a new childcare education, assessment, and inspection program to address environmental, health, and safety hazards in home-based and small childcare facilities. Initial childcare center visits included an assessment for 29 hazards (i.e., mold, carbon monoxide, lead, food safety, etc.). Based on the childcare inspection, SERI provided recommendations to address the hazards, resources and funds for interventions, and referrals to other agencies for assistance to address the identified hazards. SERI conducted 232 assessments of childcare facilities and the work is still ongoing. Many of the childcare facilities had lead, excess heat, fire, and intruder hazards. SERI was able to support

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several interventions, including the installation of smoke alarms, drawer and cabinet locks, outlet plugs and plates, door locks, and carbon monoxide alarms. In addition to the assessments, SERI also implemented a childcare recognition program to recognize childcare providers who fixed hazards and conduct annual fire inspections.

The success of SERI's Community-Based Childcare Program depended on many factors. SERI was able to leverage resources of an existing program. In addition, SERI's promotoras played a significant role in the successful implementation of the program. Furthermore, SERI had strong partnerships with other organizations that could assist with training or referrals.

Comite Civico del Valle, Inc: Informed People Create Healthy Communities

Luis Olmedo, Executive Director, Comite Civico del Valle, Inc.

The mission of Comite Civico Valle, Inc. (CCV) is to improve access to healthcare, information and prevention programs to low-income, underrepresented and underserved community members in Imperial County by way of education, capacity building, and civic participation. CCV has several ongoing projects that examine and address environmental justice issues in Imperial County.

CCV's four-year air monitoring project is a collaborative effort that CCV is undertaking with the California Environmental Health Tracking Program and University of Washington. The project established a community-based air monitoring network of 40 low-cost, portable air quality monitors that measure particulate matter. A community steering committee guides the project and prioritized placement of monitors in impacted neighborhoods. In addition, 45 residents participated in a hazard mapping activity to help inform placement. A crowd-sourcing mapping tool was designed by and for local residents to access monitoring data with a mobile device. The data will be used to develop and implement community action strategies to address air pollution.

CCV is collaborating with Clinicas de Salud del Pueblo, Inc. and San Diego State University Research Foundation to implement the Respira Sano Study, which aims to reduce the burden of uncontrolled asthma in the lives of Latino children and their families in Imperial County. Study partners will recruit 400 children (ages 6 – 17 years) with asthma and their families. The home intervention component employs community health workers to help families identify asthma triggers in homes and strategies to eliminate triggers. The communications campaign uses digital media, community events, and community presentations to bring resources and information about childhood asthma to the public. In addition, the School Flag Program notifies students, school staff, and the community of the outdoor air quality forecast.

CCV developed and continues working on the IVAN environmental monitoring system, which connects the community with staff at agencies to help solve local environmental problems. Community members can access IVAN through their computer, tablet, or smart phone to report concerns. The IVAN system has been expanded to several other California communities.

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CCV's community advocacy work includes citizen science, workshops for community members, participating in the EJ enforcement task force, hosting the Environmental Health Leadership Summit, and civic engagement. CCV is a partner in the EPA's Making a Visible Difference in Communities Initiative and also worked on AB 1059 and AB 1071. CCV has leveraged community participatory research, government resources, technology, and investment in long-term projects to help achieve its mission.

Environmental Health Coalition: Empowering People. Organizing Communities. Achieving Justice.

Diane Takvorian, MSW, Executive Director, Environmental Health Coalition

The Environmental Health Coalition (EHC) is dedicated to achieving environmental and social justice. EHC believes that justice is accomplished by empowered communities acting together to make social change. EHC organizes and advocates to protect public health and the environment threatened by toxic pollution.

EHC has worked with many communities in San Diego County and the City of Tijuana, including City Heights, Barrio Logan, Logan Heights, Sherman Heights, West National City, Colonia Chilpancingo, Colonia Murua, and Nueva Esperanza. Many of the communities EHC works with are burdened with childhood asthma, diesel emissions, and other environmental stressors. Furthermore, communities are also burdened with social stressors, such as poverty and linguistic isolation.

In most of the neighborhoods EHC works in, industrial facilities and highways are located adjacent to homes, putting residents at risk of being exposed to a variety of pollutants. Furthermore, this type of land use can be dangerous if fires, explosions, or accidental chemical releases occur at facilities. EHC partnered with residents to mitigate this land use problem in West National City. EHC's National City Community Action Team participated in EHC's Salud Ambiental, Líderes Tomando Acción/Environmental Health, Leaders Taking Action (SALTA) training, which is a leadership training program that provides skills on organizing, advocacy, power, and media relations. The National City Community Action Team worked with a professional land-use planner to develop a revised zoning plan separating incompatible land uses. Furthermore the team held meetings, participated in community fairs, and conducted door-to-door outreach to gain support. The Community Action Team advocated for land use changes such as moving polluters to an industrial zone and having a 500-ft. buffer between freeways and sensitive land uses. They also advocated for affordable housing and building height limits.

As a result of EHC's community-based work, National City officials adopted a new Community Plan with revised zoning that separates polluters and residences. They also adopted an amortization ordinance that gives the city the right to require non-conforming uses (i.e., industrial facilities) to leave the neighborhood or relocate after a reasonable amount of time. The ordinance sets up a process for relocating prioritized industries to an industrial zone. By building

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capacity within communities to organize and advocate for healthier neighborhoods, EHC and its partners were able to overcome injustices and affect long-term positive changes.

Basics of Applying to Federal Grant Programs

Basics of Applying to Federal Grant Programs

Jeremy Bauer, MS, Regional Coordinator, Border Environmental Health, U.S. Environmental Protection Agency

Andrea Manion, MNA, Environmental Protection Specialist, U.S. Environmental Protection Agency

Information on available grants can be found at www.grants.gov. EPA grant applicants should be familiar with the [EPA's competition policy](#), which explains that the EPA can answer questions and clarify language in solicitations, but cannot write proposals for applicants, review or comment on draft proposals, nor provide a competitive advantage to any applicant.

Grant applicants should determine viability of pursuing a grant prior to applying as this can help applicants conserve resources. Applicants should confirm that they have enough time, capability, budget, and resources to successfully implement the grant project. The ideal grant solicitations to pursue are those that the applicant is aware of in advance (i.e., the applicant had time to prepare and gather required materials rather than scramble at the last minute) and those coming from organizations that are aware of and have a positive opinion of the applicant organization's work. Organizations should also consider the size of the grant award and the likelihood of winning. If an organization decides to pursue a grant application, they should closely follow the instructions in the solicitation.

In general, strong grant proposals answer questions such as: What is the general problem to be addressed by the project? What type of community improvement will result from the grant project? Who will benefit? Why/how does the environmental or health issue occur? What change is needed and what project activity will help affect change? In addition, strong proposals are clear, concise, and explain how the grant project is aligned with the goals stated in the solicitation or request for proposals.

Common proposal components include a statement of need, goals and objectives, outputs and outcomes, task descriptions, team description, schedule or timeline, budget, evaluation plan, sustainability plan, and letters of commitment. A good statement of need is usually compelling, clearly explains the problem or need, uses facts to convey who is affected by problem, and explains why the proposed project is a priority. Scope and task descriptions should clarify what is and is not included in the work. They should also align with the solicitation and with the goals, objectives, outputs, and outcomes of the proposed project. Applicants should document assumptions, especially as they relate to the budget. Strong letters of commitment will specify

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what the collaborator or partner will contribute and convinces the reader that the collaborator has the capacity to fulfill its responsibilities and is committed to the success of the proposed project.

It is important to understand the distinctions among goals, objectives, outputs, and outcomes. Goals describe the overall aim(s) of the project, are usually longer term, and are more conceptual and abstract than the objectives. Objectives describe the intermediate results of the project, illustrate how the work plan activities will address the problem, should build capacity of the community, and should be “SMART” (Specific, Measureable, Achievable, Realistic, and Time-bound). Use action verbs for objectives such as: increase, decrease, and reduce. Outputs measure the success of the work plan; they are the results of activities or amount of something produced. Outcomes are the way things turn out, a consequence of the project.

Recognizing Pesticide-Related Illness

Pesticide Poisoning, Residues in the Indoor Environment, Assessment, and Health Effects

Cyrus Rangan, MD, FAAP, FACMT, Director, Bureau of Toxicology and Environmental Assessment, County of Los Angeles Department of Public Health

Pesticides are substances intended for preventing, destroying, repelling, or mitigating any pest. Pesticides commonly used in residential settings include: organophosphate insecticides (OPs), N-methylcarbamate insecticides, mothballs, and rodenticides.

OPs have been used in both residential and agricultural settings. OPs undergo chemical changes in the indoor and outdoor environment, so residues of both the active ingredient and breakdown products may remain on surfaces. OPs work by attacking the nervous system by inhibiting cholinesterase enzymes; this causes an accumulation of acetylcholinesterase in the nervous system. Excess acetylcholinesterase can lead to abnormal muscle contractions, weakness, paralysis, confusion, disorientation, seizures, gastrointestinal problems, vomiting, and other symptoms. People may be exposed to OPs through inhalation, dermal contact, and ingestion. Children are at greater risk of ingestion because of their hand-to-mouth activity and tendency to place objects in their mouths.

N-methyl carbamate pesticides have also been used in residential and agricultural settings. They are reversible inhibitors of cholinesterase enzymes. There have been cases of cholinergic toxidrome, particularly in children, due to the illegal use of Tres Pasitos. This rodenticide is available in some Latin American countries but is illegal in the U.S. The active ingredient is aldicarb, a very toxic chemical.

Mothballs often contain naphthalene or paradichlorobenzene, and undergo sublimation. Misuse of mothballs and accidental childhood poisonings are very common. People can be exposed to

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naphthalene or paradichlorobenzene by inhaling mothball vapors or accidentally ingesting a mothball. Exposure to naphthalene can lead to oxidative stress, increased susceptibility to hemolysis, airway inflammation, and narcosis. Exposure to paradichlorobenzene can lead to nausea, vomiting, headache, and mucous membrane irritation.

Tetramethylenedisulfotetramine, also known as tetramine or TETS, is an extremely toxic pesticide that has been banned worldwide. It is an odorless, tasteless, and water-soluble white crystalline powder. It unfortunately is still available through illegal channels and has led to poisonings in children and adults.

In general, pesticides have multiple mechanisms of toxicity and some are more potent than others. Pesticide exposure can lead to serious health problems or death. Physicians should be able to recognize toxidromes, clinical signs and symptoms of pesticide poisoning, common exposure scenarios, and high-risk populations. Clinicians should be aware of regulatory and enforcement agencies that can help investigate illegal pesticide use. Furthermore, clinicians should report pesticide illness cases when required.

Biomonitoring, epidemiological, cohort, and other studies are being undertaken to better understand pesticide exposure, body burden, and associated health impacts.

Pesticide Illness Reporting

William Ngai, MD, MPH, Public Health Medical Officer, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency

Pesticides are used in agricultural and non-agricultural settings to control pests and can be classified by chemical groups (e.g., organophosphates, pyrethroids, etc.) or by their target pests (insecticides, herbicides, antimicrobials, etc.). Excessive exposure to pesticides can result in illness and sometimes even death.

California law requires physicians to report any definite or suspected cases of illness or conditions caused by a pesticide. A few reasons why these reports are important include: they can help identify problem pesticides; they can help establish trends in poisonings; and they can assist the State in writing regulations.

Although reporting is legally required, many cases of pesticide illness are not reported for a number of possible reasons including: physicians may not recognize pesticide illness; physicians may not be aware of the reporting requirements or how to report; and some people may seek medical treatment outside the state, such as in Mexico.

Pesticide illness reports can be classified as to whether they were due to an agricultural or non-agricultural use of the pesticide. From 2009 – 2013, more pesticide illness reports were due to non-agricultural pesticide use statewide, which was the case in San Diego County. Imperial

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County, however, had more cases of pesticide illness due to agricultural use during this time period. In 2013, 627 of the 1116 reports statewide were occupational cases, including fieldworkers (266) and applicators (120). In that year, 131 of 685 non-agricultural cases involved children younger than 18 years old of which 44% were exposed through ingestion of a pesticide.

Physicians must report pesticide illnesses within 24 hours using one of the following methods:

1. Calling or faxing the local health officer;
2. Calling the California Poison Control Center;
3. Using the Confidential Morbidity Report; or
4. Using the California Reportable Disease Information Exchange.

(There are additional reporting requirements for occupational cases of pesticide illness.)

Information needed in the report includes: whether others were involved and how to locate them; the name of the pesticide and/or active ingredient; the patient's activity at the time of exposure and how the patient was exposed; and the severity of the illness.

These reports are directed to the local health officer (or the health officer's designated dept.) who will "immediately" notify the county agricultural commissioner to investigate the cases. In addition, the health officer will send a pesticide illness report to the California Department of Pesticide Regulation, Department of Industrial Relations, and the Office of Environmental Health Hazard Assessment within seven days. The health officer and the State departments can assist the county agricultural commissioner in the investigations, if needed.

Key Provisions to the Worker Protection Standard

Fabiola Estrada, MS, Project Officer/Life Scientist, U.S. Environmental Protection Agency

The EPA revised the Worker Protection Standard (WPS) in September 2015 to reduce occupational pesticide exposure and incidents of related illness among agricultural workers (workers) and pesticide handlers (handlers) covered by the rule, and to protect bystanders and others from exposure to agricultural pesticide use. These revisions will afford employees under the WPS with occupational protections comparable to those for workers in other industries covered by the Occupational Health and Safety Act. This presentation provides a summary of the key revisions to the WPS. More detailed information on the revised WPS is available on the EPA [website](#).

The WPS revisions include requirements for training and hazard communication to inform workers and handlers about pesticide safety. Annual training is required for workers and handlers starting in January 2017. Workers must be trained before they enter an area where a pesticide has been used or a restricted-entry interval has been in effect in the past 30 days. Application information and safety data sheets must be displayed in a central location within 24

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hours of the end of an application and before workers enter a treated area. Warning signs must be posted for restricted entry intervals greater than 48 hours for outdoor applications.

Additional protections from potential exposure to pesticides require employers to provide a respirator and fit testing, training, and medical evaluation for any handler required to wear any respirator by the labeling. Handlers and early-entry workers must be at least 18 years old. Furthermore, employers must prohibit entry into treated areas or the application exclusion zone during application.

The WPS revisions also mitigate any pesticide exposures that workers or handlers receive. Employers are required to provide routine decontamination supplies for workers, handlers, and early-entry workers. In addition, eyewash systems for mixers/loaders must be provided if labeling requires protective eyewear. Employers must provide product information, safety data sheets, and information on the circumstances of exposure to treating medical personnel if they request this information. Also, any worker's or handler's designated representative may request access to or a copy of pesticide application and hazard information.

Workers, handlers, and others can report possible pesticide exposures or potential pesticide misuse by contacting their local pesticide authority. In California, one can call their local agricultural commissioner or 1-877-378-5463 to report concerns. In Arizona, one can call the Department of Agriculture at 1-800-423-8876 to report possible exposures or misuse. Healthcare providers in California and Arizona are required to report cases of pesticide-related illness to the state government.

For advice on pesticide poisonings, one can call the Poison Control Center at 1-800-222-1222. For general questions on pests and pesticides, one can contact the National Pesticide Information Center at 1-800-858-7378 or npic.orst.edu.

Climate and Health

U.S.-Mexico Border, Climate Change, and Infectious Diseases

Stanley Maloy, PhD, Dean, College of Sciences; Professor of Biology, San Diego State

The border region is vulnerable to infectious disease due to its arid ecosystem, high biodiversity, overlap with Pacific migratory bird pathways, high human population mobility, and urban development challenges. Development challenges may include contaminated water, close contact between humans and animals, and breeding grounds for vectors. Both drought and flooding affect fresh water supplies, increasing transmission of pathogens like *Salmonella* and rotovirus. Increased rainfall provides more breeding grounds for mosquitos, promoting transmission of diseases. Periodic drought followed by heavy rain often increases rodent populations. Plant-based outbreaks in recent years may have resulted from different factors including irrigation-

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dependent farming and mixing of human, animal, and plant pathogens. Discharge of sewage into the Tijuana River Estuary and Pacific Ocean increases human infections on both sides of the border. Climate change can impact the occurrence of infectious diseases. Increased terrestrial temperature may result in increases in insect vectors. Increased ocean temperature may result in the growth of pathogens. Furthermore, changes in the water cycle may result in flooding and drought (and associated spread of virus) and increase in rodent vectors.

The spread of infectious diseases due to environmental disruption calls for a “One Health” approach that considers the interdependence of environmental health, animal health, and human health. It is a paradigm shift from how we typically approach human health threats—disease surveillance, investigation, and treatment—to a more preventative approach that includes environment, animal, and human disease surveillance, prediction of a potential outbreak, and identification of measures or interventions to prevent the potential outbreak from occurring.

RMSF on the Border: Where Children, Contagion and Climate Converge

Lisa Villarroel, MD, MPH, Medical Director, Epidemiology and Disease Control, Arizona Department of Health Services

Rocky Mountain spotted fever (RMSF) is a severe disease spread by infected ticks. The incidence of RMSF in the United States is increasing, in particular among American Indians for whom the incidence rate is nearly an order of magnitude higher than that of the general population. While the age group most affected by RMSF in the U.S. is 40 - 60 year olds, RMSF primarily affects children in Arizona. In Arizona, RMSF is spread by the brown dog tick, *Rhipicephalus sanguineus*, the most widely distributed tick in the world. A majority of RMSF cases in Arizona happen in communities with a large number of roaming dogs and a lot of ticks. The situation in tribal areas in Arizona and Sonora is exacerbated by several factors including illicit dumping of furniture providing habitats for the tick, a growing population of stray dogs carrying the tick, and poverty. Unlike other ticks that spread RMSF, the brown dog tick can live indoors, outdoors, or near homes where dogs live and children play.

RMSF symptoms start with a fever and headache. A rash may appear 2-5 days after a fever; however, some cases do not get the rash until later in the disease if even at all. Other symptoms include: nausea, vomiting, abdominal pain, muscle pain, lack of appetite, and upper respiratory symptoms. If a patient is treated within the first five days of the disease, survival rates are higher. Without it, survival rates drop as each day passes.

Prevention strategies include: avoiding tick habitats (i.e., trash, furniture, leaf litter, tall grasses, and stacked wood); discouraging unwelcome animals, such as stray dogs, from entering homes or properties; appropriate use of pesticides; integrated pest management; protective clothing; personal tick checks; managing ticks on pets; and removing ticks. Only a comprehensive, multidisciplinary approach is likely to be effective.

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Climate Change Actions

Nancy Palate, Health Educator, Environmental Health Investigations Branch, California Department of Public Health

Taking action on climate change includes reducing our impact to limit further effects and adapting to changes in climate that are already being observed. Actions we can take to reduce further effects on climate can include: reducing energy consumption; buying local products; walking, choosing public transportation, or riding bikes; eating less meat and animal products; sharing and recycling more; reducing the use of plastics; cooking more; limiting food waste and considering vegetable gardening; and choosing renewable energy. Actions we can take to adapt to changes in climate that are already being observed can include: reducing extreme heat in the home; reducing extreme heat in the community; keeping hydrated; dressing kids appropriately; scheduling outdoor activities wisely; monitoring air quality; increasing urban greening; and improving indoor air.

FACILITATED ROUNDTABLE DISCUSSION

The EPA invited symposium attendees to participate in a 3-hour facilitated roundtable discussion after the symposium's closing session. The goal of this discussion was to identify actionable recommendations to help guide future collaborative work to help mitigate environmental public health challenges in the U.S.-Mexico Border region. The intent for hosting the roundtable discussion was not only to get feedback that could help inform the EPA's work, but to also help inform the work of other stakeholders who are committed to improving environmental and public health outcomes in the border region. More than 40 symposium attendees participated in the meeting.

The facilitator invited Jeff Scott, Director of the U.S. EPA Region 9 Land Division, to make opening remarks and kick off the discussion. Mr. Scott welcomed the participants and explained that the EPA has an existing environmental program in the border region, Border 2020. He reminded attendees of the presentation he provided on Border 2020 the day before and that the presentation would be available online. Mr. Scott briefly reviewed the five goals of Border 2020: reduce air pollution; improve access to clean and safe water; promote materials management and clean sites; enhance joint preparedness for environmental response; and enhance compliance assurance and environmental stewardship.

Keeping the goals and objectives of Border 2020 in mind, the roundtable discussion provided a venue for dialogue between EPA and stakeholders and among stakeholders to share ideas for addressing environmental health challenges in the border region. The roundtable provided an opportunity to share with each other approaches that are working and suggestions for improvements.

Participants were divided into three smaller groups to facilitate focused discussion. The discussion topics of the small groups were initially informed by the five goals of Border 2020, but were ultimately revised based on the large group discussion to focus on one of three areas: (1) air quality, (2) water quality, and (3) waste and sanitation. Each small group discussed the ongoing challenges within their topic area, developed a list of recommendations to address these challenges, and presented their recommendations to the larger group. The recommendations presented during the working session are summarized below.

Recommendations

Air Quality

- Build trust between agencies and communities by using the Protocol for Assessing Community Excellence in Environmental Health: Tool for Community Environmental Health Assessment (PACE-EH) in which communities identify their environmental health concerns and community interests are put first.
- When implementing projects, consider communities that are not yet organized around solving environmental health issues in their area.

FACILITATED ROUNDTABLE DISCUSSION

- Install air quality monitors in high risk areas.
- Address the burden of asthma by:
 - o Providing training to doctors, school nurses, hospital administrators, and other healthcare professionals about appropriate chronic care for asthma – not only acute care.
 - o Promoting or expanding no smoking laws.
 - o Supporting school and childcare interventions to address asthma triggers in these settings.
 - o Supporting the School Flag Program by developing school action plans, so school staff know who to call with questions about air quality or asthma issues (i.e., agricultural burning).
 - o Directing funds from Clean Energy Plans to low income areas to fund home interventions.
- Provide educational opportunities that increase empowerment and awareness in communities by:
 - o Supporting promotor trainings on a regular basis.
 - o Supporting binational trainings.
 - o Sharing the results of research studies.
- Address traffic pollution at schools that are located near major roadways, including border crossings, by:
 - o Engaging with the Customs and Border Patrol about the issue.
 - o Supporting a mechanism for schools to purchase air filters.
 - o Sharing concerns with local leaders, such as attending city council meetings.
- Reduce pollution from transportation and other sources by:
 - o Improving fuel efficiency standards for trucks on both sides of the border.
 - o Organizing carpools.
 - o Developing a guidance document for State Energy Efficiency Resource Standards to help them to develop strong standards.

Water Quality

- Assist tribal, rural, and border communities to implement culturally appropriate vector prevention and awareness interventions with children and their families. EPA can help identify tools (prevention approaches) and connect local organizations with each other

FACILITATED ROUNDTABLE DISCUSSION

and potential partners (i.e., schools, childcare, parents, COBs, local government, sanitation, local water companies).

- EPA could facilitate getting more student “boots on the ground.”
 - o Identify priority issues/communities to work with.
 - o Facilitate volunteer opportunities.
 - o Have tribal clinics identify areas of need and how volunteers can help in these areas. Put tribal clinics in the driver’s seat in regards to identifying what help is needed.
- Assess impacts of mine operations on border communities, such as water use and water quality/pollution/discharge.
 - o Use TRI, PRTR, and RETC.
 - o Foster opportunities for academic collaborations to make data accessible to communities.
- Water resources present extraordinary learning opportunities for empowering children. Teach children about arid climates, cleaning up watersheds, and restoring wetlands. EPA can help create partnerships to connect local organizations with schools and communities.
- Reduce pesticide misuse and make families aware of “read the label” to help reduce exposure. Reach out to home health nurses and school nurses.

Waste and Sanitation

- Engage communities in a dialogue so communities can state what their needs are. Give communities ownership; do not simply tell them what to do.
- Promote plastic bag bans in places that have not adopted bans yet.
- Use larger font on product labels so people know how to properly dispose of a product.
- Develop a “Green Border” app that allows the public to report illegal dumping; identifies green/environmentally-friendly businesses; and shows where to properly dispose of e-waste, expired medicine, batteries, and other household hazardous waste.
- Use apps to find environmentally-friendly businesses.
- Increase collection of old medications.
- Provide more bulk waste pick up.
- Update EPA websites with lists of recyclers so people know where to go to recycle items.
- Organize volunteer clean-up activities in Mexico during Binational Health Week.

FACILITATED ROUNDTABLE DISCUSSION

- Promote the Brownfields Grant Program in communities that may be unaware of the program.
- Support better tracking of hazardous waste crossing the border.
- Make information on oil and gas exploration and fracking waste, and where this waste is going, publically accessible.
- Address flash flooding that could carry wastes, chemicals, and trash.
- Provide information on what to do about e-waste, household waste, and other (solid) waste.
- Duplicate the Tijuana airport crossing in other parts of the border region to help facilitate binational meetings.
- Bring cap and trade money to local communities to support sustainability projects.
- Provide more funding for promotores to provide education to communities about reducing waste.
- Add classes to the WIC Program to educate women about gardening, recycling, and hazardous waste.
- Educate young women about hazards in the workplace. One way to accomplish this is to provide presentations to high school students.
- Provide education to children and parents about recycling and disposal of old medications.
- Conduct educational campaigns at schools.
- Meet with maquiladora associations to discuss health education for their employees.
- Provide information on how laws are enforced.

APPENDICES

- A. Symposium Agenda
- B. Speaker Bios
- C. Welcome Note
- D. Press Release

SYMPOSIUM AGENDA

APPENDIX A

Protecting Children's Environmental Health in the U.S.-Mexico Border Region Symposium Agenda

January 27, 2016

8:00 – 9:00 a.m.	Registration
9:00 – 9:40 a.m.	<p>Opening Remarks and Keynote Coral Reef Room</p> <p style="text-align: center;"><i>Jared Blumenfeld, Regional Administrator, U.S. Environmental Protection Agency</i></p> <p style="text-align: center;"><i>Ruth Etzel, MD, PhD, Director, Office of Children's Health Protection, U.S. Environmental Protection Agency</i></p>
9:40 – 10:30 a.m.	<p>U.S.-Mexico Border Initiatives to Address Environmental and Public Health Challenges Coral Reef Room</p> <p style="text-align: center;"><i>Jeff Scott, MPP, Region 9 Land Division Director, U.S. Environmental Protection Agency</i></p> <p style="text-align: center;"><i>Robert Guerrero, MBA, Chief, Office of Border Health, Arizona Department of Health Services</i></p> <p>This session will discuss the Border 2020 Program and Healthy Border 2020 Initiative, both of which engage multiple agencies and stakeholders on both sides of the U.S.-Mexico border to address environmental and public health challenges.</p>
10:30 – 10:40 a.m.	Break
10:40 – 12:00 p.m.	<p>Environmental Health in California-Baja California and Arizona-Sonora Coral Reef Room</p> <p style="text-align: center;"><i>Aminata Kilungo, PhD, Director of Research and Development, Sonora Environmental Research Institute, Inc.</i></p> <p style="text-align: center;"><i>Dan Meltzer, MPH, Research Associate, California Environmental Health Tracking Program</i></p> <p>Presenters will provide a summary of environmental health assessments conducted in the California-Baja California and Arizona-Sonora border regions. The California Environmental Health Tracking Program completed an environmental health data assessment of the California-Baja California region in 2015. The Sonora Environmental Research Institute is conducting an environmental health data assessment of the Arizona-Sonora region. Speakers from both organizations will present their findings and offer recommendations for resolving data gaps in order to improve environmental health surveillance in border communities.</p>
12:00 – 1:00 p.m.	Lunch and poster session
1:00 – 2:00 p.m.	<p>Concurrent Sessions</p> <p>A1: Industrial Pollution in the Border Region Coral Reef Room</p> <p style="text-align: center;"><i>Orlando Cabrera-Rivera, MS, Program Manager, Environmental Quality and Climate Change, Commission for Environmental Cooperation</i></p> <p>This session will present information resources and tools to explore reported industrial pollutant releases in border regions. Communities in these areas are in a unique situation because their local environment and public health could be affected by hazardous emissions from industrial facilities on either side of the border. Pollutant Release and Transfer Registers (PRTR) provide information on the amounts of pollutants released from facilities to the environment on-site (air, water, land, and injected underground), as well as transferred off-site for recycling, treatment or</p>

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disposal. PRTR data can serve as an effective tool in tracking and assessing the generation, release, and fate of industrial toxic contaminants over time, and their potential impact on human health and the environment. The Commission for Environmental Cooperation’s (CEC) [Taking Stock Online](#) compiles and disseminates the latest data from North America’s three PRTR programs. It features an integrated, multi-year database covering over 30,000 industrial facilities and 500 substances from about 100 major industrial sectors that report to the PRTRs of Canada, Mexico and the United States. This tool can help communities explore a range of important questions related to environmental pollution, such as: What kinds of pollutants are emitted? What are the current sources of pollutants nearby? How much pollution is emitted? What are the potential associated health risks? The session will review recent data on pollutant releases in the California-Baja California and Arizona-Sonora regions and explain how to access these data.

Participants are encouraged to bring their laptop or tablet if they are interested to follow along with the live demonstration of the CEC’s online tool, Taking Stock Online.

A2: Environmental Management of Pediatric Asthma

Harbor Room

James Seltzer, MD, Visiting Professor, Division of Occupational and Environmental Medicine, University of California, Irvine; Regional Consultant, Western States PEHSU; Indoor Hygienic Technologies Corporation

This session will present information on how to integrate environmental management of asthma into pediatric health care. Participants will learn about indoor and outdoor environmental asthma triggers, how to take an environmental history of asthma for patients, and how to counsel patients on interventions that reduce or eliminate exposure to environmental asthma triggers. The presenter will explain what resources are available for providers and patients to learn more about environmental asthma triggers.

2:00 – 2:10 p.m.

Break

2:10 – 3:10 p.m.

Concurrent Sessions

B1: Reducing Exposure to Toxics in Personal Care Products

Harbor Room

Nancy Palate, Health Educator, Environmental Health Investigations Branch, California Department of Public Health

This session will present information on toxic chemicals that are commonly found in personal care products, such as cosmetics, skin creams, and fragrances. The presenter will provide information on how these compounds may influence health. The presenter will provide practical information on how to reduce exposure to these compounds, such as what to look for on product labels and what resources are available to search for products that do not contain these compounds.

B2: Lead and Mercury Poisoning: Clinical Management and Action to Eliminate Exposures

Coral Reef Room

Cyrus Rangan, MD, FAAP, FACMT, Director, Bureau of Toxicology and Environmental Assessment, County of Los Angeles Department of Public Health

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	<p>This session will present information on the signs and symptoms of lead and mercury poisoning and appropriate interventions. The presenter will explain the common sources of lead and mercury for children, adolescents and pregnant women in the border region. The presenter will discuss the importance of childhood blood lead testing, the signs and symptoms of lead and mercury poisoning, and the appropriate use of chelation therapy. The presenter will provide an overview of relevant environmental and public health agencies that can be consulted if assistance is needed to help patients and their caregivers eliminate lead or mercury sources.</p>
3:10 – 3:20 p.m.	Break
3:20 – 5 p.m.	<p>Community-Based Projects that Promote Children’s Environmental Health Coral Reef Room</p> <p style="text-align: center;"><i>Aminata Kilungo, PhD, Director of Research and Development, Sonora Environmental Research Institute, Inc.</i></p> <p style="text-align: center;"><i>Luis Olmedo, Executive Director, Comite Civico del Valle, Inc.</i></p> <p style="text-align: center;"><i>Diane Takvorian, MSW, Executive Director, Environmental Health Coalition</i></p> <p>This plenary session will highlight actions that community organizations have undertaken to address children’s environmental health risks in border communities. Presenters will explain the goals and successes of their projects, and how their projects reduced environmental health risks to children. Presenters will explain the keys to their success and lessons learned.</p>
5 – 6 p.m.	No-Host Networking Session (optional)

January 28, 2016

8:00 – 9:00 a.m.	Registration and poster session
9:00 – 10:30 a.m.	<p>Concurrent Sessions</p> <p>C1: Basics of Applying to Federal Grant Programs Harbor Room</p> <p style="text-align: center;"><i>Jeremy Bauer, MS, Regional Coordinator, Border Environmental Health, U.S. Environmental Protection Agency</i></p> <p style="text-align: center;"><i>Andrea Manion, MNA, Environmental Protection Specialist, U.S. Environmental Protection Agency</i></p> <p>This session will serve as a grant writing workshop. Class discussion and handouts will help participants understand best practices in responding to federal funding announcements. Presenters will walk participants through a class exercise to write specific and measurable project objectives. Presenters will also provide a general overview of federal grant programs that participants may pursue in support of environmental and public health projects in the border region.</p>

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	<p>C2: Recognizing Pesticide-Related Illness Coral Reef Room</p> <p><i>Cyrus Rangan, MD, FAAP, FACMT, Director, Bureau of Toxicology and Environmental Assessment, County of Los Angeles Department of Public Health</i></p> <p><i>William Ngai, MD, MPH, Public Health Medical Officer, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency</i></p> <p><i>Fabiola Estrada, MS, Project Officer/Life Scientist, U.S. Environmental Protection Agency</i></p> <p>During this concurrent session, presenters will explain how to recognize and manage pesticide poisonings and where to report poisonings. Presenters will also discuss current research on how prenatal and childhood exposures to pesticides may influence children's health and development. Further, there will be a discussion of the revised worker protection standard and resources that providers or their patients could consult about pesticide exposure.</p>
<p>10:30 – 10:40 a.m.</p>	<p>Break</p>
<p>10:40 – 12:00 p.m.</p>	<p>Climate and Health Coral Reef Room</p> <p><i>Stanley Maloy, PhD, Dean, College of Sciences; Professor of Biology, San Diego State University</i></p> <p><i>Lisa Villarroel, MD, MPH, Medical Director, Epidemiology and Disease Control, Arizona Department of Health Services</i></p> <p><i>Nancy Palate, Health Educator, Environmental Health Investigations Branch, California Department of Public Health</i></p> <p>This session will discuss how climate can affect children's health in the border region. Presentations will cover heat-related illness, respiratory conditions, and infectious diseases. Presenters will explain how the occurrence of these health conditions may be affected by climate. This session will also offer recommendations for how to protect children from the impacts of a changing climate.</p>
<p>12:00 – 12:30 p.m.</p>	<p>Closing Session Coral Reef Room</p> <p><i>Jeff Scott, MPP, Region 9 Land Division Director, U.S. Environmental Protection Agency</i></p> <p><i>Steve Vargo, Associate Director, Region 6 Multimedia Planning and Permitting Division, U.S. Environmental Protection Agency</i></p>

Roundtable Discussion, January 28, 2016, 1 – 4 p.m.

Please join us for a facilitated roundtable discussion after the symposium's closing session. The main objective of this discussion is to develop a set of actionable recommendations that can guide future collaborative work to protect children from environmental health risks in the U.S.-Mexico Border Region. Using the presentations and discussions from the symposium as a basis, participants will discuss ongoing challenges and opportunities in communities within the border region. (Please note that participation in this discussion is not required for obtaining continuing education credits.)

The materials and opinions presented by non-federal speakers are for informational purposes only and are not products of the U.S. Environmental Protection Agency (EPA) or of the United States Government. These presentations are not intended to imply an EPA endorsement or sanction of these non-federal presenters, their organizations, materials, or the opinions they express.

SPEAKER BIOS

APPENDIX B

Protecting Children's Environmental Health in the U.S.-Mexico Border Region

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Speaker Bios



Jared Blumenfeld
Regional Administrator
U.S. Environmental Protection Agency

Mr. Jared Blumenfeld was appointed by President Barack Obama to serve as EPA Regional Administrator for the Pacific Southwest in November 2009. EPA Region 9 is home to more than 48 million people in California, Arizona, Hawaii, Nevada, the Pacific Islands, and 148 tribal nations.

Mr. Blumenfeld has spent two decades on the front lines of protecting the environment both at home and internationally. His priorities at EPA include strong enforcement, environmental justice, protecting and restoring our air, land and waters, building strong federal, state, local and tribal partnerships, and taking action on climate change.

Mr. Blumenfeld has made hearing directly from elected tribal leaders a priority and has personally visited more than 80 reservations to understand their on-the-ground challenges.

Before becoming Regional Administrator, Mr. Blumenfeld was the Director of the San Francisco Department of the Environment where he spent eight years as the primary environmental decision-maker for the city. Jared helped to initiate many landmark environmental laws that became part of the municipal Environment Code. These included San Francisco's ban of plastic bags, a 2020 zero waste goal, LEED Gold building standards, and an overarching precautionary principle framework.

Mr. Blumenfeld's environmental leadership includes chairing the first United Nations World Environment Day hosted by the United States - Green Cities: Where the Future Lives (2005), overseeing the Treasure Island Redevelopment Authority, and directing international initiatives to protect eight million acres of wildlife habitat. He is a founder of the Business Council on Climate Change, an organization that unites businesses around the challenge of climate change. Mr. Blumenfeld has worked for the Natural Resources Defense Council (NRDC), the Sierra Club Legal Defense Fund, and the International Fund for Animal Welfare. Mr. Blumenfeld received his law degrees at the University of London and the University of California, Berkeley.



Jeremy Bauer, MS
Border Environmental Health Coordinator
U.S. Environmental Protection Agency, Region 9

Mr. Jeremy Bauer has over 13 years of professional experience in community environmental education and promotion, collaborative leadership, and environmental public health. He has overseen the development of environmental health risk assessments and risk reduction analyses. He has written many winning proposals both on the non-profit side procuring grant funding as well as on the corporate side as an environmental compliance consultant winning work with government and private sector clients. Currently, Mr. Bauer coordinates the U.S. EPA's environmental health efforts along the U.S.-Mexico Border in California-Baja California and Arizona-Sonora. In his role, he designs environmental health-related capacity-building workshops, reviews and provides feedback on project proposals for EPA-funded grants, and serves as technical representative for implementation of environmental health-related grants.

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Orlando Cabrera-Rivera
Program Manager, Environmental Quality and Climate Change
Commission for Environmental Cooperation

Mr. Orlando Cabrera-Rivera is the Manager of the Environmental Quality and Climate Change Program at the Secretariat of the Commission for Environmental Cooperation (CEC). He is responsible for developing and overseeing the implementation and delivery of North America-wide environmental initiatives and capacity building efforts under CEC's cooperative work program related to air quality, climate change, pollutant releases and transfers registers (PRTR) systems and environmental health. Mr. Cabrera-Rivera has a Bachelor of Science in Meteorology from the Department of Oceanic and Atmospheric Sciences at the University of Wisconsin-Madison, and a Master of Science in Land Resources Management from the Gaylord Nelson Institute for Environmental Studies at UW-Madison.

Fabiola Estrada, MS
Project Officer/Life Scientist
U.S. Environmental Protection Agency, Region 9

Ms. Fabiola Estrada graduated from UC Berkeley with a degree in Molecular Environmental Biology and minors in Spanish and Education. She received a master's degree in Industrial Hygiene from the University of Washington. Ms. Estrada joined the U.S. EPA at the Region 3 Pesticides Office in Philadelphia, and transferred to Region 9 in 2006 where she manages pesticide grants for state and tribal programs. In addition to being the lead for the regional Spanish-language pesticide safety outreach effort, Ms. Estrada is the Regional School Integrated Pest Management Coordinator. For the past couple of years, she has focused on partnering with multiple agencies to ensure that farmworkers know about their protections under the Worker Protection Standard and how to prevent pesticide exposure in the workplace and at home.



Ruth Etzel, M.D., Ph.D., Director, Office of Children's Health Protection, U.S. Environmental Protection Agency

Dr. Ruth Etzel is the Director of EPA's Office of Children's Health Protection. During 20 years as a Commissioned Officer in the U.S. Public Health Service, she served in a variety of public-sector leadership positions including: U.S. Centers for Disease Control and Prevention (Founding Chief of the Air Pollution and Respiratory Health Branch), U.S. Department of Agriculture (Director of the Division of Epidemiology and Risk Assessment), and U.S. Indian Health Service (Research Director at the Alaska Native Medical Center).

Dr. Etzel is the founding editor of *Pediatric Environmental Health* (a 3rd edition was published by the American Academy of Pediatrics in 2012). This influential book has helped train thousands of doctors who care for children about how to recognize, diagnose, treat, and prevent illness in children from hazards in the environment. She has worked extensively with international organizations to educate health professionals about environmental health and to build their capacity to conduct environmental investigations. From 2009 to 2012, Dr. Etzel served as the Senior Officer for Environmental Health Research in the Department of Public Health and Environment at the World Health Organization in Geneva, Switzerland.

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Dr. Etzel has a broad background in public health, with specific training and expertise in pediatrics, preventive medicine, and children's environmental health. After completing a residency in pediatrics, she became a Robert Wood Johnson Clinical Scholar at the University of North Carolina at Chapel Hill.

Robert Guerrero, MBA
Chief, Office of Border Health
Arizona Department of Health Services

Mr. Robert Guerrero serves as the Chief of the Office of Border Health for the Arizona Department of Health Services and functions as the primary liaison and point of contact between the Arizona Department of Health Services and the public health authorities in the State of Sonora. In addition, Mr. Guerrero is the ADHS Director's Delegate to the U.S.-Mexico Border Health Commission, the U.S.-Mexico Border Governors Conference's Health and Emergency Management Worktable, and the Arizona-Mexico Commission's Health Services Committee. As the director's delegate, Mr. Guerrero works closely with public health authorities in all ten of the states on the U.S.-Mexico Border and with both federal governments.

The Office of Border Health actively participates across the broad spectrum of public health activities in the Arizona-Sonora Region. The activities include binational epidemiological surveillance, binational public health prevention services, and binational behavioral health services. Within the Office of Border Health are the Border Infectious Disease Surveillance Program and the U.S.-Mexico Border Health Commission's Arizona Outreach Office.

Aminata Kilungo, PhD
Director of Research and Development
Sonora Environmental Research Institute, Inc.

Dr. Aminata Kilungo holds a Ph.D. in Soil, Water and Environmental Science, and Microbiology from the University of Arizona. She is the Director of Research and Development at Sonora Environmental Research Institute, Inc. (SERI) and has over nine years of experience working with underserved communities in the field of environmental science, environmental health, water quality and monitoring, and pollution prevention. Her work focuses on finding sustainable solutions to minimize environmental impacts, engaging the targeted communities in the process, and improving overall quality of life. She works with communities in the Tucson metropolitan area, along the Arizona-Mexico border and in Sub-Saharan Africa. Some of her research work includes: pollutant mapping and analysis to determine potential hazardous air pollutants hot spots along the Arizona-Sonora border; home assessments to identify potential health risks and hazards in the Tucson metropolitan area; development of technology to instantaneously detect microbial contamination in drinking water; and chemical and microbial well water quality assessment and well design comparison studies in Tanzania. Dr. Kilungo also has experience working as a consultant and was previously a contractor for the U.S. Army managing the Pollution Prevention and Environmental Management Systems Programs. Dr. Kilungo is currently working on the evaluation of environmental health status along the Arizona-Sonora border region, funded by the Border Environmental Corporation Commission (BECC) in coordination with the U.S. EPA.

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Stanley Maloy, PhD
Dean, College of Sciences
Professor of Biology
San Diego State University

After earning a Ph.D. in Molecular Biology and Biochemistry from the University of California at Irvine, Dr. Maloy did postdoctoral work in Genetics at the University of Utah, then joined the University of Illinois, Urbana-Champaign faculty in 1984 where he was promoted through the ranks to Professor and Director of the Biotechnology Center. In August, 2002 he moved to San Diego State University as founding Director of the Center for Microbial Sciences and Professor of Biology.

Dr. Maloy is Past-President of the American Society for Microbiology, the oldest and largest single life science membership organization in the world. He has had numerous roles at Cold Spring Harbor Laboratory, teaching the summer course in Advanced Bacterial Genetics from 1990-1995, the advanced graduate course in Microbial Pathogenesis at the Watson Graduate School from 2002-2006, and was co-founder of the international symposium on Microbial Pathogenesis and Host Response. He has taught numerous international courses and organized many international scientific meetings. He is the author of several books, and has won multiple awards for teaching. He has consulted for large companies and small, biotech start-up companies, served on the Scientific Advisory Board of several companies, and as Chief Scientific Officer of Vaxiion Therapeutics. He served as chair of the NIH MBC1 Study Section and as an advisor for many national and international scientific agencies.

Research in his lab focuses on bacterial physiology, genetics, genomics, and the evolution of microbial pathogens.



Andrea Manion
Environmental Protection Specialist
U.S. Environmental Protection Agency

Ms. Manion has over 15 years of experience in grants management, providing oversight to ensure proper expenditure of funds to achieve positive environmental results while managing relationships with recipients. Currently, she serves as Panel Chair of EPA R9's *Environmental Justice Collaborative Problem Solving Cooperative Agreements* and the *Environmental Justice Small Grants* where she reviews, comments on, and ranks eligible proposals. Ms. Manion currently serves as the project officer for a FY15 EJ small grantee—a role she sought out—in order to fully understand the EPA grant process from another perspective. A volunteer in the Peace Corps from 2010 through 2012, she helped found a Grants Committee, which provided feedback to volunteers to promote feasible project planning, successful grant proposals, and effective project implementation — thereby encouraging sustainable partnerships. Prior to joining EPA, Ms. Manion was the Grants Director for The Sierra Club Foundation for 14 years where she managed a \$47 million annual grant making budget. As a volunteer, Ms. Manion serves as Vice President for Community Awareness and Treatment Services where she oversees the agency's growth in serving the chronically homeless population by providing safe and accessible services. Ms. Manion has a Masters in Nonprofit Administration from the University of San Francisco and a Bachelor of Science degree in Conservation Biology and Environmental Science from Michigan State University.

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Dan Meltzer, MPH
Research Associate
California Environmental Health Tracking Program

Mr. Dan Meltzer is a research associate with the California Environmental Health Tracking Program (CEHTP). CEHTP is a program of the Public Health Institute in partnership with the California Department of Public Health and is primarily funded by the Centers for Disease Control (CDC) National Environmental Public Health Tracking Program. The program works to make environmental health data and information publically-available through the development of a web-based data query system, state-of-the-art data displays, and innovative web tools and services for communities, governments, academia, and private partners. Mr. Meltzer's focus primarily involves geospatial data and GIS, and he has worked on projects relating to water quality, air quality, traffic, and other environmental hazards. He received his public health master's degree in 2015 from the University of California, Berkeley.

William Ngai, MD, MPH
Public Health Medical Officer
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

Dr. William Ngai received his Medical Degree from the New York University School of Medicine and his Master of Public Health degree from the University of California, Los Angeles School of Public Health. Postgraduate training consisted of an internship in internal medicine at the Veterans Administration Hospital of Long Beach - University of California, Irvine, a residency in nuclear medicine at the University of California, San Francisco, and a residency in occupational and environmental medicine at the University of California, San Francisco. He is board certified in occupational and environmental medicine.

After practicing in the emergency department at the Kaiser Permanente Hospital in Martinez, Dr. Ngai practiced general medicine and occupational medicine in Oakland for thirteen years. From 1998, he practiced occupational medicine at the Mills-Peninsula Hospitals in Burlingame and San Mateo and the Palo Alto Medical Foundation until 2003. He has held his current position of a Public Health Medical Officer in the Pesticide and Environmental Toxicology Branch of the Office of Environmental Health Hazard Assessment, a department in the California Environmental Protection Agency, since April 2000.



Luis Olmedo
Executive Director
Comite Civico Del Valle, Inc.

Mr. Luis Olmedo is the Executive Director of Comite Civico del Valle, an organization located in Imperial Valley whose mission focuses on addressing environmental health related problems in the Imperial and Coachella Valleys. A community activist who advises local, regional, and state programs on environmental health issues affecting Imperial County and Eastern Coachella Valley, Mr. Olmedo is a member of various state and national networks that focus on environmental policy and regulation. His organization has partnered with academic and research institutions to expand environmental research in Imperial County who published studies on Border Asthma and Allergies, Perchlorate Biomonitoring, and Agricultural Burning. He is currently partnering with San Diego State University and California Department of Public Health on air monitoring and asthma.

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Nancy Palate
Health Educator
California Department of Public Health

Ms. Nancy Palate is a health educator in the Environmental Health Investigations Branch (EHIB) of the California Department of Public Health. Ms. Palate has a B.S in Communication Science from the University of Phoenix and is currently a post graduate student of Instructional Science and Technology in California State University Monterey Bay. She has worked as a promotora in the Bay Area for over 12 years. In EHIB, Ms. Palate works alongside a team of scientists who do investigations on the impact that some hazardous sites or releases may have on the health of communities in California.

Cyrus Rangan MD FAAP FACMT
Director, Bureau of Toxicology and Environmental Assessment
County of Los Angeles Department of Public Health

Cyrus Rangan M.D. FAAP FACMT graduated from the Medical College of Pennsylvania in 1995 followed by a clinical residency in General Pediatrics at Children's Hospital Los Angeles, graduating in 1998. He then completed a fellowship in Medical Toxicology at the University of California, San Diego Medical Center in 2000. He is board-certified in Pediatrics and Medical Toxicology. Dr. Rangan is Director of the Bureau of Toxicology and Environmental Assessment at the Los Angeles County Department of Public Health. He investigates community reports of environmentally related illnesses or disease clusters and provides expert consultation and education to hospitals and other impacted professionals about medical issues in toxicology, "HazMat", epidemiology, and environmental health. Dr. Rangan serves as Director of the Los Angeles Area Medical Toxicology Education Program for the California Poison Control System. He provides lectures and media support for hospitals, healthcare groups, health agencies, and schools. Dr. Rangan is also an attending physician and Consulting Toxicologist at Children's Hospital Los Angeles and an instructor at the USC/Keck School of Medicine.



Jeff Scott, MPP
Director
Region 9 Land Division
U.S. Environmental Protection Agency

Mr. Jeff Scott leads the U.S. EPA Region 9 Land Division, which covers a number of both traditional and multi-media programs. The Division is responsible for the hazardous waste, underground storage tank, and zero waste programs under the Resource Conservation and Recovery Act (RCRA). The Division also protects the public and empowers communities by preventing exposures to toxic compounds regulated under the Toxic Substances Control Act (TSCA), and by implementing the Pollution Prevention Act, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the Region's Environmental Education Program and Children's Environmental Health Program. In addition, the Land Division focuses on environmental and human health activities in underserved and disproportionately burdened communities such as the U.S.-Mexico border region, the outer Pacific Islands, and tribal nations, including cross-program consolidated grants to the Pacific Islands and the Indian Environmental General Assistance Program Act. Mr. Scott has long been a champion for pushing holistic multi-media approaches to addressing environmental issues. Mr. Scott has served in a number of senior

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executive and management positions in his over 30 years at the U.S. EPA. He has served as director of multiple divisions in Region 9. In 2003, he also served as Director of the Office of International Environmental Policy in the EPA Headquarters Office of International Affairs. Mr. Scott grew up primarily in southern California in the City of Redlands. He received his master's degree in public policy from the University of California, Berkeley. He graduated Phi Beta Kappa and Cum Laude from the University of California, Irvine with bachelor degrees in both economics and social ecology.



James M. Seltzer, MD
Visiting Professor, Division of Occupational and Environmental Medicine
University of California, Irvine

James M. Seltzer, MD is a Board-certified Allergist/Immunologist. After earning his undergraduate degree in Biology, *magna cum laude*, from the University of Pennsylvania, Dr. Seltzer was awarded a medical degree from the University of Pennsylvania School of Medicine. He completed a residency in pediatrics at Children's Hospital of Los Angeles and a fellowship in Allergy & Immunology at the University of California, San Diego, School of Medicine. Dr. Seltzer is a Fellow of the American Academy of Allergy, Asthma, & Immunology (AAAAI), the American College of Allergy, Asthma, & Immunology (ACAAI), and the American Academy of Pediatrics (AAP). For 27 years, Dr. Seltzer practiced Allergy/Immunology in southern California; he founded the Clinical Research Institute, Inc., a free standing multi-disciplinary clinical research facility, and served as its medical director. While Professor of Medicine at the University of California, Irvine School of Medicine, Dr. Seltzer was appointed Co-Director of the Pediatric Environmental Health Specialty Unit, a network of experts in children's environmental health. Dr. Seltzer relocated to Massachusetts five years ago and assumed the post of Clinical Director, Division of Allergy and Immunology, Reliant Medical Group. Having recently returned to southern California, Dr. Seltzer now serves as Visiting Professor and consultant at the University of California, Irvine Division of Occupational and Environmental Medicine.

Dr. Seltzer has been a consultant to industry and to government (e.g., U.S. Food and Drug Administration, Indoor Air Quality Division of the U.S. EPA). He is a well-known speaker and moderator on topics such as asthma and how the environment affects respiratory health, including programs sponsored by the U.S. Environmental Protection Agency, the Agency for Toxic Substances and Disease Registry, and the National Institute of Environmental Health Sciences. Dr. Seltzer served as chairman of the Indoor Environment Committee of the ACAAI, and also served as Chairman of the Environmental Control and Air Pollution Committee and the Environmental Medicine Committee of the AAAAI. In 2008, the AAP appointed Dr. Seltzer to its National Executive Council of the Council on Environmental Health. He was also elected to the Board of Regents of the ACAAI in 2009 and served as a board member for the Massachusetts Allergy & Asthma Society and the New England Society of Allergy. Dr. Seltzer has extensive experience serving as a medical-legal consultant, including as an expert for litigation and is the author of numerous publications in the fields of environmental medicine, allergy, immunology, and asthma.

Protecting Children's Environmental Health in the U.S.-Mexico Border Region

January 27 – 28, 2016

Speaker Bios



Diane Takvorian, MSW
Executive Director
Environmental Health Coalition

Ms. Diane Takvorian has led the struggle for social and environmental justice for over 30 years. She is Executive Director and co-founder of Environmental Health Coalition (EHC), an environmental justice organization based in the San Diego/Tijuana region. Founded in 1980, EHC works to protect public health and the environment threatened by toxic pollution through efforts that create a just society.

EHC's community organizing and policy advocacy work with disenfranchised communities have eliminated many health risks and enabled thousands of residents to develop into community leaders. Ms. Takvorian has served on international, national, state, and regional advisory boards. In 2009, President Obama appointed her to the Joint Public Advisory Committee for the Commission for Environmental Cooperation. In 2008, Ms. Takvorian received the James Irvine Foundation Leadership Award for her "creative and inspirational leadership benefiting the people of California." She is also a cofounder of the California Environmental Justice Alliance.

Ms. Takvorian holds a Master of Social Work degree with an emphasis on public policy and community organizing.



Lisa Villarroel, MD, MPH
Medical Director
Bureau of Epidemiology and Disease Control
Arizona Department of Health Services

Dr. Lisa Villarroel serves as the Medical Director for the Bureau of Epidemiology and Disease Control for the Arizona Department of Health Services. She received her Bachelor of Science in Biology degree at Princeton University and her Doctor of Medicine at Northwestern University before getting her Master of Public Health degree and becoming board certified in Family Medicine in Phoenix, Arizona. In addition to her work at the health department, she is an assistant professor at the University of Arizona College of Medicine and a practicing locum tenens.

WELCOME NOTE

APPENDIX C

Protecting Children's Environmental Health in the U.S.-Mexico Border Region

January 27-28, 2016 | Crowne Plaza San Diego

Welcome to the Protecting Children's Environmental Health in the U.S.-Mexico Border Region Symposium, hosted by the U.S. Environmental Protection Agency (EPA). This symposium is part of a larger initiative that the Agency is undertaking with partners in EPA Regions 6 and 9 to help improve environmental health conditions in communities within the U.S.-Mexico border region and is aligned with the goals of the Border 2020 U.S.-Mexico Environmental Program. In addition to the symposium being held in San Diego, California, the EPA sponsored a similar symposium in September 2015 in partnership with the Southwest Center for Pediatric Environmental Health at Texas Tech in El Paso, Texas.

Protecting children from environmental health risks and advancing environmental justice are major cornerstones of the EPA's work. This conference will provide several sessions to increase the capacity of symposium attendees to recognize and address environmental hazards that may affect children's health in communities within the border region that are often confronted with multiple environmental and social stressors.

This event could not have been made possible without the support of EPA's partners. Representatives from the following organizations devoted an incredible amount of time, resources, and energy to help the EPA organize this symposium: Agency for Toxic Substances and Disease Registry, U.S.-Mexico Border Health Commission, California Department of Public Health Environmental Health Investigations Branch, and the Border Environment Cooperation Commission. In addition, participants of EPA-sponsored trainings and representatives from the following organizations provided invaluable feedback to inform the agenda: Arizona Department of Health Services Office of Border Health; Arizona Department of Environmental Quality Office of Children's Environmental Health and Office of Border Environmental Protection; Sonora Environmental Research Institute, Inc.; University of Arizona; California Office of Environmental Health Hazard Assessment; California Department of Public Health Office of Binational Border Health; Comité Civico del Valle, Inc.; Imperial Valley Child Asthma Program; U.S. Department of Health and Human Services Office of Minority Health; and the Western States Pediatric Environmental Health Specialty Unit. Furthermore, representatives of the Centers for Disease Control and Prevention provided considerable assistance throughout the accreditation process.

We sincerely hope you will enjoy the symposium and that your experience will provide you with new ideas and approaches to protect children from environmental health risks in the communities that you serve. Thank you for your participation!



PRESS RELEASE

APPENDIX D



BORDER ENVIRONMENT COOPERATION COMMISSION BECC BULLETIN

— LATEST NEWS & EVENTS —

U.S. EPA, Partners Convene Symposium on Protecting Children's Environmental Health along U.S.-Mexico Border

- *The agency also releases guide for healthier school renovations*

The U.S. Environmental Protection Agency (EPA), in collaboration with the Agency for Toxic Substances and Disease Registry, the Border Environment Cooperation Commission (BECC), the U.S.-Mexico Border Health Commission, the California Department of Public Health, and other partners, held a two-day symposium: Protecting Children's Environmental Health in the U.S.-Mexico Border Region, on January 27-28 in San Diego, California.

The key issue discussed at the symposium was children's environmental health risks that are commonly found in communities located within the California/Baja California and Arizona/Sonora regions.



EPA Regional Administrator Jared Blumenfeld

EPA Regional Administrator Jared Blumenfeld kicked off the symposium with opening remarks. Mr. Blumenfeld explained: "The border is a very dynamic 2,000-mile long region with millions of residents and EPA is seeking to protect children's health. Wherever you live, either Mexico or the United States, parents and everyone else expect children to grow up in a healthy environment, with good air, water, and soil quality, but not all border areas are currently healthy, so we are working to achieve a healthy environment."

During his opening remarks, Mr. Blumenfeld also announced the release of the new U.S. EPA booklet entitled *Sensible Guide to Healthier School Renovations*. This guide provides an overview of how to avoid environmental health hazards as schools prepare for and undergo renovations, and provides best management practices to avoid exposure and protect children's health.

The symposium featured sessions focused on environmental health issues in the border region, how prenatal and childhood exposures can impact children's health and development, and what participants can do to address or mitigate children's environmental health risks.

Some goals for the symposium included:

- Increase knowledge of children's environmental health risks in the U.S.-Mexico border region.
- Increase the capacity of healthcare professionals, public health practitioners, environmental professionals, health advocates including community health workers or "promotoras," and the public, to address or mitigate children's environmental health issues.
- Facilitate networking and knowledge-sharing to promote collaboration across disciplines and organizations to resolve children's environmental health issues.

Discussion topics included: Border 2020 and Healthy Border 2020 initiatives in the U.S.-Mexico border area and how these efforts help to address public health and environmental challenges; environmental health in the Baja California-California and Sonora-Arizona regions; industrial pollution in the border area; environmental management of pediatric asthma; reduction of exposure to toxic substances found in personal care products; lead and mercury poisoning; community projects to promote children's environmental health; basics of applying to federal grant programs; identification of diseases related to pesticides; and climate and health.



Brochures and documents available

Dr. Ruth Etzel, Director of EPA's Office of Children's Health Protection and symposium keynote speaker, explained: "We have a national and border-wide vision that all children have the right to grow up, live and play in a healthy and safe environment."



Dr. Ruth Etzel, Director of EPA's Office of Children's Health

Dr. Etzel also mentioned that EPA is aware that many things have to be done to improve children's environmental health, but the community has difficulty using their knowledge and putting it into action. She said the more than 130 symposium participants will acquire knowledge from the agency which can help them to visibly put knowledge into action in the border community.

"The symposium will lead the community to make changes in their homes, schools, industries, and government and non-government organizations, in order to create a change together," said Dr. Etzel.

The symposium featured representatives from the California Department of Public Health, Arizona Department of Health Services, Arizona Department of Environmental Quality, U.S.-Mexico Border Health Commission, Commission for Environmental Cooperation, Border Environment Cooperation Commission, Environmental Health Coalition, Sonora

Environmental Research Institute, Comité Civico del Valle, San Diego State University, Western States Pediatric Environmental Health Specialty Unit and others.

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