Updated on: January 21, 2017

HECTOR A. OLVERA PHD, PE.

ASSOCIATE PROFESSOR
DIRECTOR OF RESEARCH
SCHOOL OF NURSING
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EDUCATION

GRADUATE CERTIFICATE | July 2016
UNIVERSITY OF MICHIGAN, ANN ARBOR, MI
EPIDEMIOLOGY

DOCTOR OF PHILOSOPHY | May 2006
UNIVERSITY OF TEXAS AT EL PASO, EL PASO, TX
ENVIRONMENTAL SCIENCE AND ENGINEERING

MASTERS OF SCIENCE | May 2002
UNIVERSITY OF TEXAS AT EL PASO, EL PASO, TX
ENVIRONMENTAL ENGINEERING

BACHELOR OF SCIENCE | December 1999
UNIVERSIDAD AUTONOMA DE CIUDAD JUAREZ, JUAREZ, MEXICO
CIVIL ENGINEERING

FELLOWSHIPS AND AWARDS

JPB ENVIRONMENTAL HEALTH FELLOW | Oct 2014-Dec 2017
SCHOOL OF PUBLIC HEALTH, HARVARD UNIVERSITY, CAMBRIDGE, MA
ENVIRONMENTAL HEALTH/ENVIRONMENTAL JUSTICE,
MENTORS: JACK SPENGLER, LAURA KUBZANSKY, GEORGE SLAV ICH (UCLA), MATT CAMPEN
RESEARCH: LIFE STRESS, AIR POLLUTION, INFLAMMATION, DEPRESSION AND CARDIOVASCULAR DISEASE

NIMHD HEALTH DISPARITIES RESEARCH INSTITUTE | Aug 15-19, 2016
NATIONAL INSTITUTE ON MINORITY HEALTH AND HEALTH DISPARITIES, BETHESDA, MD
RESEARCH: COMMUNITY-BASED PARTICIPATORY RESEARCH/HISPANIC YOUTH MENTAL HEALTH

LEADERSHIP DEVELOPMENT INSTITUTE | Sep 2012-July 2013
UNIVERSITY OF TEXAS AT EL PASO, EL PASO, TX
RESEARCH: AUTHENTIC LEADERSHIP THEORY AND DEVELOPMENT

POST-DOCTORAL FELLOW | July 2011
CENTER FOR ENVIRONMENTAL RESOURCE MANAGEMENT/LOVELACE RESPIRATORY RESEARCH INSTITUTE
UNIVERSITY OF TEXAS AT EL PASO, EL PASO, TX
ENVIRONMENTAL HEALTH/PARTICLE LUNG DEPOSITION,
MENTORS: NICK PINGITORE JR., YUNG-SUNG CHENG
RESEARCH: NANO-PARTICLE LUNG DEPOSITION IN CHILDREN

AWARDS

- ✓ OUTSTANDING EFFORTS IN SECURING EXTERNAL FUNDING, OFFICE OF RESEARCH AND SPONSORED PROJECTS, UNIVERSITY OF TEXAS AT EL PASO, YEARS 2015 |2016
- ✓ 1ST PLACE, GRADUATE STUDENT PAPER, INTERNATIONAL TEST AND EVALUATION ASSOCIATION, MODELING & SIMULATION CONFERENCE | LAS CRUCES, NM, AUGUST 2005
- ✓ RESEARCH STIPEND, U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF AIR AND RADIATION | 2002–2006
- ✓ UNIVERSITY OF TEXAS AT EL PASO, HONOR CIVIL ENGINEERING STUDENT SCHOLARSHIP | 2001-2002

PROFESSIONAL CERTIFICATIONS AND TRAINING

- **Professional Engineer License**, Environmental, State of Texas, Since March 2010
- Leadership Strategies for the Researcher, Harvard University, Boston MA, October 2016
- Epigenetic Control of Gene Expression, The University of Melbourne, Online, May 2016
- Linear Regression Modeling, University of Michigan, Ann Arbor, MI, Feb 2015
- Applied Structural Equation Modeling, University of Michigan, Ann Arbor, MI, Nov 2014
- Introduction & Advanced Bayesian Disease Mapping, Charleston SC, March/October 2012
- CALPUFF Training Workshop, Dallas, Texas, Feb 2012/ MOVES Project Level Workshop, Tucson AZ, Dec 2011
- Preparing for an Academic Career in the Geosciences Workshop. Stanford University, Palo Alto, CA, July 2006.

ACADEMIC EXPERIENCE

SCHOOL OF NURSING - UNIVERSITY OF TEXAS, EL PASO, TX | 2015 - PRESENT

- ASSOCIATE PROFESSOR | DIRECTOR OF RESEARCH

My role as Director of Research is to increase the research productivity, capacity, and quality of the School of Nursing and to engage nursing faculty in interdisciplinary research.

Duties: Develop and oversee the implementation of the Strategic Plan for Research and engage and support nursing faculty in the development of nursing relevant research programs.

NOTABLE ACHIEVEMENTS:

- ✓ Created the school's Biobehavioral Research Laboratory to support interdisplinary patient-orientated research.
- ✓ Formed a Research Steering Committee to oversee the execution of the Strategic Plan for Research.
- ✓ Lead the integration of the School of Nursing as a research ambassador site for the Harvard's Nurses III study.
- ✓ Established a research collaboration with the Hoffman Program on Chemicals and Health at Harvard T.H. Chan School of Public Health to Study Chemical Sensitivities among Nurses
- ✓ Spearheaded the design and launch of the School's Nursing Engagement and Wellness Study (NEWS).
- ✓ Formed the School's First Nursing Research Support Program.
- ✓ Launched new Interdisciplinary Research Programs on Wellness, Environmental Health, Youth's Health, and Health Disparities.
- ✓ Assisted early-career faculty in securing external funding.

HISPANIC HEALTH DISPARITIES RESEARCH CENTER - UNIVERSITY OF TEXAS, EL PASO, TX | 2012 - PRESENT

- RESEARCH ASSISTANT PROFESSOR

The HHDRC's mission is to advance the eradication of health disparity among the population of the US/Mexico border region.

Duties: Lead the center's Environmental Health Research Laboratory.

NOTABLE ACHIEVEMENTS:

- ✓ Principal Investigator NIH SCORE grant to conduct a multi-level study to determine the influences of the built-environment on obesity among Hispanic children.
- ✓ Principal Investigator of NIH funded pilot to assess the effectiveness of an intervention to improve vascular function amongst Hispanic Elders by reducing exposure to near-highway ultrafine particles.
- ✓ Principal Investigator of Interdisciplinary and Translational Research Project to develop community-based interventions to attain health equity via skill development amongst youth and women residents of government subsidized housing communities.
- ✓ Founded the Alpha Youth Leadership Academy to help underserved youth living in government subsidized housing communities develop a set of life skills to increase their academic and professional competitiveness.
- ✓ Co-Investigator of NIH-R01 grant on early signs of atherosclerosis in at-risk Hispanic children due to exposure to urban ultrafine particles.
- ✓ Established and managed key collaborative partnerships with the Housing Authority of the City of El Paso, the regional school districts, and the National Alliance on Hispanic Health (NAHH) in support of the HHDRC research program.
- ✓ Developed Community Based Participatory Research (CBPR) capacity for the HHDRC.
- ✓ Community Advisory Board Member of Montana Vista, Texas to oversee the impacts of the new El Paso Electric Co. power plant.

CENTER FOR ENVIRONMENTAL RESOURCE MANAGEMENT - UNIVERSITY OF TEXAS, EL PASO, TX | 2006 - PRESENT

- RESEARCH ASSISTANT PROFESSOR, 2011-PRESENT | RESEARCH ASSOCIATE 2006-2011

The Center for Environmental Resource Management provides university-wide leadership and coordination for environmentally related research, education, and outreach activities.

Duties: Lead the center research activities on air quality/environmental health.

NOTABLE ACHIEVEMENTS:

- ✓ Principal Investigator of NIH/ARCH training grant to develop a control exposure system that measures deposition and dose of ultrafine particles in the human respiratory tract.
- ✓ Co-Investigator in a NIH P20 grant supplement that added an environmental core, (co-investigator) to the Hispanic Health Disparities Research Center.
- ✓ Oversaw a five year regional PM_{10}, $PM_{2.5}$, VOC, NO_x, O_3 ambient air monitoring campaign as part of an epidemiological study on children's asthma.
- ✓ Conducted regional ambient and indoor PM and UFP exposure assessment via Land Use Regression modeling.
- ✓ Characterize fine and ultrafine particle number variations in regional "hot-spots".

SCHOOL OF NURSING - UNIVERSITY OF TEXAS, EL PASO, TX | 2012 - 2015

- SENIOR RESEARCH ADVISOR TO THE DEAN

My role as senior research advisor was to assist the dean increase the research productivity, capacity, and quality within the School of Nursing.

Duties: Develop a Strategic Plan for Research and to engage and support nursing faculty in the development of research.

NOTABLE ACHIEVEMENTS:

- ✓ Established a Research Steering Committee within the School of Nursing.
- ✓ Directed the development of the Strategic Plan for Research | 2015-2018.
- ✓ Founded the Nursing and Health Care Leadership Institute.
- ✓ Directed the development of a P20 grant for a Research Center of Excellence on Self-Management.
- ✓ Developed the framework for a research development support program for SON faculty and students.
- ✓ Engaged, supported, and mentored nursing faculty on interdisciplinary research development.

- DIRECTOR OF THE NURSING AND HEALTH CARE LEADERSHIP INSTITUTE | APRIL 1ST, 2014 - PRESENT

The Nursing and Health Care Leadership Institute was developed to assist health care organizations effectively implement leadership development strategies that integrate evidence-based practices, towards the attainment of measurable evidence of excellence such as the Magnet status certification. The NHCLI is supported by an interdisciplinary research program on leadership development that informs our educational and training approaches.

Duties: Oversee the activities of the NHCLI.

NOTABLE ACHIEVEMENTS:

- ✓ Developed the Strategic Plan for the NHCLI.
- ✓ Founded the Nursing and Healthcare Leadership Institute to conduct research, enhance the SON educational programs, and deliver on-site training to the regional healthcare community.
- ✓ Developed a conceptual framework for the development of leadership skills among healthcare professionals.
- ✓ Engaged most CNOs from the regional health care organizations into the NHCLI advisory committee.
- ✓ Lead the planning committee for the Centennial Conference on Health Care Leadership (May 2014).

NATIONAL ALLIANCE FOR HISPANIC HEALTH, WASHINGTON, DC | 2010

- SCIENTIFIC CONSULTANT

The Washington D.C. based National Alliance for Hispanic Health is a science-substantiated nonprofit organization that focuses on improving the health and well-being of Hispanics in the United States.

Duties: Assist in the execution of a national health study by training community leaders and analyzing air quality data.

NOTABLE ACHIEVEMENTS:

- ✓ Oversaw an exposure assessment protocol for a public health study funded by the W.K. Kellogg Foundation.
- ✓ Trained community partners in the collection of neighborhood-level air pollution data.
- ✓ The results of the study strongly urged for the promulgation of school siting and traffic management regulations to complement the USEPA *Healthy Schools* initiative.

CENTER FOR SPACE EXPLORATION AND TECHNOLOGY RESEARCH - UNIVERSITY OF TEXAS, EL PASO, TX | 2004–2006

- DOCTORAL RESEARCH ASSISTANT

The CSETR is a university research center funded through the Group 5 NASA Cooperative Agreement. The center actively conducts a wide range of analytical, experimental and computational research in energy and propulsion engineering with a particular interest in green propulsion, in-situ resource utilizations, space structures, clean power generation, solar energy and carbon dioxide sequestrations.

Duties: Develop computational fluid dynamics models and evaluate design alternatives to reduce the impact of accidental releases from cryogenic hydrogen fuel storage tanks.

NOTABLE ACHIEVEMENTS:

- ✓ Published a series of studies that demonstrated the inapplicability of USEPA sponsored dispersion models (CALPUFF and AERMOD) to the analysis of dispersion of highly buoyant plumes such as H_2 and HF.
- ✓ 1st Place, Graduate Student Paper, International Test and Evaluation Association, Modeling & Simulation Conference | Las Cruces, NM, August 2005.

AIR QUALITY RESEARCH LABORATORY - UNIVERSITY OF TEXAS, EL PASO, TX | 2002–2003

- GRADUATE RESEARCH ASSISTANT

The AQRL focuses on conducting regional air quality research and houses gravimetric, aerosol science, computational modeling, and GIS facilities. The AQRL also manages a fully equipped mobile air quality laboratory.

Duties: Conduct dispersion modeling and GIS related activities.

NOTABLE ACHIEVEMENTS:

- ✓ Developed a GIS-based emergency response/impact assessment tool in collaboration with the Army Research Laboratory at White Sands Missile Range.
- ✓ Served as a liaison with Mexican environmental governmental agencies.

ENVIRONMENTAL DEFENSE FUND, EL PASO, TX | 1999–2002

- STUDENT ENGINEERING / RESEARCH INTERN

Environmental Defense Fund is a nonprofit environmental advocacy group known for its work on issues including global warming, ecosystem restoration, oceans, and human health; and for achieving long-lasting solutions based on the sound scientific research.

Duties: Support numerous research and engineering projects, such as:

- TCEQ - Modeling unpaved road PM emissions,
- TCEQ - Emission inventory for PM area sources,
- TCEQ - Low-emission traditional brick-making kiln,
  - *+ Structural Design, Construction, and Testing of a Low-Emission Brick Kiln*
  - *+ Redesigned kiln and improved its cost-effectiveness by 46%*

PROFESSIONAL EXPERIENCE

VIVA ENVIRONMENTAL, EL PASO, TX | 2003–2004

- ENVIRONMENTAL ENGINEER / PROJECT MANAGER

Viva Environmental is an engineering consulting firm specialized in emergency response, hazardous material management, remediation, and regulatory compliance services.

Duties: Provide engineering consultation services to El Paso Electric Company and El Paso Water Utilities on environmental compliance with New Source Review, Title V, and Public Health Security and Bioterrorism Preparedness and Response Act of 2002.

NOTABLE ACHIEVEMENTS:

- ✓ Supported the successful obtainment of three Title V permits for the power utility in El Paso, Texas.
- ✓ Singlehandedly managed emission inventory, pollutant dispersion modeling, and preparation of corresponding permit sections. (Power Utility)
- ✓ Supervised a series of feasibility studies to evaluate alternative means for achieving cost-effective NOx and PM emission offsets to comply with the Non-Attainment Review in Ozone Nonattainment Areas for a New (Modification) Source Air Permits. (Power Utility)
  - Provided oversight in assessing the feasibility of transforming the entire vehicle fleet of the utility from gasoline to propane gas combustion, resulting in attainment of NOx and VOC emission offsets.
  - Took part in conceptualizing and modeling a residential home for an arid environment with innovative energy efficiency features; implemented DOE energy plus model. (Power Utility I)

- ✓ Played a key role as the primary point of contact for the client; developed and maintained alliances by identifying and resolving their complex issues and concerns in a timely manner, which resulted in total customer satisfaction, boosted referrals and repeat business. (Power Utility I)
- ✓ Significantly improved water infrastructure that was vulnerable to terrorist threats by administering the evaluation of vulnerability assessment required after 9/11. (Water Utility Infrastructure)
- ✓ Developed an emergency response plan for a regional water system as required by federal and state mandates; efficiently responded to the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.

ACADEMIC SERVICE ACTIVITIES

▫ Chair – University, Research Committee, UTEP	2015 – Present
▫ Co-Chair – Search Committee, School of Nursing, UTEP	2016 – Present
▫ Member – Executive Faculty Committee, Env. Sc. and Eng. PhD Program, UTEP	2016 – Present
▫ Member – Research Steering Committee, School of Nursing, UTEP	2016 – Present
▫ Member – Graduate Studies Committee, School of Nursing, UTEP	2015 – Present

PROFESSIONAL SERVICE ACTIVITIES

- ▫ Member – University Medical Center, Risk Assessment Advisory Committee
- ▫ Member – Montana-Vista-El Paso Electric Community Advisory Panel
- ▫ Technical Member – US/Mexico Joint Advisory Committee for Border Air Quality
- ▫ Member – Steering Committee *Healthy Kids – Healthy Communities,* Pan American Health Organization
- ▫ Reviewer – Air & Waste Management Association
- ▫ Reviewer – Atmospheric Environment
- ▫ Reviewer – Journal of Hazardous Waste
- ▫ Contributor to EPA funded Conference on Health and Environmental Impacts Associated with Traffic Congestion at US/Mexico International Land Ports of Entry. San Diego, CA. May 2012

CLASSROOM TEACHING EXPERIENCE

- ▫ NURS 6340, Advanced Seminar in Clinical Genetics, Doctor of Nursing Practice Program, School of Nursing, University of Texas at El Paso. Fall 2016. Co-taught.
- ▫ NURS 6360, Translating Research into Practice, Doctor of Nursing Practice Program, School of Nursing, University of Texas at El Paso. Summer 2016. Co-taught.
- ▫ Developed a new course as part of the Nursing and Health Care Leadership Institute under the Undergraduate Nursing Program: *Authentic Leadership for Nurses*. Approval of course pending. School of Nursing, University of Texas at El Paso.
- ▫ Developed the 5-year curricular plan for the Alpha Youth Leadership Academy. The Academy's plan includes courses on entrepreneurship, positive psychology, decision analysis, human biology, communication, English, world events, and leadership. The Academy is delivered during the Spring and Fall semesters and each course is 2 credit hours. I teach the leadership, positive psychology, and decision analysis courses. The Academy serves students enrolled in middle or high school.
- ▫ Invited Instructor (Air Pollution Science; Air Pollution Measurement; Air Pollution Modeling). Course: *Environmental Health.* Spring Semester, 2012. Graduate Program, School of Public Health. University of Texas at El Paso.
- ▫ Developed and delivered a 6-week (12 class) summer study group on Computational Fluid Dynamics. Department of Mechanical Engineering, University of Texas at El Paso.

INVITED LECTURES

- ▪ *EJ Implications of the potential synergy of socio-environmental factors: at the US/MX border*. Seminar, USEPA, Research Triangle Park. Durham, NC. March 2015.
- ▪ *Authentic Leadership in Health Care Settings.* Lecture. Southwest University. El Paso, Texas. July, 2014

- *Evidence-based leadership development.* Lecture. Centennial Conference on Healthcare Leadership. The Nursing and Health Care Leadership Institute. School of Nursing. University of Texas at El Paso. El Paso, Texas. May, 2014
- *Authentic Leadership.* Lecture. Centennial Conference on Healthcare Leadership. The Nursing and Health Care Leadership Institute. School of Nursing. University of Texas at El Paso. El Paso, Texas. May, 2014
- *The environmental health hazards of nanotechnology.* Keynote Lecture. 5th International Conference CIPITECH, Universidad Tecnologica de Ciudad Juarez. Ciudad Juarez Mexico, September, 2012
- *Urban characterization of ultrafine particle and hydrocarbon concentrations; are UFP vectors for benzene?* Doctoral Seminar Series. College of Pharmacy. University of New Mexico, August, 2011
- *Environmental Engineering Applications of Computational Fluid Dynamics. Annual Symposium on Mechanics.* Instituto Tecnologico Superior de Centla. Villa Hermosa, Tabasco, Mexico, September, 2006
- *Urban Risks of a Hydrogen-Based Energy System.* Regional Conference on Environmental Engineering Innovation. University of Texas of the Permian Basin. Odessa, Texas, December, 2005

GRANT RESEARCH SUPPORT

CURRENT

NIH/NIEHS | R01, $1,500,000 (Direct Cost) Campen (PI) Aug 2016 – July 2021

This study aims to translationally assess atherogenic impacts of inhaled particulate matter obtained from communities with a history of mixed metals contamination. The working model relates to complex PM interactions in the lung that lead to secondary circulatory products, such as oxidized LDL cholesterol (oxLDL), that induce vascular endothelial inflammatory responses. Immunomodulatory receptors, such as CD36, TLR4, and the lectin-like receptor for oxLDL (LOX-1) mediate vascular responses to other solid and gaseous components of air pollution. The impact of inhaled metal mixtures in driving chronic vascular innate immune responses is poorly understood. I will lead the air dispersion modeling tasks.

NIH/NIEHS | R01, $900,000 (Direct Cost) **Olvera** (Co-PI) Apr 2016 – Mar 2019

This ViCTER study aims to expand the Parent R01 grant (Campen, PI) in two directions, namely using human exposure studies and examining the potential role for dysfunctional high-density lipoprotein to mediate systemic cardiovascular health effects. In Project 1, I will conduct a real-world exposure scenario to test the gas-particle interaction concept in human subjects at UTEP. Jesus Araujo (UCLA) is also a co-PI of this study.

Harvard University | $48,000 (Direct Cost) **Olvera** (PI) March 2016 – Feb 2017

This study aims to explore the interactive effect of chronic exposure to psychosocial stress and chemical exposure on the etiology of chemical sensitivity symptoms among nursing students and early career nurse professionals. Specifically, we will evaluate the connections between early life stress, pro-inflammatory reactivity and the microbiome and their interactive effect on the susceptibility to chemical sensitivities.

JPB/Harvard School of Public Health | Junior Faculty Fellow $350,000 **Olvera** (PI) Oct 2014 – Dec 2017

This study will aims at exploring if life stress, especially during childhood, is associated with a pro-inflammatory phenotype (PIP) measured by increased cytokine reactivity to acute stress and/or acute $PM_{2.5}$ exposure. Inflammatory reactivity of healthy young adults to acute PM/stress exposure, indexed by levels of the inflammatory markers IL-1β, CRP, IL-6, and TNF-α, will be characterized and associations between their inflammatory reactivity and life stress exposure will be examined. Through this fellowship Dr. Olvera will expand his skillset and conduct foundational research to impulse a regional program on environmental health disparities focused on the intersection of chronic stress and environmental exposure.

Stern Foundation | $20,000 (Direct Cost) **Olvera** (PI) September 2016 – August 2017

The objective of this pilot study is to gather preliminary data and determine the link between heart disease risk, life stress levels and the health of microvascular blood vessels studied via non-invasive fundus imaging among at least 500 residents of El Paso, both males and females between 18 and 35 years of age.

NIH/NIEHS | R01, $750,000 (Direct Cost) Armijos (PI) Nov 2012 – Nov 2016

This grant supports a research study to explore early signs of atherosclerosis and other cardiopulmonary impacts in a population of children living in highly polluted areas of the El Paso, Texas region. Specifically the impact of both chronic and acute ultrafine particle exposure on cardiopulmonary health of pre-teens is being examined. I am overseeing the exposure assessment.

COMPLETED:

NIH/NHLBI | 1 SC2 HL110780-01 $450,000 **Olvera** (PI) May 2011 – Apr 2015

Geographic and Multilevel Influences of Neighborhood, Schooland Residential Environments on the Development of Obesity among Schoolchildren in a Border Community: The study goal is to examine the geographic and multilevel influences of the built environment on the development of obesity among 24,000 primarily Hispanic (80%), low-income school children (ages 6-9) in El Paso, TX.

UTEP Provost Office | Level 2 Interdiciplinary Research Program Gosselink (PI) Sep 2014 – Dec 2015

A study to determine the feasibility to assess the biological responses of exposure to specific light wavelengths and stress endpoints.

NIH/NIMHD | 3 P20 MD002287 05S1, $525,000 (Direct Cost) Provencio-Vasquez (PI) Sep 2011 – June 2015

This grant supports the expansion of the Hispanic Health Disparities Research Center (HHDRC) by adding an Environmental Core to focus on determining and diminishing environmental and social drivers of health disparities in the region. Specifically, I manage the environmental health research laboratory established through the environmental core as well as overseeing a multi-level (community-school-indoor) exposure assessment to explore built environmental drivers of health disparity in the region. I am also spearheading an interdisciplinary translational research program on human development amongst youth.

NIH/NIEHS | P20-Pilot, $15,000 (Direct Cost) **Olvera** (PI) Aug 2013 – July 2015

This grant supports a pilot study to determine the feasibility of reducing cardiovascular disease risk among Hispanic elders chronically exposed to ultrafine (<100 nm) particles emitted by vehicles on major highways, via the use of high-volume HEPA filters.

UTEP Provost Office | Level 2 Interdiciplinary Research Program $20,000 **Olvera** (PI) Feb 2012 – Aug 2013

Socio-Ecology of Hispanics: Translational Research Agenda for the Human Development of Hispanics in the U.S. The goal is to develop a translational research program on sustainability and human development of Hispanics in the U.S. centered on a social ecological framework that unites natural and socio-cultural domains, transcends fields of study, and translates academic research into action. The program is founded on the idea that is through the holistic comprehension of the ecology of humans that innovative and effective solutions to persistent social and sustainability problems might emerge.

TCEQ | Rider 8, $400,000 Li (PI) Sep 2011- Dec 2011

Rider 8 Ozone Reduction Program for El Paso, Texas. The project's main goal is to assess long-term regional attainment conditions for Ozone concentrations. Contributed to the development of the conceptual model for two ozone episodes in 2006 and 2008, and to the emission inventory evaluation. The inventory will be employed in a photochemistry model (CAMx) to corroborate the assumptions of the conceptual model. The results will be used by TCEQ to develop the State Implementation Plan for El Paso, Texas.

NIH/NIEHS | S11 ES013339, $100,000 **Olvera** (PI) Aug 08- Jul 11

The objective of this study was to develop and test a methodology to measure ultrafine particle lung deposition in children. An innovative system was employed to perform a preliminary examination of the influence of asthma, Hispanic background, and age on the variability of the size-dependent deposited fraction (*i.e.*, inhaled particles retained in the respiratory tract) of natural ambient ultrafine particles (UFP) in a group of Hispanic asthmatic children and their siblings.

EPA | EM 83395501, $75,000 **Olvera** (PI) Aug 08 – Sep 10

This study aimed at characterizing the air quality, particularly ultrafine particle levels, near the customs inspection area at the International Bridge of Americas port of entry between the U.S. and Mexico. The ambient particle concentrations and traffic data was analyzed and corresponding levels of particle concentrations and size distributions associated with heavy-duty diesel traffic were identified with principal component analysis and the MOVES model.

NIH/NIEHS | S11 ES013339 $5,117,224 Pingitore (PI) Aug 08 - Jul10

The UTEP-UNM ARCH Program on Border Asthma was a multi-disciplinary study on the prevalence of asthma in underserved Hispanic sectors of the region and the respective associations with environmental conditions. I led the region-wide human exposure component of this multi-year and multi-institutional study.

EPA/BECC | Contract $75,000 Li (PI) Aug 08 - Sep 10

This study aimed at characterizing the impacts of multiple paving activities in northern Mexico. The study supported the development of a mobile air quality and multiple monitoring campaigns throughout the border region, which I oversaw.

REFEREED PUBLICATIONS

(NAMES IN GREY INDICTAE STUDENTS; UNDERGRADUATES ARE INDICATED BY AN UNDERLINE)

- Solis G., **Olvera H.A.,** Castillo R. *Fall injuries in older adults in a USA-Mexico border community: Personal characteristics, fall event, and emergency medical system utilization.* Equidad International Welfare Policies and Social Work Journal. March 20, 2015.
- Grineski, S. E., Collins, T. W., & **Olvera**, **H.A.** Local variability in the impacts of residential particulate matter and pest exposure on children's wheezing severity: a geographically weighted regression analysis of environmental health justice. *Population and Environment*, September 2015: 37(1) 22-43.
- **Olvera H.A**., Jimenez O., Provencio-Vasquez E. *Modeling particle number concentrations along Interstate 10 in El Paso, Texas.* Atmospheric Environment, December 2014, 98:581-590, DOI: 10.1016/j.atmosenv.2014.09.030
- Mata H., Flores M., Castaneda E., Medina-Jerez W., Lachica J., Smith C., **Olvera H.A**., *Health, hope, and human development: Building capacity in public housing communities on the U.S. – Mexico border.* Journal of Health Care for the Poor and Underserved (2013); 24(4):1432-9. doi: 10.1353/hpu.2013.0168.
- **Olvera HA.,** Lopez M., Guerrero V., Garcia H., Li W-W. *Ultrafine particle levels at an International port of entry between the US and Mexico: Exposure implications for users, workers, and neighbors.* Journal of Exposure Science and Environmental Epidemiology, January 16, 2012. DOI:10.1038/jes.2012.119
- Gonzales, M., Myers, O., Smith, L., **Olvera HA.,** Mukerjee, S., Li, W-W., Amaya, M., Burchiel, S., Berwik, M., Pingitore, NE. *Evaluation of land use regression models for NO2 in El Paso, Texas, USA.* Science of the Total Environment (2012), doi:10.1016/j.scitotenv.2012.05.062 *(In print).*
- **Olvera HA.,** Perez, D., Clague, JW., Cheng, Y-S., Li, W-W., Amaya, M., Burchiel, S., Berwik, M., Pingitore, NE. The Effect of Ventilation, Age, and Asthmatic Condition on Ultrafine Particle Deposition in Children. Pulmonary Medicine. Special issue: Early Life Opportunities for Prevention of Asthma, Allergy, and COPD (PAAC), October 2012.
- **Olvera HA**., M. Garcia, W.-W. Li, et al., *Principal Component Analysis Optimization of a Land Use Regression Model with Small Monitoring Network.* Science of the Total Environment 425; 27-32, 2012.
- **Olvera HA.,** W.-W. Li, and H. Garcia, *Air Quality Characterization at the Mexican Customs Inspection Area at the International Bridge of the Americas*, in *Project No. A-08-4*, Southwest Consortium for Environmental Research and Policy, Editor. 2011: San Diego, CA.
- Lauer FT., Mitchell LA., Bedrick E., McDonald JD., Lee W-Y, Li W-W, **Olvera HA**., Amaya MA., Berwick M., Gonzales M., Currey R., Pingitore Jr NE., Burchiel SE. *Temporal-Spatial analysis of U.S.- Mexico border environmental fine and coarse PM air sample extract activity in human bronchial epithelial cells*. Toxicology and Applied Pharmacology, 2009.
- Lee D-W., Zietsman J., Mohamadreza F., Li W-W., **Olvera HA**., Storey JME., Kranendonk L. *Investigations of in-cab air quality of a truck residing in an electrified truck stop*. Journal of the Transportation Research Board, 2009.

- **Olvera HA**., Choudhuri A., Li, W-W., *Effects of Plume Buoyancy and Momentum on the Near-Wake Flow Structure and Dispersion Behind an Idealized Building.* Journal of Wind Engineering and Industrial Aerodynamics, 2007.
- **Olvera HA**., Choudhuri A., *Numerical Simulations of Hydrogen Dispersion in the Vicinity of a Building Under Several Stratifications.* International Journal of Hydrogen Energy, 2006.
- **Olvera HA**., Phillips T. Numerical simulation of hydrogen dispersion in the vicinity of a cubical building; comparisons between uniform and non-uniform approach flows. International Test and Evaluation Association, Modeling and Simulation Conference. First place winner of graduate student paper contest, 2005.

CONFERENCE PRESENTATIONS

- **Olvera, HA.** *Dean's Symposium: How does where you live affect your health?* Panel Presentation: High-Risk Populations and Strategies to Improve Health. School of Public Health Boston University. December 1, 2016. Boston, MA.
- **Olvera, HA.** *The biological mechanisms that link poverty and disease, and increase the vulnerability to the environment.* 2015 Keynote Address at the III International Conference on Environmental and Occupational Health. September 8-11, 2015. Tunja, Colombia.
- **Olvera, HA.** *Investigacion en Salud Ambiental: Casos en un area binacional.* Keynote Address at 1er Taller Internacional de Salud Ambiental en la Comunidad y en Instituciones de Salud. Fundacion Universitaria del Area Andina. September 7, 2015. Bogota, Colombia.
- **Olvera, HA.** *The epigenetic link between poverty, disease and the environment.* Scientific seminar at the 2nd Border Biomedical Research Center Symposium | Health Disparities: From Molecules to Disease. El Paso, Texas. September 2015.
- **Olvera, HA.** *Evidence-based leadership development: A review of the literature.* 2014 Centennial Conference on Health Care Leadership. Nursing and Health Care Leadership Institute. School of Nursing, University of Texas at El Paso, May 9, 2014. El Paso, Texas.
- **Olvera, HA.** *Authentic Leadership: An ideal model for professional and personal well-being.* 2014 Centennial Conference on Health Care Leadership. Nursing and Health Care Leadership Institute. School of Nursing, University of Texas at El Paso, May 9, 2014. El Paso, Texas.
- Provencio-Vasquez E., Grineski S., **Olvera, HA.,** et al., *Hispanic Health Disparities Research Center; Environmental Core.* 2012 Summit on the Science of Eliminating Health Disparities. Dec 17-19, 2012. National Harbor, Maryland.
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- **Olvera HA**., Li W-W. *Development of a visualization tool for chemical spill emergencies using simulated high-resolution wind fields*. ACHMM 2004 Annual Conference – Managing Your Odds for Success. ACHHM. Las Vegas, NV. 2004.
- **Olvera HA**., Li W-W. *A GIS-based methodology for area source emission estimates allocation to sub-county levels*. Workshop on Innovative Methods for Emission-Inventory Development and Evaluation. NARSTO. Austin, TX. 2003.

COMPUTATIONAL SKILLS

- ArcGIS, AutoCAD,
- C++ & Fortran,
- StarCD *(CFD)*,
- STATA, SAS, SPSS, & R,
- Mathematica & MATLAB,
- WinBUGS,
- Sigma-Plot,
- Adobe Photoshop,
- Microsoft Project / Merlin,
- Microsoft Office Suite

PROFESSIONAL AFFILIATIONS

- Member, American Public Health Association
- Member, National Environmental Health Association
- Member, Chi Epsilon; Civil Engineers Honor Society

Member, Sigma-Xi, The Scientific Research Society

ESTABLISHED INTERDISCIPLINARY RESEARCH COLLABORATIONS

- Dr. John Spengler, School of Public Health, Harvard University, Cambridge, MA.
- Dr. Laura Kubzansky, School of Public Health, Harvard University, Cambridge, MA.
- Dr. Jane Delgado, National Alliance for Hispanic Health, Washington D.C.
- Dr. Mathew Campen, University of New Mexico, Albuquerque, NM.
- Dr. Melissa Gonzales, University of New Mexico, Albuquerque, NM.
- Dr. Yung-Sung Cheng, Lovelace Respiratory Research Institute, Albuquerque, NM.
- Maria C. Flores, Housing Authority of the City of El Paso, El Paso TX
- Jerry Kurtzweg, Office of Air and Radiation, U.S. Environmental Protection Agency
- Adrian Vazquez, Director of the Servicio Meteorologico Nacional, Mexico D.F.
- Ron Cionco, Army Research Laboratory, White Sands Missile Range.
- Carlos Rincon, Environmental Protection Agency, Liaison Office, El Paso, TX.
- Dr. Scott Burchiel, University of New Mexico, Albuquerque, NM.
- Dr. Tom Cahill, University of California at Davis, Davis, CA.
- Dr. Humberto Garcia, Instituto Tecnologico de Estudios Superiores de Monterrey, Ciudad Juarez, Mexico.

MENTORED STUDENTS

- Estrella Herrera – Chair, Ph.D. Environmental Science and Engineering (Current Student)
- Esther Salinas – Ph.D. Environmental Science and Engineering (Current Student)
- Ismael Beltran – M.S. Environmental Engineering (Current Student)
- Monica Amaton – B.S. Environmental Sciences (Current Student)
- Fabian Marquez – B.S. Psychology (Current Student)
- Tanya Torees – B.S. Journalism (Current Student)
- Maria Hidalgo – B.S. Social Work
- Diana Flores - B.S. Psychology
- Dora Holguin – B.S. Education
- Perla Torres – Ph.D. Environmental Science and Engineering
- Omar Altamira – B.S. Biological Sciences
- Jacqueline Lechuga - B.S. Psychology
- Mario Lopez – B.S. Environmental Science
- Alejandro Franco - B.S. Civil Engineering
- Lucia Noe - B.S. Industrial Engineering
- Omar Martinez – MBA
- Lindsey Hunter – B.S. Nursing
- Alexis Vargas – B.S. Kinesiology
- Jasmine Cordova – B.S. Biological Sciences
- Marisol Salado - B.S. Civil Engineering
- Mariana Chew – Ph.D. Environmental Science and Engineering (Committee)
- Omar Jimenez - B.S. Civil Engineering
- Jordan Beard – B.S. Education/Psychology
- Oscar Juarez - B.S. Mechanical Engineering
- Mario Garcia – M.S. Environmental Engineering – (Committee Member)
- Sofia Escajeda – B.S. Civil Engineering
- Daniel Perez – B.S. Civil Engineering
- Alan Perez – B.S. Mechanical Engineering
- Jorge Sias – B.S. Civil Engineering
- Joe Baca – B.S. Civil Engineering
- Joe Pinon - M.S. Environmental Engineering – (Committee Member)
- Nancy Garcia - M.S. Environmental Engineering – (Committee Member)
- Veronica Guerrero - M.S. Environmental Engineering – (Committee Member)
- Jessica Gamez - M.S. Environmental Engineering – (Committee Member)

OTHER PERSONAL INFORMATION

- Fluent in Spanish
- 2+ years of formal theology and philosophy studies
- GPAs: 3.8 (B.S.), 3.9 (M.S.), 4.0 (Ph.D.)
- Possesses advanced photography and graphic design skills
- NIH Commons ID: holvera

VOLUNTEERED ACTIVITIES

- **Founder and Director,** Alpha Youth Leadership Academy – HACEP/UTEP, 2012-Present
- **Founder and Coordinator,** Mexican Chapter - International Dominican Youth Movement, 1999 - 2005
- **Civil Engineering Student,** Construction Assistance - Housing Program, 1997-1998
- **Tepeyac,** Senior Care Center, Juarez Mexico, 1995-1999 (Volunteer)
- **Virgen de Guadalupe,** Mental Care institution, Juarez Mexico, 1995-1999 (Volunteer)