



Mel and Enid  
Zuckerman  
College of Public  
Health

Collaborations at  
the  
U.S.-Mexico  
Border  
2010-2012



MEL AND ENID  
ZUCKERMAN COLLEGE  
OF PUBLIC HEALTH

## Mel and Enid Zuckerman College of Public Health Collaborations at the U.S.-Mexico Border 2010-2012

---

One of the strongest areas of focus of the University of Arizona's Mel and Enid Zuckerman College of Public Health is our collaboration with communities to strengthen the public health infrastructure in the U.S.-Mexico border region. Our numerous partnerships and collaborations in the region are testimony to our commitment to health equity in the region.



### **Arizona Prevention Research Center:**

Beginning with our Arizona Prevention Research Center, we have partnered with communities since 1995 to improve the health and well-being of people living in U.S.-Mexico Border communities through research, training, advocacy and policy change. With leadership provided by **Scott Carvajal and Maia Ingram**, the Center houses diverse programs and activities that use community-based participatory action research to focus on the prevention of chronic disease in the border region. The philosophy of the Center is that improving health outcomes requires a collaborative partnership between universities and communities. The Center's research and training expertise includes chronic disease prevention and management; community health worker effectiveness research and training; and participatory research and evaluation.

AzPRC works with 25 community agencies to address the prevention and treatment of diabetes and other chronic disease among adults and children. Together, we have created five curricula utilizing the community health worker model to meet the needs of diverse communities:

***Pasos Adelante:*** Steps Forward is an evidence-based chronic disease prevention curriculum focusing on healthy food choices, physical activity and chronic disease risk. The curriculum includes information on diabetes, emotional wellness, community advocacy, and how to organize walking groups.



**Healthy Families:** *Pasos Adelante* adapted for the specific needs of young parents and their children. In creating a healthy lifestyle.

***Diabetes y La Familia:*** Diabetes and the Family is a health promotion and disease prevention program designed for individuals with diabetes and their families that teaches health behaviors associated with primary and secondary prevention of diabetes

***Sonrisa:*** A toolkit for Community Health Workers to address depression and other emotional/mental distress experienced by people with diabetes or other chronic disease.

***Acción Para La Salud:*** A curriculum to train community health workers to engage their communities in creating healthy environments for adults and children.

Today, the core research of the AzPRC is focused on the role of the community health worker in engaging community members to address the social determinants of health. This research is a collaborative effort with six border agencies including community health centers, grassroots agencies and a county health department. Other research focuses on a community based survey of diabetes prevalence in Douglas Arizona following twelve years of community interventions and on numerous programs in community based organizations in our border communities including:

**PCORI:** *Integrating and comparing community-based participatory and conjoint analysis* is a research project at Sunset Community Health Center in Yuma, Arizona of how best to provide patient-centered care to patients. Sunset's administration identified behavioral health as the area of greatest need in developing a patient-centered model of care. In collaboration with the Arizona Prevention Research Center at the University of Arizona College of Public Health and the Rand Institute, partners submitted and were awarded a grant from the Patient Centered Outcome Research Institute (PCORI) to develop/document and evaluate three models of care:

1. The current model for providing behavioral health services.
2. A second model of care based on a participatory process of collecting input through patient focus groups and provider interviews.
3. A third model of care developed by *conjoint analysis*. This innovative marketing tool allows patients to compare and choose options resulting in a preferred model of care.

The three models will be compared and evaluated by staff and patients to determine the most effective and efficient model.

## **Recent publications resulting from the work of the Arizona Prevention Research Center**

### **2012**

- Cutshaw C, **Staten L, Reinschmidt K, Davidson C, Roe D.** Depressive Symptoms and Health-Related Quality of Life Among Participants in the Pasos Adelante Chronic Disease Prevention and Control Program, Arizona, 2005-2008. *Prevention Chronic Disease*, 2012; 9:110020. <http://dx.doi.org/10.5888/pcd9.110020>
- **Ingram M, Piper R, Kunz S,** Navarro C, Sander A, Gastelum S. Salud Si A Case Study for the Use of Participatory Evaluation in Creating Effective and Sustainable Community-Based Health Promotion. *Fam Community Health*, Vol. 35, No. 2, pp. 130-138.
- **Staten L,** Cutshaw C, **Davidson D, Reinschmidt K, Stewart R, Roe D.** Effectiveness of the Pasos Adelante Chronic Disease Prevention and Control Program in a US-Mexico Border Community, 2005-2008. *Preventing Chronic Disease*, 2012; 9:100301. <http://dx.doi.org/10.5888/pcd9.100301>

### **2011**

- **Ingram M, Reinschmidt K, Schachter K, Davidson C, Sabo S, De Zapien J, Carvajal S.** (2011 Online First) Establishing a professional profile of community health workers: Results from a national study of roles, activities and training. *Journal of Community Health*. <http://www.springerlink.com/content/3150650152128366/fulltext.html>
- Rosenthal L, Wiggins N, **Ingram M,** Mayfield-Johnson S, and **De Zapien J.** Community Health Workers Then and Now: An Overview of National Studies Aimed at Defining the Field. *Journal of Ambulatory Care Management* 34(3):247-259, July/September 2011.

### **2010**

- **Redondo F, Torres E,** Castro I, Villaseñor A, **Ingram M.** (2010) Promotora Community Health Manual: Developing a Community-Based Diabetes Self Management Program CES4-Health.info. <http://www.ces4health.info/find-products/view-product.aspx?code=NHNC44FF>
- **Reinschmidt KM, Teufel-Shone N, Bradford G, Drummond R, Torres E, Redondo F, Elenes JJ,** Sanders A, Gastelum S, Moore-Monroy M, Barajas S, **Fernandez L, Alvirdez R, Guernsey de Zapien J, Staten LK.** Taking a Broad Approach to Public

Health Program Adaption: Adapting a Family-Based Diabetes Education Program. J. Primary Prevent., publish online 02/2010  
<http://www.springerlink.com/content/jg71118078484ngv/>.

- **Sabo S, Ingram M, Wennerstrom A.** Social Justice and Health in Arizona Border communities: The Community Health Worker Model. The Colonias Reader 190-2003.

## **Border Health 2010, Border Health 2020, and Binational Projects**

**Cecilia Rosales** is providing leadership from the College for two additional important border health initiatives, Healthy Border 2010 and Healthy Border 2020. In an effort to address common public health challenges along the U.S.-Mexico border region, the U.S.-Mexico Border Health Commission (USMBHC) established the Healthy Border 2010 initiative—a binational agenda for health promotion and disease prevention. The publication *Healthy Border 2010: An Agenda for Improving Health on the United States-Mexico Border* was published in 2003 ([http://www.borderhealth.org/files/res\\_63.pdf](http://www.borderhealth.org/files/res_63.pdf)). This initiative was a significant and unique step on the road towards advancing a bilateral strategic plan focused on health promotion and disease prevention. This initiative was modeled after the U.S. Department of Health and Human Services' (HHS) Healthy People 2010 and México's *Indicadores de Resultado* (National Health Indicators) to develop the Healthy Border 2010 framework, along with soliciting and incorporating input from a broad cross-section of people from the U.S.–México border. The Healthy Border 2010 objectives communicated front and center health improvement activities on both sides of the border. The over-arching goals of this initiative involve improving the quality of life and increasing the number of years of healthy life and the elimination of health disparities. Over the past three years, MEZCOPH in collaboration with the Arizona Department of Health



Services/Office of Border Health, the Baja California Outreach Office of the USMBHC, and *El Colegio de la Frontera Norte* have been tasked with convening a Binational Technical Workgroup to evaluate the 2010 agenda and to develop Healthy Border 2020 topic areas and related measurable objectives, in addition to recommending strategies for achieving these objectives. This process is a five phase/five year endeavor and in accordance with the Border Health Commission's Strategic Framework. The Strategic Framework describes the plan and timeline in completing steps toward the

close out of Healthy Border (HB) 2010 and the introduction of the Healthy Border (HB) 2020 Initiative. The Strategic Framework was prepared and drafted by MEZCOPH in May 2010. It was subsequently reviewed and approved for publication by the Office of Global Affairs of the Department of Health and Human Services in November 2010 ([http://www.borderhealth.org/files/res\\_1728.pdf](http://www.borderhealth.org/files/res_1728.pdf)). Both the 2010 Close Out Report and Healthy Border 2020 agenda will be finalized in 2013.

## Center for Health Promotion in Northern Mexico

The College of Public Health is partnering with the *Colegio de Sonora* in the development and implementation of the **Center for Health Promotion in Northern Mexico**. The Center aims to contribute to the promotion of health and the construction of healthy communities among the population in Northern Mexico at the individual, family and social ecological level from the perspective of the social sciences, public health, and socio-cultural epidemiology. Additionally, the Center has the unique opportunity to contribute to health promotion and building healthy communities in Arizona and the other border regions of the United States as well as in the larger metropolitan areas in the United States with large Latino populations. To achieve this objective, the Center includes an agenda for integrating research, training and development of human resources, and management and dissemination of information.

At the present time the principle research project of the Center for Health Promotion in Northern Mexico focuses on adapting and validating a community based prevention intervention utilizing community health workers. The proposed intervention was originally developed in the Arizona



border region and includes the NHLIB intervention “*Su Corazon, Su Vida*” and the University of Arizona’s “*Pasos Adelante*” intervention. The Mexican program, *Meta Salud*, includes a 12 week intervention with an emphasis on physical activity and nutrition and includes walking groups and focuses on building self efficacy among the participants. Qualitative research addresses the role of community health workers in primary prevention of chronic disease within the Mexican health care system, as well as gaining a deeper understanding of constructing an empowerment model in specific cultural contexts which enables prevention programs to include individual, family and community changes.

## Migrant Farmworker Health: Building a Model of Corporate Social Responsibility

For the past five years, members of the College have collaborated with both the *Colegio de Sonora* and the *Centro de Investigacion en Alimentacion y Desarrollo, A.C. (CIAD)* to develop and pilot a community health worker model in large agricultural camps in Sonora which employ migrant farmworkers from southern and central Mexico to harvest fruits and vegetables.



Farmworker camps house as many as 2000 workers from many of the poorest regions of Mexico. The collaboration of these three institutions with a large agricultural grower in Sonora has resulted in the development and implementation of a community health worker pilot program to increase prevention and health promotion among migrant farmworkers during their stay in Northern Mexico. Most recently, a MEZCOPH

student has completed her internship in the agricultural camp to evaluate the pilot program and finalize a curriculum to be shared with other farmworker organizations in Mexico.

## Partnerships with Community Health Worker Projects

### *Vivir Mejor*

Mariposa Community Health Center continues to develop innovative approaches to health promotion and disease prevention. Mariposa was recently awarded a Health Services Research Administration Rural Health Outreach Grant to develop a patient-centered model of diabetes care both within the clinic and by developing a supportive community environment for people with diabetes. The Arizona Prevention Research Center is partnering on this grant to assist Mariposa to identify and track patient outcomes through Electronic Medical Records and to document the results of community-based efforts.

### *Salud Para Todos*



With funding from the Office of Minority Health, *Campesinos Sin Fronteras*, Sunset Community Health Center and the College developed a model to address diabetes cardiovascular disease and obesity through community outreach, health screening and education, and greater access to quality health care sustained through the active support of the *promotoras*. The Arizona Prevention Research Center engaged the partners in a participatory evaluation process and provided technical assistance in program development. *Campesinos promotores* conducted a 12-week prevention curriculum with over 100 families, resulting in reported increases in physical activity and fruit and vegetable consumption and decreased consumption of sugary drinks. They also conducted leadership classes with parents to encourage to advocate for a healthy school environment for their children. Sunset CHC trained all their staff in cultural competency and using the *promotora*-model, increased patient satisfaction with the quality of care. The Agency for Health Care Research and Quality Innovations Exchange used evaluation findings to qualify *Salud Para Todos* as an innovative and effective model for community-clinic collaboration.

### *Salud Si*

*Salud Sí* is a *promotora*-driven health promotion program developed by the Mariposa Community Health Center designed to encourage physical activity, fruit and vegetable consumption and stress reduction among Mexican American women living in a US-Mexico Border community. Using an 8-week curriculum developed by the Mariposa staff, participants engaged in education classes twice weekly, and were provided opportunities for yoga, body sculpting and aerobics in a supportive environment. Mariposa CHC and the AzPRC applied a participatory evaluation framework over a 10-year period throughout the stages of program development, implementation and sustainability. Evaluation activities documented significant

changes in health status, ability to manage stress and sustained healthy behaviors among participants.

### ***Cosechando Salud***



Mariposa Community Health Center has been awarded a USDA Community Food Project Grant that will allow them to work closely with three community partners- an economic development corporation, a local farm and a regional fresh food network, to develop a sustainable food system in Nogales, Arizona on the U.S.-Mexico border. Nogales is a rural, low-income community that is 95% Hispanic/Latino. The vision of *Cosechando Bienestar* is to renew food traditions in Nogales so that locally-grown food is enjoyed by all for

better health. This vision will be fulfilled through efforts increase food self reliance, promote entrepreneurial responses to food and nutrition issues, and address local planning and marketing needs. Low income residents were actively involved in conceptualization and will directly benefit from the project through training, apprenticeship, stipends and food enterprises that connect human health and financial health. The AzPRC will facilitate participatory evaluation including community mapping and photo voice methods to enhance success and disseminate results of this model for other border and Hispanic/Latino communities.

### **Building Systems for Hypertension Control**

With funding from ADHS, the College has provided training and evaluation for community health workers/*promotoras* to develop a system of care for hypertension control among the patients at Regional Center for Border Health and Sunset Community Health Center. The training utilized a new community health worker source book developed at CDC with a focus on heart disease, strokes and hypertension. The evaluation focused on understanding the systemic changes which linked *promotoras* as members of the overall patient care team in combination with a specific educational intervention for patients with hypertension. The training and evaluation have served as the foundation for developing a new community health worker program focusing on a comprehensive system of care for hypertension with a community health center in Maricopa County.

## **Center for Rural Health**

The Center for Rural Health at the College of Public Health also is home to many programs, projects and initiatives that impact our border communities. Some of their initiatives include:

## **Arizona Rural Hospital Flexibility Program (FLEX)**

One of the programs housed at the Center for Rural Health which has important significance for the border region is the **Arizona Rural Hospital Flexibility Program (FLEX)**. FLEX, under the leadership of **Kevin Driesen**, focuses on (1) improving the quality of care provided by Critical Access Hospitals (CAHs), (2) improving the financial and operational performance of CAHs, (3) encouraging health system development through the engagement of the rural community with CAHs and other care providers and integrating rural emergency Medical Services into the health care system, and (4) designating new CAH hospitals.

The FLEX Program provides trainings and technical assistance that will improve quality of care, financial and operational performances in CAHs; encourage health system developments, and designate new CAHs. The trainings include live programs and webinars. Technical assistance is provided by CAH staff. Trainings and technical assistance provided by the FLEX Program are funded by the Office of Rural Health Policy. For many of the program's trainings participants' knowledge gained, intention of using knowledge gained in trainings, and usefulness of knowledge is measured.

Holy Cross Hospital in Nogales is an active participant in the FLEX program including the AZ-Flex Leadership Network and in performance improvement. HCH is also a member of the FLEX Quality Network which has been organized in collaboration with the Health Services Advisory Group (HSAG) for the purpose of developing quality improvement skills through a peer-to-peer exchange model. One other AZ-Flex-related outcome is HCH pursuit of Pharmacy 340B designation which (like Federally Qualified Community Health Centers) will allow it to provide medication to inpatients at lower cost.

Southeast Arizona Medical Center in Douglas actively participated in the Infection Prevention Collaborative which was organized between December 2009 and September 2011. They were one of our "success stories" in terms of outcomes from the Collaborative, increasing by a significant percentage the number of blood cultures conducted in a timely manner. AZ-Flex also helped Southeast Arizona Medical Center to achieve Level IV Trauma Center standing which upgraded its ability to treat a more complicated level of trauma condition.

## **Southwest Rural Policy Network**

Members of the Center of Rural Health, **Joyce Hospodar** and **Jennifer Peters**, participate in the **Southwest Rural Policy Network**. One effort involves the work of the Southwest Rural Policy Network, and the member organizations located at the border - the International Sonoran Desert Alliance in Ajo and the Nogales Community Development Corporation in Nogales. ISDA has surveyed all of the SWRPN members on work being done around food security and NCDC has been integrally involved in the work of the Center for Economic Integrity, Tucson, [another member of the SWRPN] around financial issues in rural communities. A report entitled "Building Financial Strength in Rural Communities" was recently completed by CEI.

**Howard Eng** at the Center for Rural Health, has been working on several border projects, with two DRPH students **Ana Hernandez and Jasmen Dorian**. They recently completed a study, *Four U.S. Border State Community Health Worker Training Needs Assessment*. This study funded by the Federal Office of Rural Health was a cross-sectional study that assessed the four U.S. Border States community health worker training needs. Employers of community health workers located in the four U.S. Border States were included in the study. The study comprised of three phases: (1) identified some of the community health worker employers in the four border states with the assistance of the border health offices and other resources, (2) conducted a literature review of how *promotora*/community health representative (IHS)/lay health worker/community health advisor are used in different health agencies and organizations and identify some of the training programs in the border region, and (3) sent out an community health worker assessment survey (e.g., how many *promotora*/community health representative (IHS)/lay health worker/community health advisors are employed, do they have a formal training program, what are the training needs, etc ...) to the community health worker employers identified above. The study results were published in the *Four U.S. Border States' Community Health Worker Training Needs Assessment Report* (December 2011).

**Howard Eng** is also conducting research at the border focusing on E-Health. E-Health, the use of information and communication technologies (ICT) for health, is one of the most rapidly growing areas in health today. However, limited systematic research has been carried out to inform e-Health policy, practice and country uptake of e-Health solutions. It was for this reason that World Health Organization (WHO), through its Global Observatory for e-Health (GOe), conducted its second global e-Health survey to gather evidence on trends and uptake of the use of ICT for health. WHO, through its Global Observatory for all 193 Member States, were invited to participate in the survey. In 2009, for the first time, WHO included the U.S.-Mexico Border Region to participate in the survey. The Pan American Health Organization invited Dr. Howard Eng to be the Principal Investigator on the project. The information collected included: (1) e-Health foundation policies and strategies, (2) deployment of e-Health initiatives in countries, (3) use of telemedicine, (4) adoption of eLearning for health professionals and students, (5) collection, processing and transfer of patient information, legal and ethical frameworks for EMR/EHR, (6) action concerning online child safety, internet pharmacies, health information on the internet, and spam, and (7) governance and organization of e-Health in countries. Data was collected for the 10 U.S.-Mexico Border states. The 2009 U.S.-Mexico border e-Health results are being updated. It is anticipated that the updated report will be completed and published in October 2012.

### **Binational Assessment of U.S.-Mexico Border Health Research**



**Howard Eng** is presently working on a Binational Assessment of U.S.-Mexico Border Health research. The purpose of the assessment is to determine the health research needs in the U.S.-Mexico border region. The project partners include: Federal Office of Rural Health Policy; the University of Arizona, Mel and Enid

Zuckerman College of Public Health, Center for Rural Health, Southwest Border Rural Health Research Center (SBRHRC); University of Arizona, College of Medicine; Pan American Health Organization (PAHO); and Consortium for North American Higher Education Collaboration. More than 1,000 border health researchers will be included in the study. A *SurveyMonkey* questionnaire will be used to collect information on border health researcher's demographic characteristics, type of research conducted, geographical location of research conducted, sources of research funding, types of research publications, research collaboration relationships, the researcher's perception of the top five research areas in the U.S.-Mexico Border Region, and what is needed to enhance border health research. In addition, information on successful border health practice/program model(s) [determined by research/evaluation] that has improved community health that could be replicated throughout the U.S.-Mexico Border Region and on the type of human subject protection review approval used in binational studies will be collected. The results of this study can be used by Federal Office of Rural Health Policy, funders, policy makers, researchers, and other parties interested in shaping their border health research agenda. It is anticipated that the study will be completed in December 2012.

### **The Arizona State Office of Rural Health (AzSORH) Program**

The Center for Rural Health is also home to the Arizona State Office of Rural Health (AzSORH) Program which is a federally funded (HRSA Office of Rural Health Policy) program. Under the direction of **Lynda Bergsma**, the program builds partnerships and provides technical assistance and resources to address a variety of health needs and build better systems of organized care in rural, border, and tribal Arizona communities. It has recently provided technical assistance for grant applications, data needs, and evaluation support to three groups at the Arizona-Mexico border interested in developing or refining border health networks and programs.

- The AzSORH worked with the **Santa Cruz County Adolescent Wellness Coalition** to help them obtain a one-year (\$80,000) Rural Health Network Development grant in 2009 from the HRSA Federal Office of Rural Health Policy. Since then the AzSORH has been a member for the **Santa Cruz County Adolescent Wellness Network**, providing guidance on their network planning process and their successful application for a three-year (2011-14) Rural Health Network Development grant, as well as providing expertise and program planning resources regarding adolescent health literacy, which is a focus of the network.
- The AzSORH worked with a number of border organizations in Arizona to help them obtain a one-year (\$80,000) Rural Health Network Development grant in 2010 for the **Arizona Border Communities Health Network**. Since then the AzSORH has been a member of the network, providing guidance on their network planning process as well as planning and coordinating their efforts to consolidate existing border county (Yuma, Santa Cruz, and Cochise) health needs assessments along the Arizona-Mexico border, which has resulted in the Arizona Border Region Data Resources and Virtual Library that can be accessed at <http://www.crh.arizona.edu/resources/border-data-library>. The purpose of the library is to provide health data at the county or community level that can be used by border organizations and communities to set health priorities, plan health programs, and seek funding for them.

- The AzSORH also provided technical assistance, especially on program evaluation, for the development of an application for a three-year Rural Health Outreach grant to reduce teen pregnancy in the three Arizona border counties .
- The AzSORH worked with Mariposa Community Health Center in Nogales, Arizona to encourage them to apply for a Rural Health Outreach grant, and provided technical assistance for their development of a successful grant application, which was awarded in 2012 to support the “¡Vivir Mejor! System of Diabetes Prevention and Care” in Santa Cruz County.

### **Battered Immigrant Women Project:**

The Southern Arizona Battered Immigrant Women Project (BIWP) helps to identify and develop resources and provide outreach and training to organizations that interact with immigrant women who may be victims of domestic violence or sexual violence. The project has established six task forces in Arizona's seven southern counties: Graham, Greenlee, Cochise, Pinal, Pima, Santa Cruz and Yuma. Mel and Enid Zuckerman academic professionals, **Jean McClelland and Maia Ingram**, play an important role in this project providing both evaluation and technical assistance services to the project through the Center for Rural Health. .

The goal of the BIWP is to improve the access to culturally appropriate services for battered immigrant women, thereby ensuring their rights under the Violence Against Women Act(VAWA), and its mission of safety and empowerment for immigrant women and children victims of sexual and domestic violence.



The Battered Immigrant Women Task Forces have trained thousands of community service providers including law enforcement, health care professionals, educators, victim advocates, legal service providers and community members regarding rights and proper response to victims and survivors. The task forces have brought together key individuals from multiple sectors of their communities to develop and implement effective mechanisms for coordinated response and support for immigrant victims of violence, as well as for conducting provider training and building awareness regarding battered immigrant women's rights. Most recently, their efforts have culminated in the development of a coordinated community response protocol specifically addressing the unique needs of battered immigrant women. The project has developed a tool kit for developing a coordinated community response which is available on the College web site.

- Ingram M, McClelland DJ, Martin J, Caballero MF, Mayorga MT, Gillespie K (2010) Experiences of immigrant women who self-petition under the Violence Against Women Act. Violence Against Women. 16; 858-880.

## Environmental Health and Infection Control

Numerous members of our faculty are involved in training and research which focuses on issues of infection control and environmental health issues. **Kelly Reynolds** participated in a training in Nogales, AZ, February 2011. The training was based on results from a research project aimed at *tracking exposure routes of EMS personnel to Methicillin- Resistant Staphylococcus aureus (MRSA) infections* that lead to recommendations for infection control based on education, engineering and enforcement interventions.

In May of 2010 she presented “*Impact of Bleach on the Reduction of Salmonella in Households in Mexico*” at the Clorox Scientific Advisory Board Meeting in San Francisco, CA, The research focused on the survey of 60 households in Mexico to quantitate the relative risk reduction of salmonella infection probabilities due to the designated use of a bleach-based disinfectant in kitchen environments. She also submitted a research publication to the Journal of Food-Safety—“Risk assessment of *Listeria monocytogenes* in queso fresco in Culiacan, Mexico”. The aims of this study were to evaluate the prevalence and types of *Listeria* that may be present in queso fresco obtained from markets in the northwestern state of Sinaloa, Mexico, followed by the use of quantitative microbial risk assessment (QMRA) to address the human health impact associated with the consumption of QF contaminated with *L. monocytogenes*. All of this research and training focuses on important issues of infection control and food contamination relevant to the border region.

**Paloma Beamer** has also been actively engaged in research relevant to the border region including:

- In 2009-2010 an American Cancer Society Institutional Research Grant Committee. *Characterization of Infant’s Exposure to Trichloroethylene: Implications for Cancer*. The objectives of this grant are to quantify TCE in breast milk and assess cancer risk to infants via breast milk and drinking water via a PBPK model. This project was completed in the Nogales, AZ area where wells were recently closed to TCE exposure.
- In 2010-2011 *Outdoor Pesticide Sampling in Yuma: Implications for Interventions to Reduce Farmworker Families’ Exposures*. PI, Young Investigator Research Award. Yuma Friends of Arizona Health Sciences Center. The objective of this project is to obtain multi-media pesticides samples in Yuma to estimate the relative contributions of pesticides that enter the homes via the air from nearby fields with those that enter the homes on people’s shoes and clothes. Another objective is to calculate pesticide residence time in homes.
- 2010-2012 *Pesticide Sampling of Farmworkers’ Homes in Yuma, AZ: Implications for Interventions to Reduce Exposures*. Advisor, NIOSH ERC Small/Pilot Project Program Grant, UCLA.. The objective of this project is to obtain multi-media pesticides samples in Yuma to estimate the relative contributions of pesticides that enter the homes via the air from nearby fields with those that enter the homes on people’s shoes and clothes. Another objective is to calculate pesticide residence time in homes. This is an expansion of the previous study and there is no overlap
- 2011-2012 *Risk Perception, Drinking Water Source and Quality in a Low-Income Latino Community Along the U.S.-Mexico Border*. PI. Faculty Research Grant from UA Water, Environment, and Energy Solutions Initiative Funded by the Technology

Research Initiative Fund. \$39,157.80. The objectives of this project are to determine if there is a difference in water quality between publicly supplied tap water and the actual drinking water used by families in Nogales, AZ and understand the risk perception these families have about their publicly-supplied tap water and alternative drinking water sources.

**Kacey Ernst** is Principal Investigator of the project *On the Edge: Ae. aegypti dynamics at the edge of its natural range*.



*On the Edge: Ae. aegypti dynamics at the edge of its natural range*. This project focuses on determining the dengue transmission potential in the Sonora/Arizona border region. The initial work focuses on the dynamics of the *Ae. aegypti* mosquito and is working to determine if the *Ae. aegypti* residing in the border region are competent for the virus, survive long enough to transmit the virus and are in high enough density to propagate transmission. Another aspect of the work is to examine the spatial and temporal patterns of current transmission in Sonora. The project is working in collaboration with *Universidad de Sonora* and the Sonoran Department of Health to analyze trends in

dengue surveillance data and to determine factors leading to high transmission clusters, particularly in Hermosillo and Obregon. Lastly, the project is collaborating with public health officials in the Office of Border Health to conduct physician education and assist in the development of dengue surveillance in Nogales, Arizona.

## Training and Leadership Development

### Border Health Service Learning Institute

Our College is extremely fortunate to be home to the Border Health Service Learning Institute. Service-learning is a structured learning experience that combines community service with preparation and reflection. It facilitates a process in which students and faculty are engaged with community organizations to provide community service in response to community-identified concerns.



Learning focuses on the context in which service is provided, the connection between service and academic coursework, and our roles as citizens. Our Service Learning Program is a partnership with the Arizona Area Health Education Centers Program at the University of Arizona and the Southeast Arizona Area Health Education Center.

Service learning is a vehicle for strengthening partnerships between health profession schools and communities. It is building a strong commitment to community service and social responsibility in health professions schools, students and faculty and is equipping health professionals with community-oriented competencies necessary to practice in today's changing world. The BHSLI includes specific service learning activities that are accompanied by structured individual and group reflections. Up to fifteen MPH and doctoral students participate every year and the Institute rotates to all of our Arizona border communities, including the Douglas/Agua Prieta area, Ambos Nogales, and Somerton/San Luis/San Luis Rio Colorado area.



### **Leaders Across Borders**

The College collaborated for two years with the U.S.-Mexico Border Health Commission, the Pan American Health Organization, CDC, *el Colegio de Sonora*, *el Colegio de la Frontera Norte*, and *el Instituto Nacional de Salud Publica* to develop and implement the Leaders across Borders Program. The Leaders across Borders Program of the Southwest Public Health Leadership Institute at the University of Arizona Mel and Enid Zuckerman College of Public Health is an advanced 9-month binational leadership development program designed for public health and health care professionals in the U.S.-Mexico border region. Its purpose is to improve the health of communities by strengthening public health leadership capacity, addressing transborder health concerns, and developing a dynamic network of public health professionals in the border region. It achieves this through a unique, multifaceted program that empowers participants to hone their personal, team, and transborder leadership skills. The project supported two cohorts of 20 leaders each from the U.S.-Mexico border region in 2010 and 2011.

In summary we hope that this document provides you with a glimpse of many of our projects,



program and initiatives which focus on the border region. While it does include an exhaustive list of everything that the College is involved in at the border, it is certainly a reflection of our continued commitment to partnerships with community and governmental organizations that focus on building and strengthening healthy communities in the region. We look forward to continuing these collaborations and developing and implementing new partnerships and projects over the next years.

For more information on any of these projects or this report please contact:

Jill Guernsey de Zapien  
Associate Dean for Community Programs  
Mel and Enid Zuckerman College of Public Health  
University of Arizona  
[dezapien@email.arizona.edu](mailto:dezapien@email.arizona.edu)

