

ALFREDO "AL" ARMENDARIZ

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EDUCATION

Massachusetts Institute of Technology - Chemical Engineering	S.B. 1993
University of Florida - Environmental Engineering	M.E. 1995
University of North Carolina at Chapel Hill, School of Public Health - Environmental Engineering	Ph.D. 2002

PROFESSIONAL EXPERIENCE

2008-present, Research Associate Professor, Department of Environmental and Civil Engineering, Southern Methodist University, Dallas, TX.

2002-2008, Assistant Professor, Department of Environmental and Civil Engineering, Southern Methodist University, Dallas, TX.

2002, Environmental Scientist, Multimedia Planning and Permitting Division, Environmental Protection Agency, Region 6, Dallas, TX.

1995-1998, Chemical Engineer, Radian Corporation - now URS Corp., Morrisville, NC. Permitting and air quality compliance work for natural gas utilities (Columbia Gas), pulp and paper mills (International Paper), and wood products companies (Masonite Corporation).

1992-1993, Research Assistant, MIT Center for Global Change Science, Laboratory for Atmospheric Chemistry, Cambridge, MA.

PUBLIC HEALTH COMMUNITY SERVICE

Member of the advisory board of the Texas office of the Environmental Defense Fund (EDF).

- working closely with EDF staff to study the local and regional air quality impacts from oil and gas development in the Dallas-Fort Worth area.

Technical advisor to citizen groups working on air quality issues in Texas and Colorado.

- Rocky Mountain Clean Air Action and WildEarth Guardians (Denver, CO) – cement kiln emissions, ozone smog, regional haze.
- Downwinders at Risk (Midlothian, TX) – cement kiln emissions, ozone smog, air toxics.

Summer instructor in the "ExxonMobil Green Team" program for high school students, coordinated by the Volunteer Center of North Texas.

Invited testimony to the Texas State Legislature, 80th and 81st Legislative Sessions, Senate, Natural Resources, Senate Transportation, and House Environmental Regulation Committees, 2007 - 2009.

COMMUNITY SERVICE REFERENCES

Tom "Smitty" Smith
Public Citizen
Austin, Texas
512-797-8468

Cherelle Blazer
Environmental Defense Fund (EDF)
Dallas, Texas
214-604-0425

Ramon Alvarez, Ph.D.
Environmental Defense Fund (EDF)
Austin, Texas
512-788-2246

Jeremy Nichols
WildEarth Guardians
Denver, Colorado
720-563-9306

Neil Carmen, Ph.D.
Sierra Club
Austin, Texas
512-472-1767

Jim Schermbeck
Downwinders at Risk
Midlothian, Texas
806-787-6567

EPA/STATE REFERENCES

Al Linero, P.E.
Special Projects Administrator
Florida Department of Environmental
Protection
Tallahassee, Florida
850-921-9523

Jacky Rosati, Ph.D.
National Homeland Security Research
Center
Environmental Protection Agency
RTP, North Carolina
919-541-9429

Bonnie Braganza, P.E.
Air Quality Permitting
Environmental Protection Agency
– Region 6
Dallas, Texas
214-665-7340

Greg Pashia
Office of Solid Waste and Emergency
Response – Tribal Programs
Environmental Protection Agency
Dallas, Texas
214-665-8439

PERSONAL REFERENCES

Rep. Lon Burnam – Texas State Representative, District 90, Fort Worth, Texas. I worked closely with Representative Burnam and his staff during 2009 legislative session to craft bills that would reduce emissions from oil & gas development and cement kilns, as well as improve state computer databases of air emissions. 512-463-0740.

Dean Geoffrey Orsak – School of Engineering, SMU, Dallas, Texas. I have known Geoffrey Orsak since joining the faculty in 2002, and we've had a close working relationship since he became in Dean of Engineering in 2004. 972-333-0226.

Chris Wanken – Former special assistant to Gene Sperling in the National Economic Council in the Clinton White House – personal friends since 2004 when we worked together on voter mobilization efforts in the Dallas area. 214-770-9087

HONORS AND AWARDS

Teaching Awards: Outstanding Graduate Faculty, Department of Environmental and Civil Engineering, 2003-2004, 2004-2005, 2006-2007.

Teaching Award: Outstanding Undergraduate Faculty, Department of Environmental and Civil Engineering, 2003-2004.

Royster Society Fellowship (UNC)

National Institute of Environmental Health Sciences Pre-doctoral Traineeship (UNC)

Camp Dresser & McKee Graduate Fellowship (UF)

Florida Section AWMA Scholarship (UF)

National Merit Hispanic Scholar (MIT)

Honor Societies:

Delta Omega (public health)

Tau Beta Pi (engineering)

Phi Kappa Phi (general academic)

PUBLICATIONS AND PRESENTATIONS

Kim J., Kim K., Armendariz A.J., Al-Sheikhly M. "Electron Beam Irradiation for Mercury Oxidation and Mercury Emissions Control." under review by the *ASCE Journal of Environmental Engineering*.

Kim J., Lim Y., Son Y., Armendariz A.J. "Isoprene emission rates from deciduous trees in Korea and their potential importance to air quality." under review by *Chemosphere*.

Kim J., Armendariz A.J., Kim K., Al-Sheikhly M. "Mercury Oxidation with Electron Beam Irradiation," Proceedings of the Power Plant Air Pollutant Control MEGA Symposium, Baltimore, MD, August 25-28, 2008.

Armendariz A., Garcia A., Alvarez R., McMillan M., Feldman H. "Attainment Strategies for the New Ozone Standard," Proceedings of the Air and Waste Management Association's Annual Conference and Exhibition, Portland, OR, June 24-26, 2008.

A. Farnoud, Armendariz A. "Diesel Exhaust Treatment Using an Electrostatic Precipitator," Proceedings of the Air and Waste Management Association's Annual Conference and Exhibition, Portland, OR, June 24-26, 2008.

Armendariz A.J., Farnoud A, Huang C. "Using Electrostatic Precipitation to Control Diesel Exhaust Particulate Emissions," Proceedings of the 12th Mine Ventilation Symposium, Reno, NV, June 9-11, 2008.

Armendariz A., K. Gowda, G. Carney, "Evaluation of a Technique for Detection of Petroleum Hydrocarbons in Soils", *Journal of Environmental Engineering* 134(2),145-149, 2008.

Farnoud A., A. Armendariz, "Fundamental Electrical Properties of a Small-Scale Electrostatic Precipitator," Proceedings of the American Association for Aerosol Research Annual Conference, Reno, Nevada, September 24-28, 2007.

Farnoud A., A. Armendariz, "A Compact System for the Generation & Sampling of Diesel Particulate Matter," Proceedings of the American Association for Aerosol Research Annual Conference, Reno, Nevada, September 24-28, 2007.

Farnoud A., A. Armendariz, " Electrostatic Control of Particulate Emissions from Diesel-Powered Machinery," Proceedings of the American Association for Aerosol Research Annual Conference, Reno, Nevada, September 24-28, 2007.

Farnoud A., A. Armendariz, "Design and Performance of a Small-Scale Electrostatic Precipitator for Diesel Particulate Control," Proceedings of the Annual Conference of the Air and Waste Management Association, Pittsburgh, PA, June 26-29, 2007.

Farnoud A., A. Armendariz, "A Compact System for the Generation and Sampling of Diesel Exhaust Particulate," Proceedings of the Annual Conference of the Air and Waste Management Association, Pittsburgh, PA, June 26-29, 2007.

Armendariz A. "Apparatus and Methods for Performing Ozone HVAC Filtration." Provisional Patent Application # 300814-US20Prov, 2007.

Armendariz A., K. Gowda, G. Carney, "A Technique for Hydrocarbon Soil Assessments in Katrina Impacted Areas and in other Large Site Characterization Programs", Proceedings of the Annual Conference of the Air and Waste Management Association, New Orleans, June 20-23, 2006.

Dorsey N. and A. Armendariz, "Control of Microbial Growth in Metalworking Fluids," Proceedings of the American Association for Aerosol Research Annual Conference, Austin, Texas, October 17-21, 2005.

Armendariz A. "A Novel Technique for Determining Hydrocarbon Contamination in Soils," U.S. Environmental Protection Agency, Region 6, Environmental Research Seminar, Dallas, Texas, invited talk, 2004.

Armendariz A., D. Leith, M. Boundy, R. Goodman, L. Smith, G. Carlton, "Sampling and analysis of aircraft engine cold start particles and demonstration of an electrostatic personal particle sampler", *American Industrial Hygiene Association Journal* 64: 777-784, 2003.

Armendariz A., and D. Leith, "A personal sampler for aircraft engine cold start particles: laboratory development and testing", *American Industrial Hygiene Association Journal* 64: 755-762, 2003.

Armendariz A. and D. Leith, "Concentration measurement and counting efficiency for the aerodynamic particle sizer 3320", *Journal of Aerosol Science* 33: 133-148, 2002.

Armendariz A. and D. Leith, "Concentration measurement and counting efficiency for the aerodynamic particle sizer 3320," Proceedings of the American Association for Aerosol Research Annual Conference, Portland, Oregon, 2001.

Armendariz A., D. Leith, M. Boundy, "Testing an electrostatic sampler for semi-volatile particles: field tests," Proceedings of the American Association for Aerosol Research Annual Conference, St. Louis, Missouri, 2000.

Armendariz A., D. Leith, M. Boundy, "Sampling and analysis of jet engine start-up aerosol," Proceedings of the American Industrial Hygiene Conference and Exposition, Orlando, Florida, 2000.

Armendariz A., D. Leith, M. Boundy, "Testing an electrostatic sampler for semi-volatile particles: laboratory tests." Proceedings of the American Association for Aerosol Research, Annual Conference, St. Louis, Missouri, 2000.

Armendariz A., J. LaPointe, "Effect of fluid properties on measurement error in the API Aerosizer," American Association for Aerosol Research, Annual Conference, Cincinnati, Ohio, poster presentation, 1998.

Armendariz A., E. Allen, J. Kim, "Biogenic hydrocarbon emissions: development of a sampling technique and potential impacts on ambient air quality," Florida Environmental Expo, Tampa, Florida, poster presentation, 1994.

FUNDED RESEARCH PROPOSALS

[under evaluation] City of Dallas, Sanitation Department, "Air Quality Compliance Assurance and Emission Reduction Techniques for Cell 6A at the McCommas Bluff Landfill." \$51,000, December 2008-November 2009, co-PI.

Eight Northern Indian Pueblos Council of New Mexico, Environmental Department. "Detection of Petroleum Hydrocarbons in Contaminated Soils," \$56,809, May 2009 – April 2010, PI.

Environmental Defense Fund (EDF), "Emissions Inventory for Oil and Gas Production Activities in the Barnett Shale Area and Opportunities for Cost-Effective Emissions Reductions." July 2008 – September 2008, PI

National Science Foundation, Major Research Instrumentation, "Acquisition of a Volumetric, 3-Component Particle Displacement and Velocity Measurement System for Mechanical and Environmental Engineering Measurements," \$196,490, August 2008 – July 2010, co-PI.

Centers for Disease Control and Prevention (CDC) / National Institute for Occupational Safety and Health (NIOSH), "Control of Workplace Diesel Exhaust Particulate," \$101,050, August 2007 - July 2008, PI.

Centers for Disease Control and Prevention (CDC) / National Institute for Occupational Safety and Health (NIOSH), "Control of Workplace Diesel Exhaust Particulate," \$98,865, August 2006 - July 2007, PI.

Centers for Disease Control and Prevention (CDC) / National Institute for Occupational Safety and Health (NIOSH), "Control of Workplace Diesel Exhaust Particulate," \$99,117, August 2005 - July 2006, PI.

Office of Environmental Services of the Cherokee Nation of Oklahoma, via a grant from the Environmental Protection Agency (EPA), "Development of a Field Test for Detecting Hydrocarbons in Soils," \$45,000, June 2004 - June 2005, PI.

MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL SOCIETIES

American Association for the Advancement of Science

Air and Waste Management Association

American Industrial Hygiene Association

American Association for Aerosol Research

JOURNAL, PROPOSAL, TEXTBOOK REVIEWING

U.S. Department of Agriculture, State Research, Education, and Extension Service, Proposal Reviewer, 2009.

National Science Foundation Graduate Research Fellowship Program, Panelist, 2007, 2009.

Journal of the Air and Waste Management Association, Peer Reviewer, 2006, 2007, 2008, 2009.

Environmental Science and Technology, Peer Reviewer, 2007.

Visualizing Weather and Climate, 2008 (textbook), Book Reviewer, John Wiley and Sons, publishers.

Weather and Climate, 2007 (textbook), Book Reviewer, John Wiley and Sons, publishers.

Understanding Weather and Climate, 2007 (textbook), Book Reviewer, Prentice Hall, publishers.

U.S. Civilian Research and Development Foundation, Proposal Reviewer, 2006.

UNIVERSITY COMMITTEES AND SERVICE

Instructor for Fundamentals of Engineering Exam (EIT) Mathematics Review, 2006-2009,

Faculty sponsor of SMU student chapter of Texas Society of Professional Engineers and volunteer for TSPE's annual "Mathcounts" competition in Dallas, 2005-2009.

Engineering Dean's Research Development Council, 2004, 2005, 2006, 2007.

Faculty search committee - Environmental Engineering, 2006, 2007.

Faculty search committee - ENCE Department Chair, 2002, 2003.

Faculty search committee - Transportation Engineering, 2003, 2004.

Faculty search committee - Geotechnical Engineering, 2002.

Coordinated successful proposal to start Ph.D. program in ENCE department, 2003, 2004.

Faculty participant in Mustang Corral, 2003.

Interviewer for President's Scholars Program, 2002, 2006.

Engineering Computer and Programming Committee, member, 2003, 2004.

Presentation to the Math, Science and Technology Readiness Institute Summer Camps, 2005.

RESEARCH ADVISOR TO GRADUATE STUDENTS

Chenbo Huang (former M.S. student – graduated December 2008)

Ali Farnoud (former Ph.D. student - graduated May 2008)

Whitney Boger (former M.S. student - graduated August 2007)

Kushala M.C. Gowda (former M.S. student - graduated May 2005)

Nancy Dorsey (former M.S. student – graduated August 2004)

PROFESSIONAL SOCIETY ACTIVITIES

Air and Waste Management Association, 2008 Annual Conference, "Attainment Strategies for the New Ozone Standard" - organizer and panel session chair.

American Association for Aerosol Research, conference session chair, October 2005.

American Association for Aerosol Research, Chair - Control Technology Working Group, 2004-2005.

American Association for Aerosol Research, Vice-Chair - Control Technology Working Group, 2003-2004.

American Association for Aerosol Research, conference session co-chair, October 2002.