Mel and Enid Zuckerman College of Public Health
The University of Arizona

Presents

The 10th Annual Social Justice Symposium
April 15, 2016
Drachman Hall
Welcome to the 10th Annual Social Justice Symposium

The 10th Annual Social Justice Symposium at the Mel and Enid Zuckerman College of Public Health (MEZCOPH) is designed to engage students, faculty, health professionals, and community members in dialogue to cultivate awareness and encourage action in the pursuit of equal justice for all. The event is entirely student-driven with support from MEZCOPH and other sponsors.

Background

The first Social Justice Symposium (SJS) was held on Friday, April 20, 2007, then known as the Social Justice in Health Symposium. Initiated by students in the Center for Health Equity/Project EXPORT fellows program within the Mel and Enid Zuckerman College of Public Health (MEZCOPH), objectives of the one-day conference were and continue to be to showcase strategies and encourage activism to effect change in the realm of social justice and public health. Bringing together students, faculty, community activists, and health professionals, SJS aims to expand participants’ awareness and abilities to critically analyze how social injustices affect health outcomes worldwide with the aim of action at a personal level. Since then, the planning committee has included both undergraduate and graduate students from diverse corners of public health study. Beginning with the initial Social Justice Symposium, student planners and attendees have realized a need for a multidisciplinary and multi-faceted approach to the alleviation of disparities and their underlying issues. We look forward to continuing this one-of-a-kind tradition in our community and thank you for your solidarity and participation.
Acknowledgements

We would like to extend our gratitude to the following sponsors and individuals for making this event a success:

Mel and Enid Zuckerman College of Public Health
The University of Arizona Student/Faculty Interaction Grants Program
Dr. Cecilia Rosales
Western Region Public Health Training Center, Dr. Douglas Taren
Agnese Nelms Haury Program in Environment and Social Justice

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# SESSION THEMES AND ROOM NUMBERS

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Climate Change and Vector Borne Disease — Room A118

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Robert García is a civil rights advocate who engages, educates, and empowers communities for equal access to public resources. He is the Founding Director and Counsel of The City Project, a non-profit legal and policy advocacy team in Los Angeles, California. The City Project works with diverse allies on equal access to (1) healthy green land use through community planning; (2) climate justice; (3) quality education including physical education; (4) health equity; and (5) economic vitality for all, including creating jobs and avoiding displacement. Robert received the President’s Award from the American Public Health Association. PODER Magazine named him one of the Top 100 Latino Green Leaders. Hispanic Business Magazine has recognized him as one of the 100 most influential Latinos in the United States. Robert graduated from Stanford University and Stanford Law School, where he served on the Board of Editors of the Stanford Law Review. He is an Assistant Professor at Charles Drew University of Medicine and Science.

President Barack Obama and federal agencies are catapulting The City Project’s work on green access to the national level. As the President recognized in dedicating the San Gabriel Mountains National Monument, “Too many children, . . . especially children of color, don’t have access to parks where they can run free, breathe fresh air, experience nature, and learn about their environment. This is an issue of social justice.” Conservation isn’t about locking away our natural treasures. “It’s about working with communities to open up our glorious heritage to everybody — young and old, black, white, Latino, Asian, Native American — to make sure everybody can experience these incredible gifts.”

The National Park Service and the US Army Corps of Engineers agree. Their studies on green access and the Santa Monica Mountains, the San Gabriel Mountains, and the Los Angeles River rely on The City Project’s analyses to document that there are disparities in access to green space for people of color and low-income people in Los Angeles, that these disparities contribute to health disparities, and that environmental justice requires agencies to address these disparities. The City Project worked with Ranking Member Raul Grijalva and the House Natural Resources Committee to organize the historic forum on environmental justice, climate, and health. The forum included seven Members of Congress and community advocates at the L.A. River Center in 2015.

Robert has extensive experience in public policy, legal advocacy, mediation, and litigation involving complex social justice, civil rights, human health, environmental, education, and criminal justice matters. He has influenced the investment of over $43 billion in underserved communities, working at the intersection of equal justice, public health, and the built environment. He served as chairman of the Citizens’ School Bond Oversight Committee for five years, helping raise over $27 billion to build new, and modernize existing, public schools as centers of their communities in Los Angeles. He has helped communities create and preserve great urban parks and preserve access to beaches and trails. He has helped diversify support
for and access to state resource bonds, with unprecedented levels of support among communities of color and low-income communities, and billions of dollars for urban parks. He served on the Development Team for the National Park Service Healthy Parks, Healthy People Community Engagement eGuide.

Robert served as an Assistant United States Attorney for the Southern District of New York, and an attorney with the NAACP Legal Defense & Education Fund. He received the President's Award from the California Attorneys for Criminal Justice for helping release Geronimo Pratt, the former Black Panther leader, from prison after 27 years for a crime he did not commit. He represented people on Death Row in Georgia, Florida, and Mississippi. Stanford Law School called him a "civil rights giant" and Stanford Magazine "an inspiration." Robert served on the Justice and Peace Commission for the Archdiocese of Los Angeles under Cardinal Roger Mahony. He is an immigrant who came to the U.S. from Guatemala at age four.

Robert has lectured widely on the vision for healthy parks, schools, and communities. Recent keynote speeches include conferences at the National Recreation and Park Association (NRPA), Johns Hopkins Bloomberg School of Public Health, U.S. Environmental Protection Agency New Partners for Smart Growth, and Smithsonian Anacostia Community Museum. Other presentations include Stanford, Yale, Duke, Harvard Law School, Howard, UCLA, USC, Dalhousie University in Nova Scotia, Canada, FLAC in Dublin, Ireland, Centers for Disease Control (CDC), and National Council of La Raza (NCLR). The City Project [is] working to broaden access to parks and open space for inner-city residents and . . . to fight childhood obesity by guaranteeing that . . . students get enough physical education." — New York Times.
CLOSING PANEL – Integrating Policy & Research into Climate Justice

Moderator: Elva de la Torre

Elva De La Torre has worked in education and training and for over 15 years, and is dedicated to integrating social justice and activism in her work. Her passion for social justice sparked when she served in the Peace Corps as a Health Education Volunteer and Coordinator in Paraguay. Her work with Peace Corps subsequently carried through the next eight years, where she worked as the Training Director in Belize and Suriname. She currently manages Adult Education Programs with Pima Community College. Previously she worked as a Training Specialist with the Community Partnership of Southern Arizona (CPSA), where she oversaw training requirements for new staff in the behavioral health system in Pima County. Elva has also worked with the Primavera Foundation as their Women's Services Manager and with the Pima County Juvenile Court's CASA Advocate Program. She holds a BA in Communication from California State University, Fullerton. Elva serves on the Board of Directors of Tucson Meet Yourself. She volunteers with The Loft Theater and has a weekly music show on 91.3 KXCI called The Wire Service.

Panelist: Ron Barber

Before becoming a Member of Congress, Barber was the Director of a five county Head Start agency in Southern Arizona and later had a 32-year career with the Arizona Division of Developmental Disabilities, serving as District Administrator and as State Director. In 2007, Congresswoman Gabrielle Giffords appointed Barber her District Director. On January 8, 2011, Barber was standing beside Congresswoman Giffords at constituent event when an assassin shot the congresswoman, Barber and 17 others, six people were killed. After the shooting, Barber established The Fund for Civility, Respect and Understanding, which focuses on promoting civil political discourse, preventing bullying in schools and reducing the stigma associated with mental illness. In January 2012, Giffords resigned from office to focus on her recovery. She asked Barber to run for her seat. He won the special election and was sworn into office in June of 2012. He won re-election in November 2012. In Congress Barber served on the House Armed Services Committee, Homeland Security Committee. Barber currently serves on the boards of several community-based organizations including the January 8 Memorial Foundation. He also is a member of the Advisory Council to the Secretary of the U.S. Department of Homeland Security and the Advisory Council to the National Committee to Preserve Social Security and Medicare.

Panelist: Ben McMahan

Ben McMahan joined CLIMAS after completing a Ph.D. in Sociocultural Anthropology at the University of Arizona. His dissertation research analyzed hurricanes and disaster on the U.S. Gulf Coast, focusing on human interactions and risk perception in dynamic and at-risk environmental contexts, landscape change during and after disaster, and social network and policy responses to acute threats of disaster as they intersect with long term environmental issues. He was also a research associate on UA Bureau of Applied Research in Anthropology (BARA) project teams conducting collaborative trans-disciplinary research on the social, economic, and environmental impacts of the US Oil and Gas industry (2007-2011), and the impacts and aftermath of the Deepwater Horizon oil spill (2010-2013). His current work with CLIMAS includes research on heat related vulnerability in the Southwest, climate risk management for electrical utilities, connecting climate science to policy and practice, and the role of outreach and engagement in communicating scientific information and analyses to a diverse audience.
Panelist: Sharon Megdal

Sharon B. Megdal is Director of The University of Arizona Water Resources Research Center (WRRC), an Extension and research unit in the College of Agriculture and Life Sciences. Her work focuses on water policy and water resources management challenges and solutions, on which she writes and frequently speaks. She also holds the titles: Professor and Specialist, Department Soil, Water, and Environmental Science; C.W. & Modene Neely Endowed Professor; and Distinguished Outreach Professor. She serves as Director of the Water Sustainability Program and Co-Director of The University of Arizona Water, Environmental and Energy Solutions Program, both of which are funded by the Technology Research Initiative Fund (TRIF). The geographic scope of Dr. Megdal’s work ranges from local to international. Current projects include: comparative evaluation of water management, policy, and governance in growing, water-scarce regions; groundwater management and governance; groundwater recharge; transboundary aquifer assessment; and Conserve2Enhance™.

Panelist: Stephanie Buechler

Stephanie Buechler serves as an Assistant Research Professor of Environmental Policy, Udall Center for Studies in Public Policy and School of Geography and Development, University of Arizona. Dr. Buechler is an ambassador for Oxfam’s ‘Sister on the Planet’ gender, development and climate change initiative, and a former gender researcher for the International Water Management Institute. Her research focuses on gender, water, climate change, adaptation, urban, peri-urban and rural agricultural production and processing, food security and livelihoods in semi-arid regions of Mexico, India and Tucson, Arizona. One of her current research projects with Dr. Daoqin Tong, funded by the Haury program in Environment and Social Justice, examines food access in community and backyard gardens within lower income food deserts in Tucson and ways in which areas around these gardens can be planted with pollinator friendly species that also reduce surrounding temperatures.

Panelist: Sabrina Helm

Dr. Sabrina Helm received her Ph.D. in business administration from the University of Duesseldorf, Germany. Prior to joining UA in 2008, she was Professor of Strategic Marketing at Witten/Herdecke University, the premier private university in Germany. Dr. Helm is Director of the Graduate Program in Retailing & Consumer Sciences, and co-directs CESI, the Consumers, Environment & Sustainability Initiative which focuses on facilitating collaborative, innovative and interdisciplinary efforts in research, teaching and outreach. Among other research interests, Dr. Helm focuses on consumer mindfulness as well as consumer rituals, attitudes and behavior associated with sustainable consumption and climate change.
THEME 1: Effects on Vulnerable Populations
Room A112
Session 1: 10:30 am - 10:55 am

“Heat Related Illness and Interventions in Pima County Vulnerable Populations”

Presenter: Erika Barrett, MPH

Erika Barrett is a Research Specialist in the Department of Epidemiology and Biostatistics at the Mel and Enid Zuckerman College of Public Health and the Pima County Health Department. She is currently engaged in collaborative research in the fields of climate change and health, respiratory infections, foodborne illness, non-pharmaceutical interventions, and the use of new tools and technologies in public health research.

Abstract:
BACKGROUND: A comprehensive understanding of heat related illness (HRI) at the local level is crucial to determine vulnerable populations and develop adequate prevention strategies within the community. As climate change progresses and temperatures in the southwest continue to increase, HRI morbidity and mortality becomes increasingly important.

OBJECTIVE: To identify vulnerable populations in Pima County, AZ with a presentation of HRI.

METHODS: We conducted a retrospective case series evaluation of all HRI emergency department and hospital visits from 2012-2014 to understand the circumstances of HRI events. We identified HRI utilizing hospital discharge data (HDD) and reviewed medical records to determine the circumstance and other factors.

RESULTS: Common circumstances included recreational, occupational, routine activities, and a constellation of homelessness, substance abuse, and mental illness (HSM). Elders and HSM were at particular risk of severe outcomes and were identified as key vulnerable populations within Pima County. Cases in the HSM category had a higher proportion of hospitalizations than cases in any other group.

CONCLUSIONS and IMPLICATIONS for POLICY & PRACTICE: As extreme heat extends beyond the peak summer months of June, July, and August interventions should target vulnerable populations to alleviate the burden of HRI in a community. We will showcase the efforts of the Pima County Health Department to reduce HRI in conjunction with a diverse group of stakeholders from the local, state, private, and faith sectors in our community. Finally we will conclude with policy implications and steps other groups can take to serve these communities.
Session 2: 10:55 am - 11:20 am

“Human Health in a Warmer World: The Challenge of Multiple Impacts, and the Role of the COP21 Negotiations”

Presenters: America Lutz

America N. Lutz-Ley is a PhD candidate in Arid Lands Resource Sciences working on her dissertation project on human adaptation to global change in rural communities of the San Miguel watershed, in arid northwest Mexico. She has been a fellow of the Fulbright García-Robles program, the Mexican Council for Science and Technology, and the Institute of the Environment’s Carson-Haury program.

Abstract:

Global warming is probably the biggest challenge that society will face during the 21st century. The IPCC reports that the three preceding decades have been progressively warmer, and the entire 1983-2012 period is the warmest on record for the Northern Hemisphere during the last 1400 years. The impacts include modifications in hydrological cycles and ecosystems' functions, and most importantly, in human development and well-being. Undernutrition related to food insecurity, increasing coastal flood mortality, and higher incidence of respiratory, diarrheal, heat-related, and vector-borne diseases, are some of the expected impacts on human health, especially among those social groups that have historically been more vulnerable or neglected in health research, policy, and practice. The United Nations’ efforts to mitigate global warming and help societies to adapt converge in the Conference of the Parties, held annually since 1995. The last COP was held in Paris in 2015 and as a result, after several years of inconclusive negotiations, the country members achieved a legally binding agreement to keep warming below 2°C by 2050. The objective of this presentation is to describe the vivid experience of the 2015 negotiations with special emphasis on the social justice implications for vulnerable groups in climate policy in general, and in health policy in particular. Categories derived from socio-economic, age, gender, ethnicity, and geographical characteristics of people are explored in connection to global warming impacts. From this analysis, the necessity for integral and interdisciplinary approaches to human health and well-being in the context of global change is stressed.

While this presentation will offer a first-hand description of the COP21-CMP11 negotiations, we relate this process to the impacts of global warming on human health with the objective of covering adequately the topics of the Symposium. In doing this, we recognize that -in fact- no one is immune, but this vulnerability is not uniform either. Health vulnerability to climate change builds upon previous disadvantages defined by the characteristics of social groups (i.e. socio-economic status, gender, ethnicity, age, rural vs. urban location, among others). Furthermore we identify cases in which the interaction between these characteristics (intersectionality) makes human health impacts more complex and difficult to address. Our proposal to meet this challenge is the development of interdisciplinary and systemic thinking when we design human health research or intervention projects.
Session 3: 11:20 am - 11:45 am

“Qualitative Evaluation of Disability Services in Nogales, Mexico”

Presenters: Sam Packard and Mario Aubert-Vasquez

People living with disabilities often face serious barriers to economic and social well-being worldwide. In Northern Mexico, these are often further complicated by rural living conditions and a lack of access to necessary medical services and equipment. When available, services are often neither sustainable nor appropriate to the needs of the patient. This gap in services translates to significant economic and public health challenges.

ARSOBO (ARizona/SOnora/BOrder) Projects for Inclusion was founded with the mission of assisting in alleviating the barriers faced by people living with disabilities by providing appropriate, adaptive-technology, low-cost, assisted devices that improve access and participation in their communities. Medical devices are specially designed for the needs of people living in rural Mexico at an affordable cost, including prosthetics, all-terrain wheelchairs, and hearing aids. The medical devices are constructed by expert technician who use the devices they make for others. The demand is great with some clients travelling >8 hours to the workshop in Nogales.

To better understand clients’ experiences and assess ARSOBO’s impact in the community, interviews were conducted with ARSOBO’s clients. A binational team of students completed 35 home visits to recipients of medical devices. Each home visit consisted of semi-structured interview addressing the impacts of ARSOBO’s devices and services on their personal, family, and social life.

In this presentation, we share the process of planning and implementing fieldwork for this evaluation effort, the narratives which emerged from the interviews, lessons learned from the qualitative analysis of interview data, and recommendations moving forward.

Session 4: 11:45 am - 12:10 pm

“Assessing the influence of living and working conditions on alcohol consumption of agricultural workers in Mexico: a cross sectional study using the Encuesta Nacional de Jornaleros 2009 survey”

Presenter: Luis Valdez, MPH

Agricultural workers are often housed in inadequate living conditions that lack the most basic services, are subject to work-related abuses and injuries, and have increased exposure to occupational hazards. The evidence examining if these factors increase use of alcohol is unclear. We used data from the 2009 Encuesta Nacional de Jornaleros (ENJO; Mexico’s National Agricultural Workers Survey) to examine the relationships between housing and working conditions and alcohol consumption among 3,132 agricultural workers in Mexico. Residing in employer provided housing, adequacy of housing materials, having access to basic services, and access to luxury items were considered when evaluating living conditions. Working conditions were determined by including exposure to occupational hazards, injuries, and work-related abuse. We used logistic regression to assess the influence of housing and working conditions on alcohol consumption. Workers who reported living in inadequately built homes (OR=0.84; 95%CI=0.72, 0.98; p<0.05) and those with limited access to luxury...
items (OR=0.69; 95%CI=0.52, 0.94; p<0.01), were less likely to consume alcohol than their counterparts who lived in better conditions. In contrast, workers that lived in employer provided housing (OR=1.79; 95%CI=1.40, 2.31; p<0.0001) and those who experienced work-related abuse (OR=1.48; 95%CI=1.18, 1.86; p<0.0001) were more likely to consume alcohol than their counterparts. Living and working conditions of farmworkers may have important but understudied effects on the alcohol consumption and abuse trends of agricultural workers. We believe that our findings warrant future exploration to examine the specific mechanisms through which adverse housing and working conditions affect the alcohol consumption outcomes of agricultural workers.

RELEVANCE: As the demand for inexpensive, quality produce continues to grow, so does the agricultural business in Northern Mexico and successively its demand for cheap labor. It is known that migrant agricultural workers often live in substandard housing and are subject to physical and psychological maltreatment, however the health impact of these factors is understudied. The findings of this study contribute to the body of knowledge regarding the correlates of negative health outcomes of a vulnerable population.
THEME 2:

Creating Resilient Communities

Room A116

Session 1: 10:30 am - 10:55 am

“Building Resilient Neighborhoods (BRN) for Climate Related Extreme Weather Events”

Presenter: Barbara Warren, MD, MPH

Dr. Barbara Warren is a graduate of Northwestern U. Medical School and the U.of Michigan School of Public Health and worked in community medicine and health services administration for 40 years. On faculty of Rush, Uof Az, and U of Colorado Colleges of Medicine. She is a founding member and is the current Director of the AZ Chapter of Physicians for Social Responsibility.

Abstract:
OBJECTIVE: The presenter will demonstrate a working model for community outreach and education to assist communities, especially in high risk populations, to understand regional climate change related extreme weather event risks and build cohesiveness and preparedness in neighborhoods. Participants will learn how to predict, prepare for and prevent adverse health outcomes in climate related disasters, giving special attention to those who are most vulnerable.

IMPLICATIONS for POLICY, PRACTICE and DELIVERY: Climate change has created many devastating extreme weather events resulting in significant numbers of death, morbidity and displacement among populations in the wakes of these events. Low income populations, the very young and the elderly, and those with special needs (e.g. language barriers, disabilities, or mentally ill) create higher risks for adverse health events or death. Sociological studies indicate that one of the most significant variables leading to adverse outcomes in community areas or neighborhoods is lack of social cohesion. The BRN project in Tucson, Arizona has developed materials, format and a presentation for neighborhood based workshops to educate members of our community on the predicted extreme weather events for our region (extreme heat and power outage), the need for social cohesion, definitions of vulnerability, risks and appropriate responses for exposures, and guidelines for emergency resource planning and sharing. Materials are printed in English and Spanish. With a CDC funded sub-grant, we will focus on vulnerable populations including low income, Spanish speaking, elderly and homebound, tribes, and refugees to identify special needs and evaluate effectiveness and differences in approaches needed for each population.
Session 2: 10:55 am - 11:20 am

Garment Revolution: Fed By Threads and the Way to Sustainable Clothing Production

Presenter: Alok Appadurai

Alok Appadurai is a lifelong social entrepreneur and launched Fed By Threads to change the world through fashion. Fed By Threads is the first humanitarian organic sweatshop-free American-made clothing store that feeds Americans in need. Alok is also a writer, vegetarian, and proud father who loves small houses and bicycles!

Abstract:
Clothing production is the third most polluting industry behind animal agriculture and the petroleum industry, taking an enormous toll on the air quality, clean drinking water supplies, soil health, and beyond. But Fed By Threads is part of a new path towards sustainable organic clothing, free of GMO’s, pesticides, formaldehyde, and other harmful ingredients that make today’s clothing so harmful on the planet! 1 in 6 people on earth is somehow involved in clothing production, so the choices we make about clothing have global impact. Fed By Threads’ business model is an example for future leaders: beyond our social mission to feed Americans in need, we only carry sustainable apparel that is made in America without sweatshop labor. This is novel in an era dominated by cheap fast fashion like H&M or overpriced designer brands like Gucci, which all scour the globe for cheap labor and often use unsustainable materials. There is a revolution happening that is driven by consumers who are voting for change with their dollars!

Session 3: 11:20 am - 11:45 am

“Growing Healthy Communities through Urban Forestry: Social and Environmental Action Projects for Building Climate Resilient Communities”

Presenter: Katie Gannon

Climate change poses pressing human health and environmental and social justice challenges. In the desert southwest a major public health concern is the impact of heat waves on climate-vulnerable populations including youth, elderly, people with disabilities and health conditions, individuals who work outdoors, and households without air conditioning. Climate change reinforces and amplifies disparities within low income and marginalized communities causing increased public health burdens and additional economic and social challenges. The urban forest is critically important urban infrastructure that both mitigates the impact of severe weather events and helps communities adapt to changing conditions. In addition to improving the resiliency of communities, the tree canopy helps develop climate-resilient individuals by fostering physical, psychological and emotional health.

Using GIS and LIDAR data, Pima Association of Governments has mapped Pima County’s tree canopy. It’s no surprise that low income neighborhoods have significantly lower tree canopy than more affluent neighborhoods. Using these maps, Trees for Tucson, a 25 year old urban forestry program of Tucson Clean & Beautiful, Inc., works with neighborhoods with below-
average tree canopy to plant and care for trees. By engaging communities in hands-on tree-related action projects, participants learn new skills, develop new relationships, and become invested in the ongoing health, care, protection, and improvement of the urban forest.

Trees provide numerous social, ecological and environmental benefits. People need trees and trees need people. Engaging low income communities in stewarding trees builds climate resilient individuals and communities.

Session 4: 11:45 am - 12:10 pm

“The Manzo Model: Leveraging Food Heritage for Health Outcomes in Barrio Hollywood”

Presenter: Moses Thompson

In 2006, Manzo Elementary School students came together with the community of Barrio Hollywood to break ground on a blighted vacant lot across the street from the school. In a cloud of dust, a habitat restoration project became the impetus for the now nationally recognized Manzo Ecology Program. As the program evolved towards food production, parents and grandparents came to school with stories of backyard vegetable gardens and fruit tree orchards—a contemporary reflection of the more than 4100 years of food cultivation on the floodplain of the Santa Cruz where Barrio Hollywood now stands. By focusing on Sonoran Desert landrace crops and traditional knowledge, food production is made culturally relevant to the 98% Mexican-American, Native American Manzo student population. Manzo grown produce is made available to the community through student-run famers markets and on the cafeteria menu through garden-to-cafeteria events.
THEME 3:

Climate Change and Vector Borne Disease

Room A118

Session 1: 10:30 am - 10:55 am

“Assessment of Climate and Health Impacts on Vector-Borne Diseases and Valley Fever in Arizona”

Presenter: Quyymun Rabby, BS

BACKGROUND: In 2012, the Centers for Disease Control and Prevention developed the Building Resilience Against Climate Effects (BRACE) framework to initiate state and local health department preparation for projected impacts of climate change.

OBJECTIVES: The following project was an assessment report for Arizona health departments on the implications of climate change on vector-borne diseases and valley fever.

METHODS: The report was divided into two sections: evidence and vulnerability assessment. Using county disease rates, the evidence section outlined knowledge on the association between climate and vector-borne diseases and valley fever in Arizona. The vulnerability assessment section identified vulnerable populations within the state. Additionally, University of Arizona Geographic Information Systems Technology (UAGIST) used social vulnerability indices to map vulnerable populations.

RESULTS: West Nile Virus and valley fever are key climate associated diseases of concern in Arizona. Based on annually reported cases (2001-2014), high incidences of West Nile Virus cases were seen in less populated, rural counties such as Graham and Gila, whereas valley fever was seen in more densely populated, urban counties such as Maricopa, Pinal, and Pima. The vulnerability analysis performed by UAGIST did not show county-specific trends but rather high variability in vulnerability in areas of more densely populated regions of Tribal lands, farmlands, pockets of urban areas, and lands near large expanses of desert such as the southern border of Yuma county.

CONCLUSION: The Vulnerability Assessment identified diseases of concern in Arizona, counties with high disease incidence and vulnerable populations to set the foundation for future work related to climate change and health.
“Temporal and Spatial Modeling of EEE Vector Distribution and Abundance in Connecticut”

Presenter: Chelsi White, MS

Currently work as a Research Coordinator for the Arizona Laserchron Center running one of our mass spectrometers for geochronology and geochemistry. Recently finished my MS in Epidemiology here at the University of Arizona working with Heidi Brown, Kacey Ernst, and Gregg Garfin.

Abstract:
Eastern Equine Encephalitis virus is a vector-borne virus amplified by the *Culiseta melanura* mosquito in an enzootic avian cycle, causing high morbidity and mortality to horses and humans when contracted as incidental hosts. The virus is distributed across most of the eastern United States, Canada, and Gulf coast, and has been expanding in geographic range and season of activity over time. Spatial-temporal trends in *Cs. melanura* abundance were correlated with available meteorological (temperature and precipitation) and remotely sensed environmental data for the period of 1997-2012 in Connecticut. The effects of inter-annual changes in precipitation, temperature, and groundwater levels on *Cs. melanura* abundances using time-series linear regression and cross-correlation analyses were inconclusive. Habitat modeling using logistic regression and landscape-based predictive variables demonstrated strong efficiency (46.2%) and acceptable sensitivity and specificity (65.6 and 78.6%, respectively) using NDVI difference and distance from palustrine areas as predictive factors. Remotely sensed data can improve the understanding of vector abundance patterns, helping to forecast future outbreaks and regional expansions by guiding surveillance efforts.

“Health effects of climate: the US Southwest and Arizona”

Presenter: Heidi Brown, PhD, MPH

Dr Brown’s research focus is on the environmental factors that promote infections disease transmission. She works on a variety of vector-borne and zoonotic diseases with an effort to better understand transmission and thus control human disease risk.

Abstract:
The impacts of climate change are well established, but researchers are still working to quantify the effects the changing climate with have on human health. This talk provides an over view of the expected effects of climate on human health with a specific focus on those aspects important in the US Southwest: heat, wildfire and certain infectious diseases. The talk ends with a discussion of co-benefits and public health planning.
Session 4: 11:45 am - 12:10 pm

“Citizen Science Mosquito Surveillance for Under-Resourced Communities: A Tool Against Zika”

Presenter: Steven Erly

Steven has grown up in the Tucson area and has long been interested in the topics of social justice and health equality. He is currently a Master’s in Public Health Student with a concentration in Epidemiology. His research interests are global health, vector-borne disease, and epidemiologic methodology.

Abstract:
BACKGROUND: Despite the reemergence of mosquito-borne diseases, adequate mosquito surveillance can be costly for under-resourced communities. Citizen science has been proposed as a way to expand capacity. The goal of this project was to provide traditional and community-run surveillance systems to Santa Cruz County and to compare their effectiveness.

METHODS: Community members were recruited through presentations at meetings of local organizations. Oviposition traps were distributed to volunteers to collect weekly information about mosquito presence. A parallel surveillance network was maintained by the health department. The data from these networks were used to describe the seasonal distribution of Aedes aegypti. The proportion of positive traps from two trap networks were compared to evaluate the consistency between the systems.

RESULTS: A total 45 traps were distributed to community members with 19 used; 13 traps distributed to the health department and all used. After 24 weeks of trapping, mosquitoes were found in the majority of the populated areas of Santa Cruz County. Aedes aegypti were caught from June until the end of the project in October, with the proportion of positive traps peaking in August. The community traps showed a lower proportion of positive traps (29% vs. 92%) but expanded the spatial coverage of the surveillance network. The temporal and spatial trends of the two surveillance networks mirrored each other.

CONCLUSIONS: The project was a success in providing mosquito surveillance to Santa Cruz County. Citizen science surveillance systems were demonstrated to be useful, if imperfect, tools for expanding surveillance capacity in low-resource settings. The reemergence of dengue fever, chikungunya, and zika have put billions of people at risk worldwide, but have disproportionately impacted less wealthy nations. Mosquito surveillance has proven a critical tool for preparing for and stopping these diseases, but it is prohibitively costly for many settings. Even in the United States, many counties simply cannot afford adequate surveillance. It has been proposed that citizen-science surveillance projects would be a cost-effective way to bolster surveillance capacity in low-resource settings, but up until this point, the idea was untested. Given that the range of the Aedes aegypti vector is predicted to expand in response to global climate change, this project is a timely exploration into the feasibility of such a project.
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