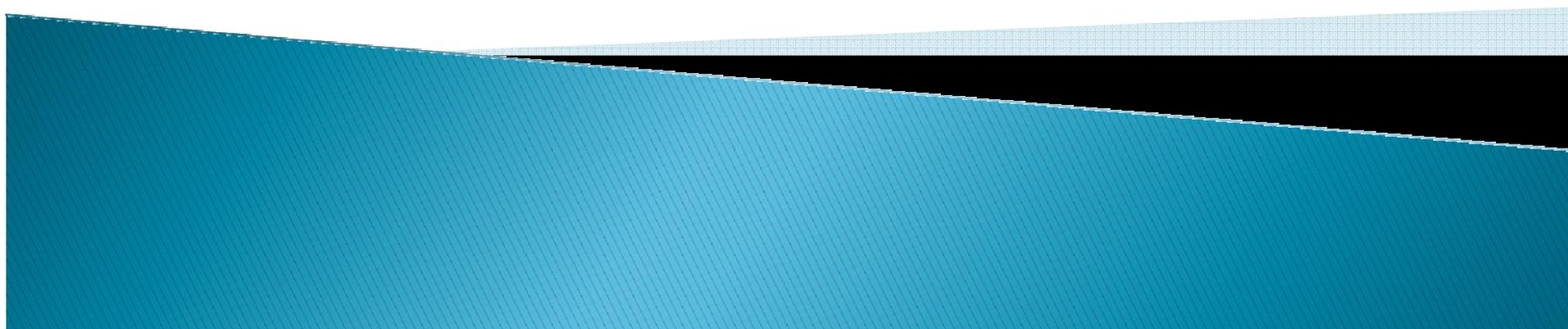


US EPA ARCHIVE DOCUMENT

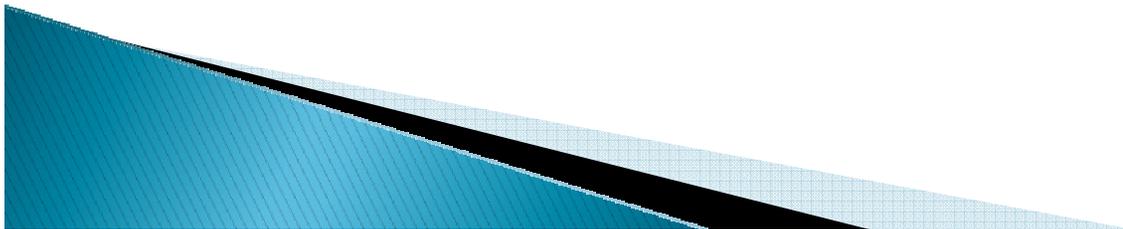
# Environmental Health Work Group Report

May 22, 2007



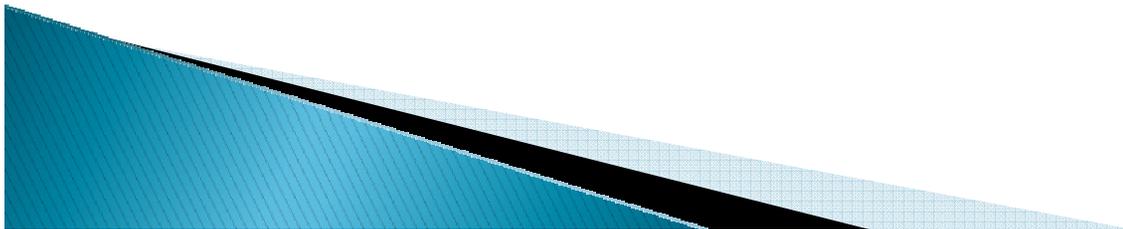
# EHWG

- ▶ Organization
- ▶ Charge to working groups
- ▶ Air working group response
- ▶ Environmental health-related research activities



# EHWG organization

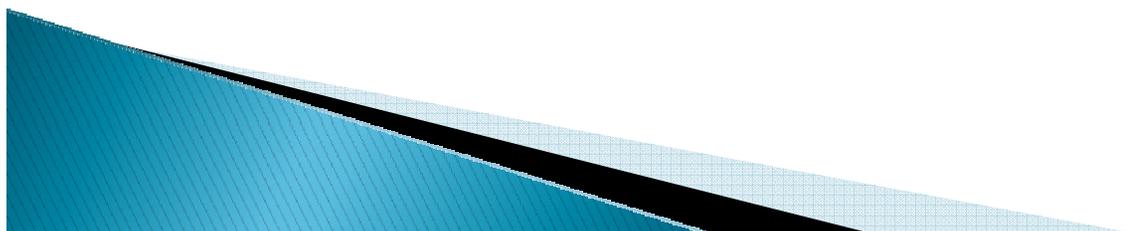
- ▶ Three working groups
  - Air
  - Water
  - Pesticides



# Instructions to working groups

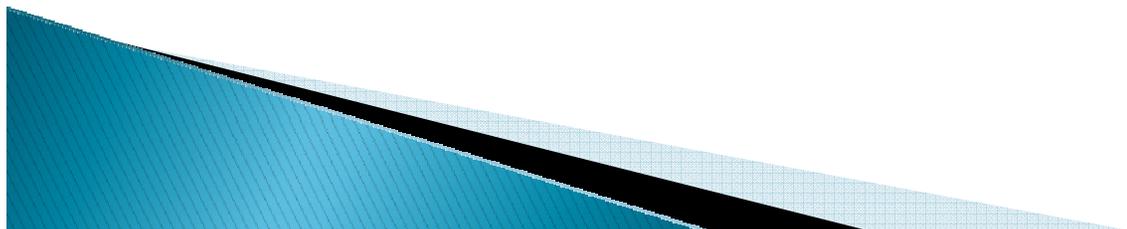
## April, 2006

1. Binational & border-wide
2. Review environmental health priority areas:
  - a. Environmental monitoring
  - b. Health Surveillance
  - c. Capacity Building
  - d. Communication
  - e. Policy Development
3. Recommendations



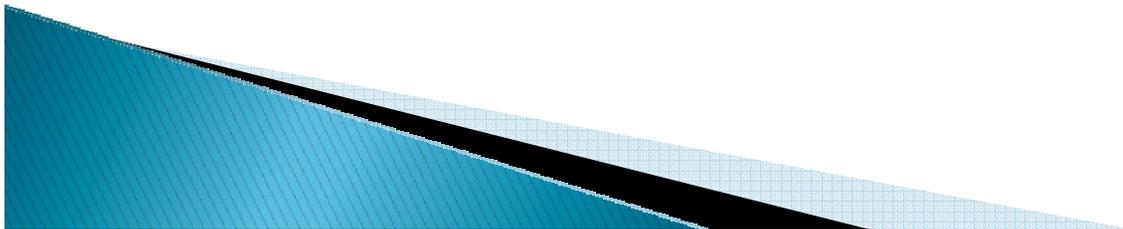
# Recommendations: Environmental Monitoring

- ▶ APF:
  - Conduct research monitoring in areas without SLAM to identify potential problems and the need for regular SLAM
  - Deploy mobile air toxics monitoring lab for the border
  - Find mechanisms to fund adequate SLAM in Mexico
  - Review US SLAM for adequacy



# Comments: Health Surveillance

- ▶ **Complex problem**; much can be said. In general, the words inadequate, inconsistent, and incomplete come to mind.
- ▶ **Not easy to fix**: harmonizing definitions and codes may be impossible.
- ▶ **May not necessarily be a priority (for air)**.
- ▶ **Possible first steps**: research projects to correlate ambient concentrations, personal exposure and health outcome prevalence in areas with known problems.
- ▶ **Some research ongoing**: examples later.



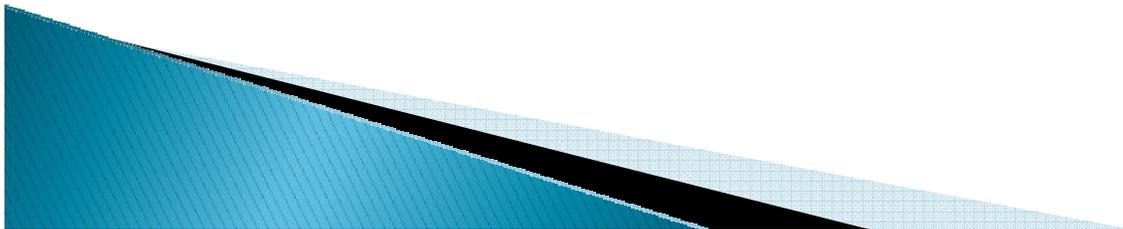
# Capacity Building

- ▶ **Need:**
  - Technical capacity in managing and operating SLAM systems.
  - Local experts to explain AQ and effects to their communities.
- ▶ **Recommendations:**
  - APF: identify start-up and long-term training needs for SLAM systems in Mexican communities
  - EHWG: Identify a cadre of environmental and health professionals & provide them training on AQ, its effects, risks, actions to reduce risks, and communication skills to enable them to serve as local experts.



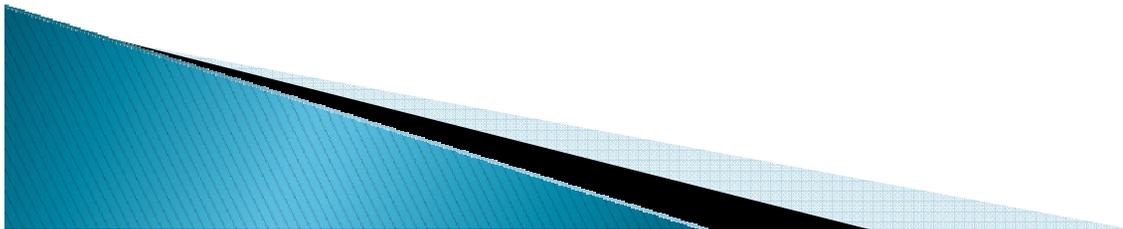
# Communication: (1)

- ▶ Need for various “peoples” to have a more sophisticated understanding of AQ.
  - General public
  - Vulnerable populations and their care takers (VP&CT)
  - School personnel
  - Health professionals
  - Environmental Professionals
  - The media
  - Political leaders



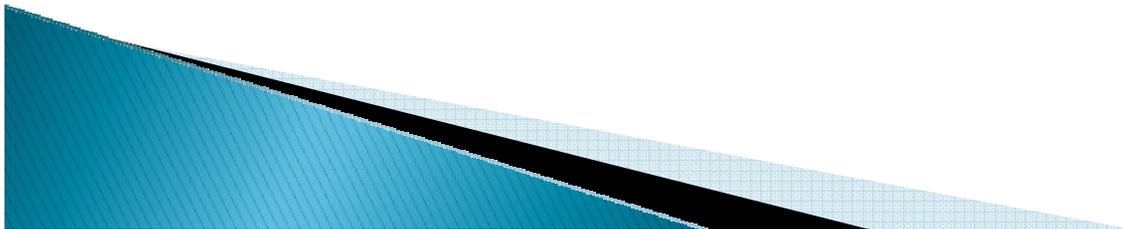
# Communication: (2)

- ▶ **Actions:** Collaborate with the Communications Task Force to:
  - design media targeted for the various peoples
  - sponsor media campaigns for the various peoples
  
- ▶ **Priority:**
  - Vulnerable populations & care takers
  - Schools
  - Media



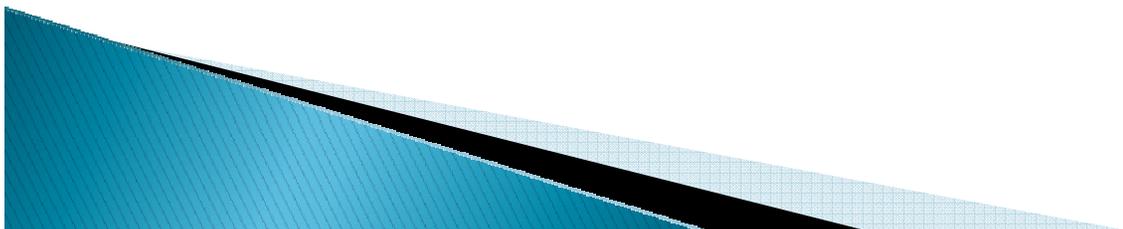
# Policy Development

- ▶ AQ standards are health-based, therefore
- ▶ Leave this job to the APF.

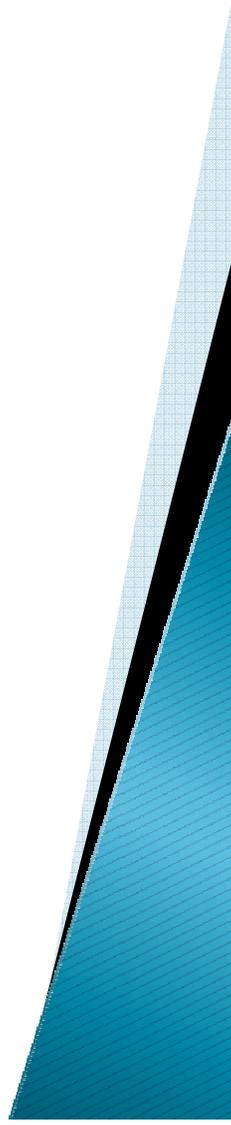


# Next steps:

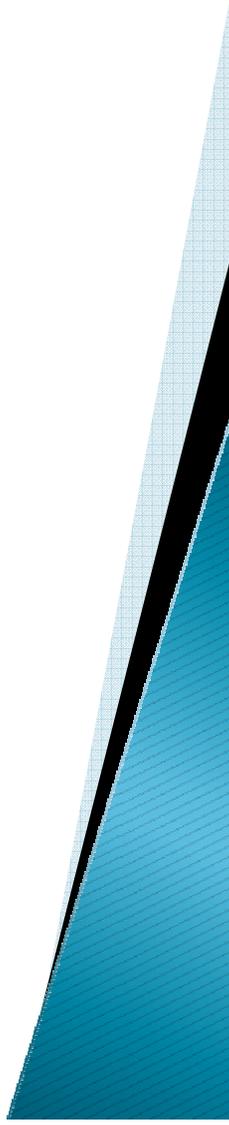
- ▶ Capacity building through a “Citizens Air Quality Academy”
  - 2–3 day course
  - Border specific
  - Border relevant
- ▶ Topics
  - Air quality
  - Health Effects
  - Vulnerabilities, risks and risk reduction
  - How to communicate



# Air Quality Health Effects Research

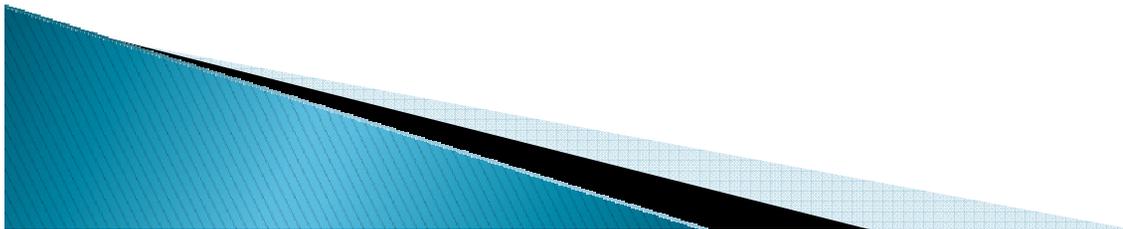


Ground Level Ozone Concentrations  
based on  
Satellite Observations  
and  
Surface Monitoring  
in support of  
the US–Mexico Border 2012 Program:  
Environmental Health Decisions



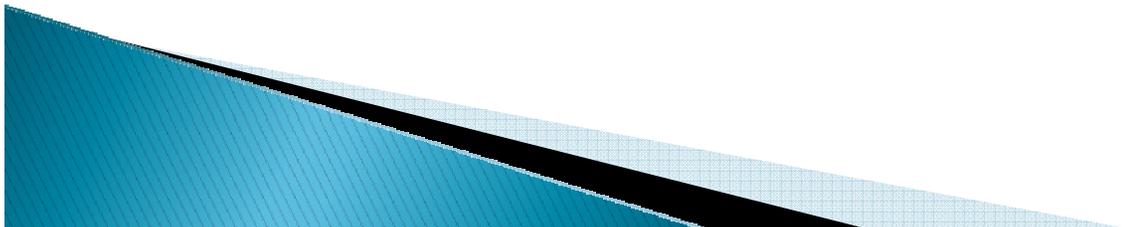
# Ground Level Ozone ...

- ▶ Project lead:
  - Vance Fong. Debbie Lowe, Jan Baxter – EPA Rgn 9
- ▶ Collaborators:
  - EPA: Rgn 6, ORD, OAR, OEI/Bdr 2012 Indicators Prog
  - NASA, PAHO, SCERP, UC Berkeley, Cal Inst Tech/JPL
- ▶ Period:
  - Jan 06 –Sep 07



# Ground Level Ozone ... (2)

- ▶ Objectives:
  - Assess usability of satellite data to predict ground level ozone pollution
  - Assist state and local officials in defining ozone-related health issues where satellite data can be applied
  - Develop a support tool to aid environmental health decisions incorporating both satellite and ground-level monitoring data



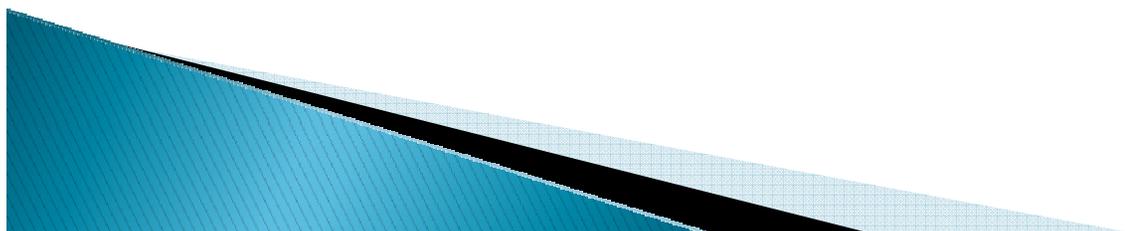
# A Binational Pilot Study Examining the Impact of Traffic-Related Air Pollution on Asthmatic Children

## ▶ Investigators:

- J Sarnat, Emory Univ SPH
- S Sarnat, Emory Univ SPH
- F. Holguin, Emory Univ School of Medicine/CDC
- S Flores, IMSS, Cd Juarez
- W-W Li, UTEP

## ▶ Period:

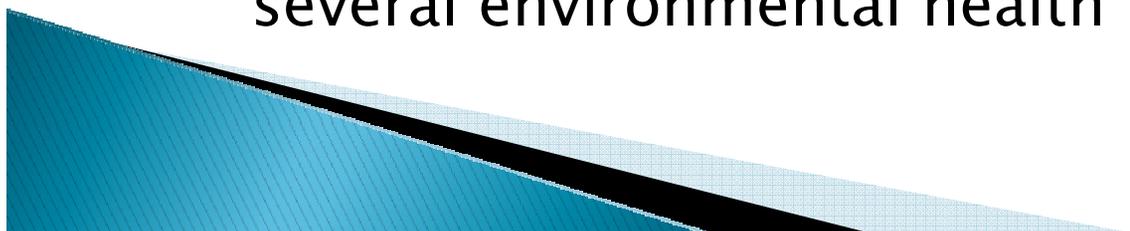
- March 2007 – August 2008



# A Binational Pilot Study Examining the Impact of Traffic-Related Air Pollution on Asthmatic Children

## ▶ Objectives:

- Measure the background and in-school levels of traffic-related pollutants in areas of low and high traffic pollution in El Paso and Juarez;
- Follow the health status of a cohort of 60 asthmatic children in both cities;
- Examine the associations between pollutant concentrations and acute respiratory health outcomes, comparing across cohorts in each city; and
- Assess the ability to detect these associations using several environmental health indicators.



# ARCH Program on Border Asthma:

*The effects of air and soil pollution on asthma in Latino Children in El Paso, Texas*

- ▶ Investigators:
  - UTEP: NE Pingitore, M Amaya, W-W Li, H Nazeran, LE Murr, and others
  - UNM HSC: S Burchiel, M Berwick, M Gonzales, ....
- ▶ Period: Sep 2005 to August 2010
- ▶ Sponsor: NIEHS
- ▶ Funding: \$4M
- ▶ Program:
  - ARCH = Advanced Research Cooperation in Environmental Health
  - One five-year major (Core) research project
  - Five three-year pilot projects, more later...

# ARCH Core Research Project:

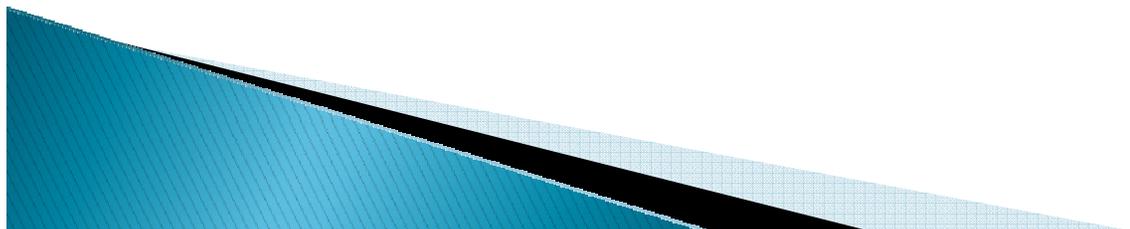
## *Childhood Asthma and Respiratory Health in Latino Children in the El Paso Airshed*

### ▶ Investigators:

- M Amaya, UTEP
- M Berwick, UNM

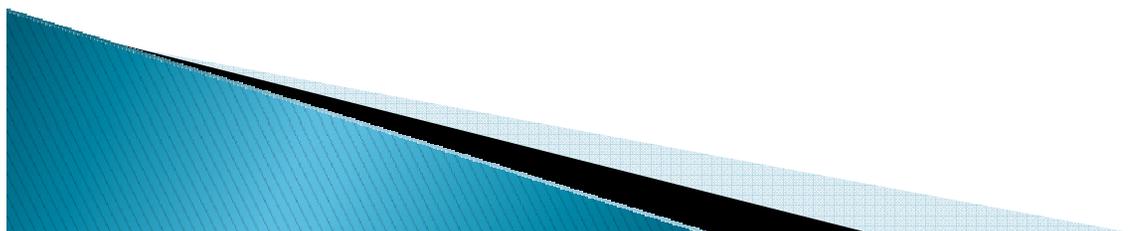
### ▶ Activities:

- Survey children 5–17 years old from a randomly selected cohort of 500 households
- Home and respiratory health data
- Household dust and yard soil samples
- Respiratory function tests
- AQ information from other projects



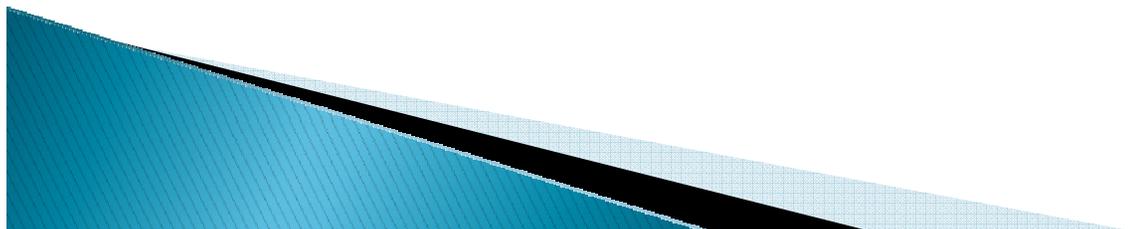
# Pilot 1: *Impulse Oscillometric Evaluation of the Effect of Air Quality on Respiratory Function...*

- ▶ Investigators:
  - H Nazeran, P Nava UTEP
  - M Goldman, MD
  - L Mansfield, MD
- ▶ Activities;
  - Evaluates a promising new, non-invasive technique for measuring lung function
  - Develop a model of lung function in normal and asthmatic children
  - Feed information to the core project



## Pilot 2: *Characterization of Indoor and Outdoor Particulate Matter....*

- ▶ Investigator:
  - W-W Li, UTEP
- ▶ Activities :
  - Conduct indoor and outdoor monitoring at selected cohort households
  - Chemical speciation of PM<sub>fine</sub> and PM<sub>coarse</sub>
  - Particle size counts
  - Feed information to the Core project



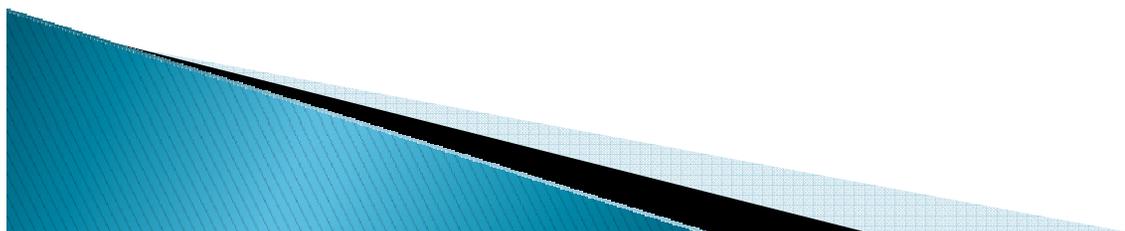
## Pilot 3: *Measurement and Modeling of Air Pollutant Exposures Across El Paso County*

### ▶ Investigators:

- M Gonzales, O Myers – UNM
- W–W Li – UTEP

### ▶ Activities :

- Year round NO<sub>x</sub> and VOC measurements at 12 sites
- Ozone measurements in the summer
- Develop a land use regression model of AQ data
- Compare with previous EPA–ORD El Paso Children’s Health Study
- Feed information to the Core Project



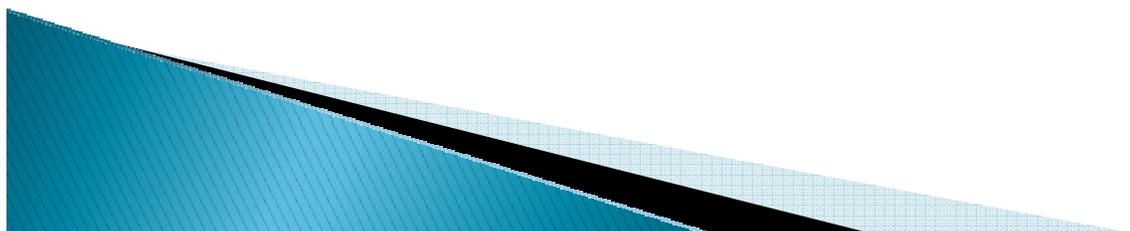
## Pilot 4: *Environmental PAHs in Air and Soil as Potential Triggers of Asthma*

### ▶ Investigators:

- S Burchiel -- UNM
- W-Y Lee, R Armijos - UTEP

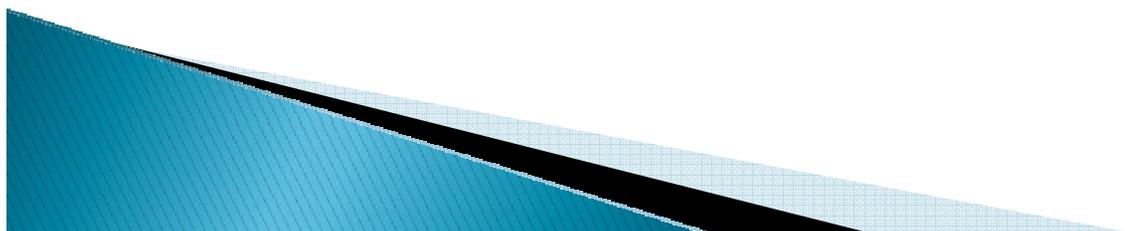
### ▶ Activities:

- Expose biological assays (lung cells) to polycyclic aromatic hydrocarbons extracted from soil and air samples from other projects
- Produce a better understanding of the physical trigger mechanism
- Feed information to the Core project



## Pilot 5: *Ultrafine Components of El Paso Particulates: Characterization, Exposure and Inflammatory Response of Indoor Carbon Nanotube Aggregates in Tissue In-Vitro*

- ▶ **Investigators:**
  - LE Murr, K Garza – UTEP
- ▶ **Activities:**
  - Investigate prevalence of ultrafine particles and carbon nanotubes in households, especially in kitchens.
  - Investigate inflammatory response of lung cell tissue lines to exposure to carbon nanotubes
  - Feed information to the Core project



# ARCH Support Core:

- ▶ Investigators:
  - NE Pingitore, W-W Li, W-Y Lee, A Barud, J Clague, H Olvera - UTEP
- ▶ Activities:
  - Year -round ambient monitoring of Pm<sub>fine</sub>, Pm<sub>coarse</sub>, and Nox/VOC/Ozone in selected community sites
  - Data management
  - Spatial and Temporal mapping
  - Chemical Speciation (including use of Stanford Synchrotron)

