

## **Vicken (Vic) Etyemezian**

Research Professor  
Desert Research Institute  
Division of Atmospheric Sciences  
755 E. Flamingo Road  
Las Vegas, NV 89119-7363  
Tel: 702-862-5569; Fax: 702-862-5507  
email: vic@dri.edu

### **EDUCATION**

Ph.D.	1998	Carnegie Mellon University	Environmental Engineering
M.S.	1994	Johns Hopkins University	Environmental Engineering
B.S.	1993	California Institute of Technology	Engineering & Applied Science
B.A.	1993	Occidental College	Physics

### **ACADEMIC APPOINTMENTS**

1999–2000	Research Scientist, Atmospheric Sciences, DRI, Las Vegas, NV
2000–2004	Assistant Research Professor, Atmospheric Sciences, DRI
2004–2008	Associate Research Professor, Atmospheric Sciences, DRI
2008–Present	Research Professor, Atmospheric Sciences, DRI
2006–2019	Deputy Director, Division of Atmospheric Sciences, DRI
2019- present	Vice President for Research (interim)

### **PUBLICATIONS IN PEER-REVIEWED JOURNALS**

- Lauer, Antje; Etyemezian, Vicken; Nikolich, George; Kloock, Carl; Arzate, Angel Franco; Sadiq Batcha, Fazalath; Kaur, Manpreet; Garcia, Eduardo; Mander, Jasleen; Kayes Passaglia, Alyce (2020). Valley fever: environmental risk factors and exposure pathways deduced from field measurements in California, *International journal of environmental research and public health*, 17 (15), 5285 - .
- Etyemezian, Vicken; Gillies, JA; Mastin, Larry G; Crawford, Alice; Hasson, Robert; Van Eaton, Alexa R; Nikolich, G (2019). Laboratory experiments of volcanic ash resuspension by wind, *Journal of Geophysical Research: Atmospheres*, 40, 9534 – 8560.
- Klose, M; Gill, T E; Etyemezian V; Nikolich, G; Zadeh, Z G; Webb, N P; Van Pelt, R S;(2019). Dust emission from crusted surfaces: Insights from field measurements and modelling, *Aeolian research*, 40, 1 – 14.
- Cui, M. C., Lu, H. Y., Etyemezian, V. R., Su, Q. L. (2019). Quantifying the emission potentials of fugitive dust sources in Nanjing, East China, *Atmospheric Environment*, 207, 129-135, doi: 10.1016/j.atmosenv.2019.03.016
- Gillies, J. A., Etyemezian, V. R., Nikolich, G. (2019). Trapping of Sand-Sized Particles Exterior and Interior to Large Porous Roughness Forms in the Atmospheric Surface Layer, *Boundary-Layer Meteorology*, 170 (3), 443-469, doi: 10.1007/s10546-018-0402-2
- Gillies, J. A., Etyemezian, V. R., Nikolich, G. (2018). Trapping of sand-sized particles exterior and interior to large porous roughness forms in the atmospheric surface layer, *Boundary-Layer Meteorology*, doi: 10.1007/s10546-018-0402-2

- Gillies, J. A., Etyemezian, V. R., Nikolich, G., Nickling, W. G., Kok, J. (2018). Changes in the saltation flux following a step-change in macro-roughness, *Earth Surface Processes and Landforms*, doi: 10.1002/esp.4362
- Goossens, D., Nolet, C., Etyemezian, V. R., Duarte-Campos, L., Bakker, G., Riksen, M. (2018). Field testing, comparison, and discussion of five aeolian sand transport measuring devices operating on different measuring principles, *Aeolian Research*, 32 (2018), 1-13, doi: 10.1016/j.aeolian.2018.01.001
- Mejia, J. F., Gillies, J. A., Etyemezian, V. R. (2018). Very-high resolution (20 m) flow and dust dispersion modeling: Oceano Dunes, Oceano, CA, 10th International Conference on Aeolian Research: Bordeaux, France, June 25, 2018-June 29, 2018
- Gillies, J. A., Etyemezian, V. R., Nikolich, G. (2018). Trapping of sand-sized particles exterior and interior to large porous roughness forms in the atmospheric surface layer, *Boundary-Layer Meteorology*, doi: 10.1007/s10546-018-0402-2
- Gillies, J. A., Etyemezian, V. R., Nikolich, G., Nickling, W. G., Kok, J. (2018). Changes in the saltation flux following a step-change in macro-roughness, *Earth Surface Processes and Landforms*, doi: 10.1002/esp.4362
- Goossens, D., Nolet, C., Etyemezian, V. R., Duarte-Campos, L., Bakker, G., Riksen, M. (2018). Field testing, comparison, and discussion of five aeolian sand transport measuring devices operating on different measuring principles, *Aeolian Research*, 32 (2018), 1-13, doi: 10.1016/j.aeolian.2018.01.001
- Etyemezian, V. R., Nikolich, G., Gillies, J. A. (2017). Mean Flow Through Utility Scale Solar Facilities and Preliminary Insights on Dust Impacts, *Journal of Wind Engineering and Industrial Aerodynamics*, 162, 45-56.
- Etyemezian, V. R., Nikolich, G., Nickling, W., King, J. S., Gillies, J. A. (2017). Analysis of an Optical Gate Device for Measuring Aeolian Sand Movement, *Aeolian Research*, 24, 65-79.
- Gillies, J. A., Etyemezian, V. R., Nikolich, G., Glick, R., Rowland, P., Pesce, T., Skinner, M. (2017). Effectiveness of an array of porous fences to reduce sand flux: Oceano Dunes, Oceano CA, *Journal of Wind Engineering and Industrial Aerodynamics*, 168, 247-259, doi: 10.1016/j.weia.2017.06.015
- Gillies, J. A., Nickling, W. G., Nikolich, G., Etyemezian, V. R. (2017). A wind tunnel study of the aerodynamic and sand trapping properties of porous mesh 3-dimensional roughness elements, *Aeolian Research*, 25, 23-35, doi: 10.1016/j.aeolia.2017.02.001
- Kavouras, I.G., D.W. DuBois, G. Nikolich, AYC Avittia, and V. Etyemezian (2016). Particulate dust emission factors from unpaved roads in the US-Mexico border semi-arid region. *Journal of Arid Environments* 124: 89-192.
- Kavouras, I.G., DW DuBois, G. Nikolich, and V. Etyemezian (2015). Monitoring, Source Identification and Health Risks of Air Toxics in Albuquerque, New Mexico, USA. *Aerosol and Air Quality Research* 15 (2): 556-571.
- Zhu, D. J.A. Gillies, V. Etyemezian, G. Nikolich, and W.J. Shaw (2015). Evaluation of the surface roughness effect on suspended particle deposition near unpaved roads. *Atmospheric Environment* 122, 541-551.

- Etyemezian, V., Gillies, J.A., Shinoda, M., Nikolich, G., King, J., and A.R. Bardis (2014). Accounting for surface roughness on measurements conducted with PI-SWERL: Evaluation of a subjective visual approach and a photogrammetric technique. *Aeolian Research* 13, p.13: 35 – 50.
- Chalbot, M-C., Nikolich, G., Etyemezian, V., DuBois, D.W., King, J., Shafer, D., da Costa, C.G., Hinton, J.F., and I.G. Kavouras (2013). Soil humic-like organic compounds in prescribed fire emissions using nuclear magnetic resonance spectroscopy. *Environmental Pollution* 181: 167 – 171. DOI: 10.1016/j.envpol.2013.06.008.
- Vargas, V., Chalbot, M-C, O'Brien, R., Nikolich, G., DuBois, D.W., Etyemezian, V., and I.G. Kavouras (2013). The effect of anthropogenic volatile organic compound sources on ozone in Boise, Idaho. *Environmental Chemistry* 11 (4): 445- 458.
- Kavouras, I.G., D.W. DuBois, V. Etyemezian, and G. Nikolich (2013). Spatiotemporal variability of ground-level ozone and influence of smoke in Treasure Valley, Idaho. *Atmospheric Research* 124: 44 – 52.
- Green, M.C., J.C. Chow, O.M. – C. Chang, L.W.A. Chen, H.D. Kuhns, V. Etyemezian, J.G. Watson (2013) . Source apportionment of atmospheric particulate carbon in Las Vegas, Nevada, USA. *Particuology* 11(1, SI): 110 – 118.
- Zhu, D.Z., H.D. Kuhns, J.A. Gillies, V. Etyemezian, S. Brown, and A.W. Gertler (2013). Analysis of the effectiveness of control measures to mitigate road dust emissions in a regional network. *Transportation Research Part D – Transport and Environment* 17 (4): 332 – 340.
- Kavouras, I.G., G. Nikolich, V. Etyemezian, D.W. DuBois, J. King, and D. Shafer (2012). In situ observations of soil minerals and organic matter in the early phases of prescribed fires. *Journal of Geophysical Research – Atmospheres* 117: D12313, DOI: 10.1029/2011JD017420.
- Englebrecht, J.P., J.A. Gillies, V. Etyemezian, H. Kuhns, S.E. Baker, D.Z., Zhu, G. Nikolich, and S. D. Kohl (2012). Controls on mineral dust emissions at four arid locations in the western USA. *Aeolian Research* 6: 41-54.
- Buck, B., J. King, and V. Etyemezian (2011). Effects of salt mineralogy on dust emissions, Salton Sea, California. *Soil Science Society of America Journal* 75, 1958 – 1972.
- King, J., V. Etyemezian, M. Sweeney, B. J. Buck, and G. Nikolich (2011). Dust emission variability at the Salton Sea, California, USA. *Aeolian Research* 3, 67 – 79.
- Sweeney, M. R., E. V. McDonald, and V. Etyemezian (2011). Quantifying dust emissions from desert landforms, eastern Mojave Desert, USA. *Geomorphology* 135, 21 – 34.
- Zhu, D., H.D. Kuhns, J.A. Gillies, V. Etyemezian, A. W. Gertler, and S. Brown (2011). Inferring deposition velocities from changes in aerosol size distributions downwind of a roadway. *Atmospheric Environment* 45, 957 – 966.
- Kuhns, H., J.A. Gillies, V. Etyemezian, G. Nikolich, J. King, D. Zhu, S. Uppapalli, J. Englebrecht, and S. Kohl (2010). Effect of Soil Type and Momentum on Unpaved Road Particulate Matter Emissions from Wheeled and Tracked Vehicles. *Aerosol Science and Technology* 44: 193–202.

- Gillies, J.A., V. Etyemezian, H. Kuhns, J.D. McAlpine, J. King, S. Uppapalli, and J. Englebrecht (2010). Dust emissions created by low-level rotary-winged aircraft flight over desert surfaces. *Atmospheric Environment* 44: 10431053.
- Zhu, D., H. D. Kuhns, S. Brown, J.A. Gillies, V. Etyemezian, and A.W. Gertler (2009). Fugitive Dust Emissions from Paved Road Travel in the Lake Tahoe Basin. *Journal of the Air and Waste Management Association* 59: 12191229.
- Kavouras, I.G., V. Etyemezian, G. Nikolich, M. Young, J. Gillies, and D. Shafer (2009). A new technique for characterizing the efficacy of fugitive dust suppressants. *Journal of the Air and Waste Management Association*, Vol 59, (5): 603-612.
- Kavouras, I.G., D.W. DuBois, and V. Etyemezian (2009) A geospatial screening tool to identify the sources of windblown dust. *Environmental Modeling and Software* , Vol 24: 1003 – 1011.
- Kavouras, I.G., V. Etyemezian, D.W. DuBois, J. Xu, and M. Pitchford (2009). Source reconciliation of atmospheric dust causing visibility impairment in Class I areas of the western United States. *Journal of Geophysical Research – Atmospheres*, 114, D02308, doi:10.1029/2008JD009923.
- Hualiang Teng, V. Kwigizle, M. Karakouzian, D. James, and V. Etyemezian (2008). Investigation of AP-42 Sampling Method. *Journal of the Air and Waste Management Association*, 58 (11): 1422 - 1433.
- Sweeney, M., V. Etyemezian, T. Macpherson, W. Nickling, J. Gillies, G. Nikolich, and E. McDonald (2008). Calibration of PI-SWERL with dust emission measurements from a straight-line field wind tunnel. *JGR- Earth Surface* 113 (F1): F01012.
- Macpherson, T., W.G. Nickling, J.A. Gillies, and V. Etyemezian (2008). Dust emissions from undisturbed and disturbed supply limited desert surfaces. *JGR- Earth Surface*, 113 (F2): F02S04.
- Gillies, J.A., H. Kuhns, J.P. Englebrecht, S. Uppapalli, V. Etyemezian, and G. Nikolich (2007). Particulate emissions from US Department of Defense artillery backblast testing. *Journal of the Air and Waste Management Association* 57 (5): 551-560.
- Etyemezian, V., G. Nikolich, S. Ahonen, M. Pitchford, M. Sweeney, R. Purcell, J. Gillies, and H. Kuhns (2007). The Portable In-Situ Wind Erosion Laboratory (PI-SWERL): A new method to measure PM<sub>10</sub> windblown dust properties and potential for emissions. *Atmospheric Environment* 41: 3789 – 3796.
- Kavouras, I.G., V. Etyemezian, J. Xu, D.W. DuBois, M. Green, and M. Pitchford (2007). Assessment of the local windblown component of dust in the western United States. *Journal of Geophysical Research*, 112, No D8: D08211.
- Etyemezian, V., H. Kuhns, and G. Nikolich (2006). Precision and repeatability of the TRAKER vehicle-based paved road dust emission measurement. *Atmospheric Environment* 40: 2953-2958.
- Xu, J., D. DuBois, M. Pitchford, M. Green, and V. Etyemezian (2006). Attribution of sulfate aerosols in federal Class I areas of the western United States based on trajectory regression analysis. *Atmospheric Environment* 40: 3433-3447.

- Gertler A, H. Kuhns, M. Abu-Allaban, C. Damm, J. Gillies, V. Etyemezian, R. Clayton, D. Profitt (2006). A case study of the impact of Winter road sand/salt and street sweeping on road dust re-entrainment. *Atmospheric Environment* 40 (31): 5976-5985.
- Etyemezian, V. E., M. Tesfaye, A. Yimer, J.C. Chow, D. Mesfin, T. Nega, G. Nikolich, J.G. Watson, and M. Wondmagegn (2005). Results from a pilot-scale air quality study in Addis Ababa, Ethiopia. *Atmospheric Environment* 39: 7849 - 7860.
- Moosmüller, H., R. Varma, W. P. Arnott, H.D. Kuhns, V. Etyemezian, and J.A. Gillies (2005). Scattering cross section emission factors for visibility and radiative transfer applications: Military vehicles traveling on unpaved roads. *J. Air and Waste Management Associations* 55 : 1743 – 1750.
- Gillies, J.A., V. Etyemezian, H. Kuhns, D. Nikolich, and DA. Gillette (2005). Effect of vehicle characteristics on unpaved road dust emissions. *Atmospheric Environment* 39: 2341 – 2347.
- Kuhns, H., V. Etyemezian, J. Gillies, D. DuBois, S. Ahonen, and D. Nikolic (2005). Spatial Variability of Unpaved Road Dust PM<sub>10</sub> Emission Factors near El Paso, Texas. *Journal of the Air and Waste Management Association*.55: 3-12.
- Etyemezian, V., S. Ahonen, D. Nikolic, J. Gillies, H. Kuhns, D. Gillette, and J. Veranth (2004). Deposition and Removal of Fugitive Dust in the Arid Southwestern United States: Measurements and Model Results. *Journal of the Air and Waste Management Association* 54: 1099 – 1111.
- Etyemezian V., H. Kuhns, J. Gillies, M. Green, M. Pitchford, and J. Watson (2003). Vehicle based road dust emissions measurements (I): Methods and Calibration. *Atm. Env* 37: 4559-4571.
- Etyemezian V., H. Kuhns, J. Gillies, J. Chow, K. Hendrickson, M. McGown , and M. Pitchford (2003). Vehicle based road dust emissions measurements (III): Effect of speed, traffic volume, location, and season on PM<sub>10</sub> road dust emissions. *Atm. Env* 37: 4583-4593.
- Kuhns, H., V. Bohdan, J. Chow, V. Etyemezian, M. Green, D. Herlocker, S. Kohl, M. McGown, J. Ramsdell, W. Stockwell, M. Toole, and J. Watson (2003). The Treasure Valley Secondary Aerosol Study I: Measurement and Equilibrium Modeling of Inorganic Secondary Aerosols and Precursors for Southwestern Idaho. *Atm. Env* 37: 4511-4524.
- Stockwell, W.R; H. Kuhns, V. Etyemezian, M. Green, J. Chow, and J. Watson (2003) The Treasure Valley secondary aerosol study II: modeling of the formation of inorganic secondary aerosols and precursors for southwestern Idaho. *Atm. Env.* 37: 4525-4534.
- Kuhns H., V. Etyemezian, M. Green, Karin Hendrickson, Michael McGown, Kevin Barton, Marc Pitchford (2003) Vehicle-based road dust emissions measurement (II): Effect of precipitation, winter time road sanding, and street sweepers on PM<sub>10</sub> fugitive dust emissions from paved and unpaved roads. *Atm. Env.* 35: 4572-4583
- Chow, J., J. Watson, H. Kuhns, V. Etyemezian, D.H. Lowenthal, D. Crow, S. Kohl, J. Engelbracht, and M. Green (2004). Source Profiles for Industrial, Mobile, and Area Sources in the Big Bend Regional Aerosol Visibility Observational Study. *Chemosphere* 54: 185 - 208.

- Dai, W., C.I. Davidson, V. Etyemezian, and M. Zufall (2001). Wind Tunnel Studies of Particle Transport and Deposition in Turbulent Boundary Flows. *Aerosol Sci. & Tech.* 35:887-898.
- Kuhns, H., Etyemezian, V., Landwehr, D., MacDougall, C., Pitchford, M., and M. Green. (2001). Testing Re-entrained Aerosol Kinetic Emissions from Roads (TRAKER): A New Approach to Infer Silt Loading on Roadways. *Atm. Env.* 35: 2815-2825.
- Etyemezian, V., C.I. Davidson, M. Zufall, and W. Dai (2000). Impingement of Raindrops on a Tall Building. *Atm. Env.* 34: 2399 - 2412.
- Davidson, C.I., W. Tang, S. Finger, V. Etyemezian, M.F. Striegel, and S.I. Sherwood (2000). Soiling Patterns on a Tall Limestone Building: Changes over 60 Years. *Env. Sci. & Tech.* 34 (4): 560-566
- Zufall, M J; W. Dai, C.I. Davidson, and V. Etyemezian (1999). Dry deposition of particles to wave surfaces: I. Mathematical modeling: *Atm. Env.* 33: 4273-4272.
- Strader, R., C.I. Davidson, V. Etyemezian, and others Source (1998). Vertical gradients of airborne concentration and deposition of pollutants on buildings. *J. aerosol sci.* 29, Supp/1; PT/1: S117
- Etyemezian, V., C.I. Davidson, S. Finger, M. Striegel, N. Barabas, and J. Chow (1997). Vertical Gradients of Pollutant Concentrations and Deposition Fluxes on a Tall Limestone Building. *Journal of the American Institute for Conservation*, 37 (2): 187-210.

**PATENTS AND INTELLECTUAL PROPERTY ACTIVITIES**

Etyemezian, V. R., Gillies, J. A., (2016): Engineered Roughness Elements, Arrays Thereof, and Their Method of Use, September 6, 2016, U.S. Patent No. 9,435,093.

Etyemezian, V. and G. Nikolich. (2015). Optical System and Method of Use. United States Patent No: 9,171,984 B2, awarded October 27, 2015.

Etyemezian, V. and G. Nikolich (2015). System, apparatus, and method for measuring surface materials. United States Patent No: 9,702,801, published January 1, 2015.

Etyemezian, V., H. Kuhns, M. Pitchford, S. Ahonen, and D. Nikolic (2003). Wind Shear Inducing Soil Stability Measuring Device. United States Patent No: 7,155,966, awarded January 10, 2007.

## **SELECTED TECHNICAL REPORTS**

- Chapman, J. B., Nikolich, G., Shadel, C. A., McCurdy, G. D., Etyemezian, V. R., Miller, J. J., Mizell, S. A. (2018). Tonopah Test Range Air Monitoring CY2017 Meteorological, Radiological, and Wind Transported Particulate Observations, DOE/NV/0003590-25; DRI 45284
- Etyemezian, V. R., Decker, D. L., Nikolich, G., Kohl, S. D., Khlystov, A. Y. (2018). Exploratory development of energetic and pyrotechnic combustion characterization apparatus, 44 p.
- Lauer, A., Etyemezian, V. R., Nikolich, G., Azate, A. F., Batcha, F. S., Kaur, M., Mander, J., Passaglia, A. K., Garcia, E. (2018). Final report: Assessing the impacts of climate and land use/land cover change on valley fever incidence, 65 pp.
- Etyemezian, V. R., Chapman, J. B., Nikolich, G., Shadel, C. A., McCurdy, G. D., Etyemezian, V. R., Miller, J. J., Mizell, S. A. (2018). Tonopah Test Range Air Monitoring CY2017 Meteorological, Radiological, and Wind Transported Particulate Observations, DOE/NV/0003590-25; DRI 45284
- Clifford, M. J., Etyemezian, V. R., Chen, L., Nikolich, G. (2018). Synthesis of Post-Fire Monitoring Activities in the Great Basin Desert, Mojave Desert, and Transition Zones, 45282
- Etyemezian, V. R., Decker, D. L., Nikolich, G., Kohl, S. D., Khlystov, A. Y. (2018). Exploratory development of energetic and pyrotechnic combustion characterization apparatus, 44 p.
- Etyemezian, V. R., Gillies, J. A., Nikolich, G., Hasson, R. (2018). Measurement of resuspension of volcanic ash by wind erosion: final report, 73 pp., AFP-DRI-REPORT-02, Revision 1
- Etyemezian, V. R., Nikolich, G., DuBois, D. W., DeAntonio, M., Fuentes, J., Zadeh, Z. G., Nayares, O., Engle, S. (2018). Early warning sensor network for brown-out conditions: Pilot implementation on I-10, 29 pp.
- Nikolich, G., Gillies, J. A., Campbell, D. E., 2016: Temporary Meteorological Network at the Ocotillo Wells State Vehicular Recreation Area: Final Report on Methods and Results from May 2014 through May 2016, Report prepared for California Department of Parks and Recreation, Ocotillo Wells State Vehicular Recreation Area, Borrego Springs, CA, August 2016.
- Lauer, A., Etyemezian, V. R., Nikolich, G., Azate, A. F., Batcha, F. S., Kaur, M., Mander, J., Passaglia, A. K., Garcia, E. (2018). Final report: Assessing the impacts of climate and land use/land cover change on valley fever incidence, 65 pp.
- Etyemezian, V. R., Nikolich, G., Gillies, J. A., Campbell, D. E., 2016: Measurement of Treatment Effectiveness of Trails at the Ocotillo Wells State Vehicular Recreation Area: Final Report of TRAKER(TM) and Related Findings, Report prepared for California Department of Parks and Recreation, Ocotillo Wells State Vehicular Recreation Area, Borrego Springs, CA, August 2016.
- Nikolich, G., Shadel, C. A., Chapman, J. B., McCurdy, G. D., Etyemezian, V. R., Miller, J. J., Mizell, S. A., 2016: Tonopah Test Range Air Monitoring: CY2015 Meteorological, Radiological, and Airborne Particulate Observations, DOE/NV/0000939-37; DRI 45271
- Mejia, J. L., Fenstermaker, V., Etyemezian, J. Miller, P., Jiang, G., Nikolich, J., Gillies, and E. Lomeli (2015). Strategies for climate change adaption at the Dryden flight



- research center and within the Mojave Desert region: Final report for NASA Award Number NNX12AF57G. August, 2015.
- Gillies, J., V. Etyemezian, D. Zhu, G. Nikolich, J.P. Engelbrecht, W. Shaw, L. Berg, E. Chapman, S. Clopton, M. Pekour, J. Rishell, and F. Rutz. Final Report for RC-1729 Characterizing and Quantifying Emissions and Transport of Fugitive Dust Emissions Due to Department of Defense Activities. September 18, 2015.
- Etyemezian, V., J. Gillies, D. Zhu, A. Pokharel, and G. Nikolich (2014). The 2013 intensive wind erodibility measurements at and near the Oceano Dunes State Vehicular Recreation Area: Report of Findings. Prepared for the California State Parks, July 9, 2014.
- Miller, J. J., V. Etyemezian, M.E. Cablk, R. Shillito, and D. Shafer (2013). Monitoring Soil Erosion on a Burned Site in the Mojave-Great Basin Transition Zone: Final Report for the Jacob Fire Site. Prepared for Nevada Field Office, National Nuclear Security Administration, U.S. Department of Energy, Las Vegas, Nevada. October, 2013.
- Miller, J. J., V. Etyemezian, M.E. Cablk, R. Shillito, L. Fenstermaker, and D. Shafer (2013). Monitoring Soil Erosion of a Burn Site in the Central Basin and Range Ecoregion: Final Report on Measurements at the Gleason Fire Site, Nevada. Prepared for Nevada Field Office, National Nuclear Security Administration, U.S. Department of Energy, Las Vegas, Nevada. October, 2013.
- Etyemezian, V., A. Johnson, S. Wells, and A. Gertler (2012). Enabling technologies for solar development in Nevada. Final report for subtask 2.8.2 prepared for Nevada Renewable Energy Consortium (award number: DE-EE0000272). October 24, 2012.
- Lancaster, N., J. Gillies, V. Etyemezian, and G. Nikolich (2011). Oceano Dunes Pilot Project: Final report. Prepared for the California State Parks, September 15, 2011.
- Etyemezian, V., J. King, S. Zitzer, G. Nikolich, J. Gillies, W. Nickling, and J. Mason (2010). Sediment Transport to White-Margined Penstemon Habitat (*Penstemon albomarginatus*): Final report. Prepared for Department of Air Quality And Environmental Management, Desert Conservation Program, Clark County, Nevada. March 29, 2010.
- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, J.P. Engelbrecht, J. King, S. Uppapalli, G. Nikolich, J.D. McAlpine, D. Zhu, M. Skiba, D.A. Gillette, and W. Shaw, and R. Hashmonay (2009). /Particulate Matter Emission for Dust from Unique Military Activities./ Final Report Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821, December 2009.
- Kavouras, I.; Nikolich, G.; DuBois, D.W.; Etyemezian, V. (2009) Air toxics risk assessment for City of Albuquerque, New Mexico: Final Report. City of Albuquerque, New Mexico, Houston, Texas, 350 pages.
- Kavouras, I.; DuBois, D.W.; Etyemezian V. (2009) Precursors and sources of fine particulate matter in Treasure Valley, Idaho: Final Report. Idaho Department of Environmental Quality, Boise, Idaho. 100 pages
- Kavouras, I.; Nikolich, G.; DuBois, D.W.; Etyemezian, V.; Corral, A. (2009) Unpaved Roads Particulate Emissions in the Paso del Norte Region. US Environmental Protection Agency Region 6, Houston, Texas, 73 pages

- Langston, R., R.S. Merle Jr., D. Hart, V. Etyemezian, H. Kuhns, J. Gillies, D. Zhu, D. Fitz, K. Bumiller, D.E. James, and H. Teng (2008). The preferred alternative method for measuring paved road dust emissions for emissions inventories: "Mobile technologies vs. the traditional AP-42 methodology. Prepared for EPA OAQPS, March, 2008, 110 pages.
- Etyemezian, V., I.G. Kavouras, and J. King (2008). Preliminary Chemical Characterization of PM10 Samples from the New River Playa at the Salton Sea. Report prepared for California Department of Water Resources, November, 2008, 6 pages.
- Kavouras, I.G.; V. Etyemezian, D. DuBois, and G. Nikolich (2008) Ozone and its precursors in Treasure Valley: Final report. Prepared for Idaho Department of Environmental Quality, Boise, Idaho. February, 2008, 180 pages
- Etyemezian, V. , H. Kuhns, J. Gillies, S. Uppapalli, G. Nikolich, and D. Zhu (2007). Clark County Alternative Technologies for Paved Road Dust Emissions Measurement: DRI Final Report. Prepared for Clark County Department of Air Quality and Environmental Management, January, 2007. 51 pages.
- Kavouras, I., V. Etyemezian, G. Nikolich, M. Young, D. Shafer, J. Gillies, and J. Goreham (2007). Soil Stabilization Study by Encapco Emulsion Treatment for Five Types of Soil Surfaces: Final Report. Prepared for Naval Facilities Engineering Research Center, Port Hume, California. January, 2007. 190 pages.
- Sweeney, M., E. McDonald, V. Etyemezian, T. Caldwell, S. Bacon, S. Baker, D. DuBois, and J. King (2007). Assessment of Potential Playa and Lake Analogues to the Salton Sea in Support of the Programmatic Environmental Impact Report: Final Report. Prepared for California Department of Water Resources, Glendale, California. February, 2007. 66 pages.
- King, J., V. Etyemezian, G. Nikolich, B. Buck, M. Howell, and J. Morton (2007). Preliminary Assessment of the Distribution of Salts at the Salton Sea. Prepared for California Department of Water Resources, Glendale, California. October, 2007. 52 pages.
- Lancaster, N., J.A. Gillies, V. Etyemezian, and G. Nikolich (2011). Oceano Dunes Pilot Projects: Final Report. Report Prepared for California State Parks and San Louis Obispo County Air Pollution Control District, July 2011.
- Kuhns, H., D. Zhu, J. Gillies, A. Gertler, V. Etyemezian, and S. Brown (2007). Measurement and modeling of fugitive dust emissions from paved road travel in the Lake Tahoe basin: Final Report. Prepared for USEPA Region 9, San Francisco, California. December, 2007. 91 pages.
- Etyemezian, V., M. Sweeney, E. MacDonald, T. Caldwell, J. Gillies, G. Nikolich, J. Xu, W. Nickling, and T. Macpherson (2006c). Measurement of windblown dust emission potential and soil characteristics at the Salton Sea: Final Report. Prepared for California Department of Water Resources, Glendale, California, August, 2006.
- Etyemezian, V., S. Ahonen, J. Gillies, J. Goreham, I. Kavouras, G. Nikolich, D. Shafer, M. Sweeney, and M. Young (2006). Plutonium Soil Stabilization Study at the Nevada test Site: Final Report. Prepared for Encapco Technologies LLC, Napa, CA, and the Naval Facilities Engineering Service Center, Port Hueneme, CA. March, 2006.

- Kavouras, I.G., V. Etyemezian, J. Xu, D. DuBois, and M. Pichford (2005). Preliminary Assessment of the Principal Causes of Dust-Resultant Haze at IMPROVE sites in the Western United States: Final report. Prepared for the Western Regional Air Partnership, Phoenix, AZ, November, 2005.
- Etyemezian, V., H. Kuhns, and G. Nikolich (2005). The Las Vegas Road Dust Emissions Technology Assessment, Phase II: Final Report. Prepared for the Clark County Department of Air Quality and Environmental Management, Las Vegas, NV. July, 2005.
- Green, M.C., O. Chang, J.C. Chow, H. Kuhns, L.-W. A. Chen, N. Nussbaum, D. Nikolic, P. Arnott, S. Kumar, V. Etyemezian, and J.G. Watson (2005). The Las Vegas Carbon Source Apportionment Study: Final report. Prepared for the Clark County Department of Air Quality and Environmental Management, Las Vegas, NV. December, 2004.
- Kuhns, H., M.-C. O. Chang, J.C. Chow, V. Etyemezian, L.-W. A. Chen, N. Nussbaum, S.K.K. Nathagoundenpalayam, D. Trimble, S. Kohl, M. MacLaren, M. Abu-Allaban, J. Gillies, A. Gertler, C. Damm, C. Denney, C. Gallery, and J. Skotnik (2004). DRI Lake Tahoe Source Characterization Study: Final Report. Prepared for California Air Resources Board, 1001 I Street, Sacramento, CA 95812, Oct. 2004.
- Gillies, J.A., P. Arnott, V. Etyemezian, D.A. Gillette, H. Kuhns, E. McDonald, H. Moosmüller, W. G. Nickling, G. Schwemmer, and T. Wilkerson (2004). Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations: Final Report. Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821, Dec. 2004.
- Hampden Kuhns, Claudio Mazzoleni, M.-C. Oliver Chang , Judith C. Chow, Gayathri Parthasarathy , Vic Etyemezian, Hans Moosmuller, Peter Barber, Nicholas Nussbaum, Suresh Kumar K. Nathagoundenpalayam , Steve Kohl, Djordje Nikolic, John Watson (2004), Meridian School Bus Biodiesel Evaluation Study, report prepared for Community Planning Agency of Southwest Idaho by Desert Research Institute, Reno, NV, June 20.
- Green, M., M-c O. Chang, J.C. Chow, H. Kuhns, L-W Anthony Chen, N. Nussbaum, D. Nikolich, P. Arnott, S. Kumar, and V. Etyemezian (2004). Las Vegas Carbon Source Apportionment Study: Final Report. Prepared for Clark County Department of Air Quality Management, Las Vegas, NV. December 28, 2004.
- Etyemezian, V., H. Kuhns, G. Nikolich, and K. Graham (2004). The Las Vegas Road Dust Emissions Technology Assessment: Final Report. Prepared for Clark County Department of Air Quality Management, Las Vegas, NV. July, 2004.
- Chow, J.C., J.G. Watson, D. Crow, S. Kohl, H. Kuhns, V. Etyemezian, and J. Engelbrecht (2002). Source Profiles for the Big Bend Regional Aerosol Visibility and Observational (BRAVO) Source Characterization Study. Prepared for the Cooperative Institute for Atmospheric Sciences and Terrestrial Applications (CIASTA) Program c/o National Oceanic and Atmospheric Administration, Las Vegas, NV, by Desert Research Institute, Reno, NV. February 2002.
- Etyemezian, V.; J. Gillies, H. Kuhns, D. Nicolich, J. Varanth, R. Laban, G. Seshadri, and D. Gillette (2002) Field testing and evaluation of dust deposition and removal mechanisms:

Final Report. Prepared by the Desert Research Institute, Las Vegas, NV for the WESTAR Council, Lake Oswego, OR, 11/15/02.

Etyemezian, V., H. Kuhns, J. Gillies, M. Green, S. Kohl, and J. Chow (2002) Treasure Valley Road Dust Study: Final Report. Prepared by Desert Research Institute, Las Vegas, NV for Idaho Department of Environmental Quality. 01/31/02.

Green, M.C., J.C. Chow, A. Hecobian, V. Etyemezian, H. Kuhns, and J.G. Watson (2002). Las Vegas Valley Visibility and PM2.5 Study. Final Report. Prepared for Clark County Department of Air Quality Management, Las Vegas, NV, by Desert Research Institute, Las Vegas, NV. 6 May 2002.

Kuhns, H.; V. Etyemezian; W. Stockwell; S. Kohl; M. Green, J. Watson; and J. Chow (2000) Treasure Valley Secondary Aerosol Study: Final Report. Prepared by the Desert Research Institute for the Idaho Division of Environmental Quality. 11/15/00.

## **SELECTED PRESENTATIONS AT PROFESSIONAL MEETINGS**

- Etyemezian, V. R., Gillies, J. A., Nikolich, G., Hasson, R. (2018). Measurement of resuspension of volcanic ash by wind erosion: final report, 73 pp., AFP-DRI-REPORT-02, Revision 1
- Etyemezian, V. R., Nikolich, G., DuBois, D. W., DeAntonio, M., Fuentes, J., Zadeh, Z. G., Nayaes, O., Engle, S. (2018). Early warning sensor network for brown-out conditions: Pilot implementation on I-10, 29 pp.
- Gillies, J. A., Etyemezian, V. R., Nikolich, G. (2018). Trapping of Sand-Sized Particles Exterior and Interior to Large Porous Roughness Forms in the Atmospheric Surface Layer: Phases 1 & 2, Final report prepared for Great Basin Unified Air Pollution Control District, Bishop, CA, December 2018. Gillies, J. A., Etyemezian, V. R., Nikolich, G., Nickling, W. (2017). Changes in the Saltation Flux Following a Step-Change in Macro-Roughness, Geophysical Research Abstracts, EGU General Assembly 2017, 19 (EGU2017-5406), pp. 1
- Gillies, J. A., Nickling, W. G., Nikolich, G., Etyemezian, V. R., 2016: The Effect of Volumetric Porosity on Roughness Element Drag, European Geophysical Union General Assembly: Vienna, Austria, April 17, 2016-April 22, 2016
- Gillies, J. A., Nickling, W. G., Nikolich, G., Etyemezian, V. R., 2016: Aerodynamic and Sand Trapping Properties of Porous Mesh 3-Dimensional Roughness Elements, 9th International Conference on Aeolian Research: Mildura, Australia, July 3, 2016-July 8, 2016
- Piedra, P. G., Moosmuller, H., Etyemezian, V. R., Nikolich, G., Steinberg, S., Sylva, J., 2016: Dust Deposition and Impact on Panels/Mirrors, Nevada Solar Energy, Water, and Environment Nexus Collaboration and Integration Meeting: Las Vegas, NV, January 15, 2016
- Watson, J. G., Chow, J. C., Wang, X., Gillies, J. A., Etyemezian, V. R., 2016: Fugitive Dust: A Review of Suspension Processes and Control Measures, 10th International Conference on Air Quality - Science and Application: Milan, Italy, March 14, 2016-March 18, 2016
- Etyemezian, V., J. Engelbrecht, J. Gillies, I. Kavouras, and D. DuBois (2015). Overview of mineral dust as an air pollutant. Oral presentation at the 25<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Henderson, Nevada, October 18 – 22, 2015.
- Miller, J.J., S.A. Mizell, G.D. McCurdy, G. Nikolich, V. Etyemezian, and J. Chapman. Fate and Transport of Contaminants at Soils Sites – 15512. 2015 Waste Management Conference, Phoenix, Arizona, March 14 – 20, 2015.
- Watson, J.G., J.C. Chow, X.L. Wang, J. A. Gillies, and V. Etyemezian (2015). Fugitive Dust Emission Characterization and Control. 12th National Aerosol Conference and 13th Cross Strait Workshop for Aerosol Science & Technology Chongqing, China, October 23, 2015.
- Beres, N. D., P. G. Piedra, V. R. Etyemezian, W. P. Arnott, and H. Moosmüller (2015). Mineral Dust Deposition and Solar Cell Spectral Performance. 34<sup>th</sup> Annual Conference of the American Association for Aerosol Research, Minneapolis, Minnesota, October 12-16, 2015.
- Etyemezian, V., J. Engelbrecht, J. Gillies, and G. Nikolich (2014). Dust measurement, characterization, inventory, and control. Invited presentation at the Dust Studies workshop

- 2014, Kuwait Institute of Science and Technology, Kuwait City, Kuwait, December 2, 2014.
- Etyemezian, V., J. Watson, J. Chow, J. Engelbrecht, J. Gillies, G. Nikolich, I. Kavouras, and I. Koturbash (2014). Particulate matter pollution in desert cities: Ambient measurements, source identification, and management options. Invited presentation at Carnegie Mellon University – Doha, Doha, Qatar, November 30, 2014.
- Etyemezian, V., G. Nikolich, J. Gillies, and W. Nickling (2014). SANTRI: A New Tool For Field Measurement of Sand Transport. Presented at the Eight International Conference on Aeolian Research (ICAR VIII), Lanzhou, China, July 20 – 23, 2014.
- Etyemezian, V. (2013). Particulate matter pollution: Sources apportionment and identification. Presentation for the Environmental Management and Control Department, Royal Commission in Jubail, Jubail, Kingdom of Saudi Arabia, November 17, 2013.
- Etyemezian V. (2013). Techniques for measurement and characterization of sources of fugitive dust. Invited presentation at the Airborne Mineral Dust Contaminants: Impacts on Human Health and the Environment, Tucson, Arizona. May 20 – 21, 2013.
- Etyemezian, V. (2013). Windblown dust measurement (2013). Presented at The Southwest Border Symposium on Air Quality and Climate, Las Cruces, New Mexico, USA. April 22-23, 2013.
- Engelbrecht, J., J. Gillies, and V. Etyemezian. Workshop on airborne mineral dust. Invited, multi-presentationm workshop at the King Abdullah University for Science and Technology (KAUST), Kingdom of Saudi Arabia. November 11 – 15, 2013.
- Etyemezian, V., D. Shafer, K. Chief, J. King, J. Miller, G. Nikolich, S. Zitzer, and R. Shilito (2011). Wind erosion measurements up to three years after a fire. Presented at the Interior West Fire Ecology Conference, Salt Lake City, Utah, Nov. 14 – 17, 2011.
- Shafer, D.S, J.J. Miller, D. DuBois, V. Etyemezian, I. Kavouras, G. Nikolich, and S.F. Zitzter (2009). Measuring potential fluvial and Aeolian erosion from a rangeland fire in the Mojave-Great Basin transition zone. Presented at the Annual meeting of the Geological Society of America, Portland, Oregon, October 18-21, 2009.
- Kavouras, I.G.; DuBois, D.W.; Nikolich, G.; Etyemezian, V. (2009) Impacts of wildfires of exposures to ozone and particulate matter. ISES 2009, Minnesota, USA.
- Sweeney, M.R., E.V. McDonald, and V. Etyemezian (2009). Quantification of dust emissions from desert landforms using the PI-SWERL, southern California. Presented at the Annual meeting of the Geological Society of America, Portland, Oregon, October 18-21, 2009.
- Gillies, J.A., V. Etyemezian, and G. Nikolich (2009). Dust entrainment on Earth and Mars. Invited paper presented, Mars Dust Cycle Workshop, NASA Ames Research Center, Moffett Field, CA, 15-17 September 2009.
- Watson, J.G., J.C. Chow, J.A. Gillies, and V. Etyemezian (2008). Advances in Continuous Monitors for Asian Dust Suspension Properties, Emission Rates, and Particle Sizes. Presented at the Fifth International Workshop on Sand and Dust Storms, Urumqi, Xinjiang, China, May 23, 2008

- Kavouras, I.G; V. Etyemezian, D. DuBois, J. Xu, and M.P. Pitchford, M.P. (2008). Sources of Atmospheric Dust in Class I areas of the Western U.S.. Presented at the General Assembly of European Geophysical Society, Austria, April, 2008.
- Kavouras, I.G; D. DuBois, V. Etyemezian, B. Louks, H. Herrlocker, and R. O'Brien (2008). Impacts of wildfires and mobile emission on ozone concentrations in Treasure Valley. Presented at the Air and Waste Management Association 2008 Annual Conference and Exhibition, Oregon, USA, June, 2008.
- Zhu, D. H. Kuhns, S. Brown, V. Etyemezian, J. Gillies, and A. Gertler (2008). Spatial and Seasonal Emissions of Road Dust in the Lake Tahoe Basin. Presented at the 4th Tahoe Basin Science Conference, Lake Tahoe, California, 2008.
- Etyemezian, V., H. Kuhns, J. Gillies, G. Nikolich, D. James, and S. China (2008). Measurement of Road Dust Emissions: The TRAKER and PI-SWERL Tools. Poster presented at the 2008 Road Dust Management Practices and Future Needs Conference, San Anotnio, Texas, November 13-14, 2008.
- Gillies, J., H. Kuhns, V. Etyemezian, et al (2008). Fugitive Dust from Unique Military Activities. Poster presented at DoD SERDP/ESTCP Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., Dec 2-4, 2008.
- Buck, B.J., J. King, V. Etyemezian, J. Morton, and M. Howell (2008). Micromorphology of Salt Crusts: Implications for Dust Emissions & Air Quality, Salton Sea, California, USA. Presented at the 13th International Conference on Soil Micromorphology , Chengdu, China, September, 2008.
- Zitzer, S.F., J. King, and V. Etyemezian (2008). Unveiling the mysterious ecology of a rare relict Mojave Desert forb (*Penstemon albomarginatus*): Will ecological knowledge put a damper on exponential growth in Southern Nevada? Presented at 2008 Ecological Society of America Annual Meeting, Milwaukee, Wisconsin, August, 2008.
- Calvin, W., F. Harris, N. Lancaster, H. Sun, B. Buck, S. Steinberg, S. Bassett, Dascalu, J. Gillies, V. Etyemezian, S. Bacon, and C. Fritsen (2008). Exploring Planetary Surfaces: Earth, Moon and Mars. Presented at the 2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM, Houston, Texas, October, 2008.
- Buck, B.J., J. King, V. Etyemezian, J. Morton, and M. Howell (2008). Effects of salt mineralogy on surface characteristics: Implications for dust emissions, Salton Sea, California. Presented at 2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM. Houston, Texas, October, 2008.
- Langston, R., R.S. Merle, D. Hart, V. Etyemezian, H. Kuhns, J. Gillies, D. Fitz, K. Bumiller, and D. James (2007). The preferred alternative method for measuring paved road dust emissions for emissions inventories: Mobile technologies vs. the traditional AP-42 methodology. Proceedings of the 16th annual International Emission Inventory Conference – “Emission Inventories: Integration, Analysis, and Communications”. May 14-17, 2007, Raleigh, North Carolina, USA.

- King, J., V. Etyemezian, and J. Gillies (2007). Influence of temporal scales and soil properties on dust emissions: a measurement and modeling effort. Presented at the 2007 American Geophysical Union annual Fall Conference. San Francisco, California, December, 2007.
- Etyemezian, V., M. Sweeney, J. King, B. Buck, G. Nikolich (2007). Seasonality of dust emission potential at the Salton Sea in California, U.S.A.. Presented at the IAMAS Mineral Dust Aerosol Symposium, Perugia, July 9-11, 2007.
- James, D., G. Thielen, and V. Etyemezian (2007). Improved techniques for AP42 estimation of paved road dust emissions factors. Presented at the Air & Waste Management Association's 100th Annual Conference & Exhibition, Pittsburgh, PA, June 26-29, 2007 .
- Shafer, D., D. DuBois, V. Etyemezian, I. Kavouras, J. Miller, G. Nikolich, and M.C. Stone (2007). Fire as a long-term stewardship issue for soils contaminated with radionuclides in the Westrn U.S. Presented at the ICEM07, The 11th International Conference on Environmental Remediation and Radioactive Waste Management. Bruges, Belgium, September, 2007.
- Etyemezian, V. (2007). Windblown Dust at the Salton Sea: QSA's Potential Impacts on Air Quality. Presented to the Best Available Control Technology workgroup, Reno, Nevada, March 13, 2007.
- Kuhns, H., and V. Etyemezian (2007). The Scandalous Truth about Road Dust Emissions: Results from Recent Clark County Studies. Presented to the Best Available Control Technology workgroup, Reno, Nevada, March 13, 2007.
- Kavouras, I.G., J. Xu, V. Etyemezian, D. DuBois, M. Green, and M. Pitchford (2006). Contributions of dust and smoke on aerosol extinction coefficient. Poster presented at the 2006 Fall meeting of the American Geophysical Union, San Francisco, California, December, 2006.
- Etyemezian, V., M. Sweeney, W. Nickling, J. Gillies, and E. MacDonald (2006). Seasonal Dust Emissions Measured from Shorelines at the Salton Sea, Southern California. Poster presented at the 2006 Fall meeting of the American Geophysical Union, San Francisco, California, December, 2006.
- Kavouras, I.G., V. Etyemezian, J. Xu, D. DuBois, and M. Green (2006). Investigation of the sources of coarse particles in Western United States. Presented at the 2006 Annual conference of the Air and Waste Management Association, New Orleans, Louisiana, June, 2006.
- Sweeney, M., V. Etyemezian, and E. McDonald (2006). Desert landforms as natural and anthropogenic dust sources. Presented at the VI International Conference on Aeolian Research VI, Guelph, Canada, July, 2006.
- Etyemezian, V., M. Sweeney, W. Nickling, J. Gillies, and E. MacDonald (2006). Calibration of the PI-SWERL against a straight-line wind tunnel. Poster presented at the VI International Conference on Aeolian Research VI, Guelph, Canada, July, 2006.
- Gillies, J. V. Etyemezian, M. Sweeney, et al. (2006). Factors Controlling the Spatial and Temporal Variability of Dust Emissions. Presented at the 7th International Symposium on Environmental Geochemistry, Beijing, China, September 25-30, 2006.



- Hoekman, K., and V. Etyemezian (2006). Assessing Air Quality Impacts of Operations on Military Ranges/Facilities. Presented at DoD SERDP/ESTCP Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., December, 2006.
- Young, M., T. Caldwell, D. Meadows, V. Etyemezian, D. Nikolic, D. Shafer, E. McDonald, J. Miller, and J. Goreham (2006). Hydrologic and Air Quality Impacts of a Soil-Applied, Organic Emulsion. Presented at the 18<sup>th</sup> World Congress of Soil Science, Philadelphia, Pennsylvania, July 9-15, 2006.
- Shafer, D.S., V. Etyemezian, M.H. Young, T. Caldwell, G. Nikolich, et al. (2006). Evaluation of organic-based emulsions for stabilization of dryland soils in the southwestern United States. Presented at the 8th International Conference on Development of Drylands, Beijing, China, February, 2006.
- Young, M., T. Caldwell, D. Meadows, V. Etyemezian, D. Nikolic, D. Shafer, E. McDonald, J. Miller, J. Goreham (2006). Hydrologic and Air Quality Impacts of a Soil-Applied, Organic Emulsion. SSSAEtyemezian, V., H. Kuhns, and G. Nikolich (2005). TRAKER: A method for fast assembly and update of paved and unpaved road dust emission inventories. Paper presented at the 2005 EPA Emission Inventory Conference, Las Vegas, NV, April, 2005.
- Etyemezian, V., H. Kuhns, G. Nikolich, D. Fitz, K. Bumiller, R. Merle, and R. Langston (2005). Vehicle based measurement of PM<sub>10</sub> paved road dust emissions in Las Vegas, NV. Spatial distribution of emissions using TRAKER. Paper presented at the *Air and Waste Management annual meeting*, Minneapolis, MN, June , 2005.
- Fitz, D.R., K. Bumiller, V. Etyemezian, H. Kuhns, and G. Nikolich (2005). Measurement of PM<sub>10</sub> emission rates from roadways in Las Vegas, Nevada using a SCAMPER mobile platform with real-time sensors. Paper presented at the *Air and Waste Management annual meeting*, Minneapolis, MN, June , 2005.
- Fitz, D.R., K. Bumiller, V. Etyemezian, H. Kuhns, and G. Nikolich (2005). Measurement of PM<sub>10</sub> emission rates from roadways in Las Vegas, Nevada using a SCAMPER mobile platform with real-time sensors. Paper presented at the *2005 EPA Emission Inventory Conference*, Las Vegas, NV, April, 2005.
- Gertler, A., H. Kuhns, J. Gillies, C. Damm, M. Abu-Allaban, R. Clayton, and D. Proffitt (2005). Road Dust Re-entrainment: The Impact of Winter Road Sand/Salt and Street Sweeping on Emissions, presented at the *Environmental Nuisances: Noise, Odour and Fugitive Dust Conference*, Mississauga, Ontario, Canada - May 9-11, 2005.
- Gertler, A., V. Etyemezian, J. Gillies, and H. Kuhns (2005). Methods to Assess Road Dust Resuspension, presented at the *16th Regional Conference of Clean Air and Environment in the Asian Pacific Area*, Tokyo, Japan, August 2-4, 2005.
- Etyemezian, V. E., M. Tesfaye, A. Yimer, J.C. Chow, D. Mesfin, T. Nega, G. Nikolich, J.G. Watson, and M. Wondmagegn (2005). Pilot-scale air quality study in Addis Ababa, Ethiopia. Paper presented at the 14th International Symposium on Transport and Air Pollution, Graz, Austria, June 1 – 3, 2005.
- Speckart, S.O., E.R. Pardyjak, V. Etyemezian, F. Yin, and J.M. Veranth (2005). Computational modeling of near-source deposition of fugitive dust on vegetative surfaces. Paper presented at the *Air and Waste Management annual meeting*, Minneapolis, MN, June , 2005.

- Fitz, D.R., K. Bumiller, V. Etyemezian, H. Kuhns, and G. Nikolich (2005). Measurement of PM<sub>10</sub> emission rates from roadways in Las Vegas, Nevada using a SCAMPER mobile platform with real-time sensors. Paper presented at the 2005 EPA Emission Inventory Conference, Las Vegas, NV, April, 2005.
- Etyemezian, V., H. Kuhns, G. Nikolich, A. Gertler, D. Fitz, K. Bumiller, R. Merle, and R. Langston (2005). "TRAKER: A Method for Fast Assembly and Update of Paved and Unpaved Road Dust Emission Inventories, presented at the *14th International Emission Inventory Conference, Transforming Emission Inventories - Meeting Future Challenges Today*, Las Vegas, NV, April 11-14, 2005.
- Etyemezian, V., A. Gertler, J. Gillies, H. Kuhns, D. Fitz, C. Damm, C. Denney, and J. (2005). Methods to assess road dust resuspension and results of recent studies. Paper presented at 15th CRC On-Road Vehicle Emissions Workshop, San Diego, California, April 4-6, 2005.
- Gillies, J.A., V. Etyemezian, H. Kuhns, G. Nikolich, and S. Ahonen (2004). Near-field transport and deposition of fugitive dust emissions from an unpaved Road. Paper presented *Western Pacific Geophysical Meeting*, Honolulu, HI, 19-24 August 2004.
- Etyemezian, V., D. Nikolic, H. D. Kuhns, H. Moosmüller, J. Xu, J. A. Gillies, S. Ahonen, and M. Pitchford (2004). PI-SWRL: a novel method for quantifying windblown dust emissions. Poster presented at the *23rd Annual Conference of the American Association for Aerosol Research*, Atlanta, GA, October 4-8, 2004.
- Varma, R., H. Moosmüller, W. P. Arnott, J. Walker, H. D. Kuhns, V. Etyemezian, and J.A. Gillies (2004). Emission factors of scattering cross section for visibility impairment from fugitive dust sources. Paper presented at the *Regional and Global Perspectives on Haze: Causes, Consequences, and Controversies* (AWMA Visibility Specialty Conference), Asheville, NC, October 25-29, 2004.
- Gillies, J.A., W.P Arnott, E. Etyemezian, D.A. Gillette, H. Kuhns, H. Moosmüller, W.G. Nickling, J. Allwine, and R. Hashmonay (2004). Characterizing and quantifying fugitive dust emissions from Department of Defense sources including unique military activities. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, SERDP/ESTCP, Washington, D.C., 29 Nov. - 2 Dec. 2004.
- Kuhns H., C. Mazzoleni, H. Moosmüller, D. Nikolic, R. Keislar, P. Barber, V. Etyemezian, J. Watson (2004) Spatial Analysis of Remotely Sensed Vehicle Exhaust Emissions from Light Duty Gasoline Vehicles in Clark County, Nevada. Paper presented at the *Air and Waste Management annual meeting*, Indianapolis, IN, June 22-25.
- Xu, J., D. DuBois, M. Green, D. Freeman, V. Etyemezian, and M. Pitchford (2004). Causes of Haze Assessment for WRAP Class I Areas - Preliminary Conceptual Model Development. Poster presented at the *Regional and Global Perspectives on Haze: Causes, Consequences, and Controversies* (AWMA Visibility Specialty Conference), Asheville, NC, October 25-29, 2004.
- Etyemezian, V., J. Xu, D. DuBois, M. Green, L. Alter, and M. Pitchford (2004). Assessment of the Major Causes of Dust-Resultant Haze in the Western United States. Paper presented at the *Regional and Global Perspectives on Haze: Causes, Consequences, and Controversies* (AWMA Visibility Specialty Conference), Asheville, NC, October 25-29, 2004.

- DuBois, D., J. Xu, M. Green, D. Freeman, V. Etyemezian, and M. Pitchford (2004). The Causes of Haze Assessment: An Overview. Poster presented at the *Regional and Global Perspectives on Haze: Causes, Consequences, and Controversies* (AWMA Visibility Specialty Conference), Asheville, NC, October 25-29, 2004.
- Xu, J., D. DuBois, M. Green, D. Freeman, V. Etyemezian, and M. Pitchford (2004). Assessment of the Major Causes of Haze in Class I Areas of the Western United States. Poster presented at the *23rd Annual Conference of the American Association for Aerosol Research*, Atlanta, GA, October 4-8, 2004.
- Veranth, J., E. Pardyjak, F. Yin, K. Perry, J. Chow, J. Watson, and V. Etyemezian (2004). Computational Modeling of Fugitive Dust on Vegetative Surfaces. Paper presented at the *23rd Annual Conference of the American Association for Aerosol Research*, Atlanta, GA, October 4-8, 2004.
- Veranth, J., R. Labban, J. Chow, J. Watson, V. Etyemezian, and J. Engelbrecht (2004). Development of new computational and analytical tools for distinguishing local and regional sources of fugitive dust. Poster presented at the *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 29 Nov. - 2 Dec. 2004.
- Arnott, W. P.; M. Green, J. Walker, H. Moosmuller; and V. Etyemezian (2003). Photoacoustic insight on the roles of soot and NO<sub>2</sub> in light absorption at Las Vegas, NV USA. *Proceedings vol 2 European Aerosol Conference*, Madrid, EAC.
- Etyemezian, V., D. Gillette, J. Gillies, H. Kuhns, D. Nikolic, J. Vernath, and J. Waston (2003). PM<sub>10</sub> Emissions Factors for Unpaved Roads: Correction for Near-Field Deposition. Presented at *PM AAAR 2003: Atmospheric Sciences, Exposure, Health and Welfare Effects, Policy*, Pittsburgh, American Association for Aerosol Research.
- Etyemezian, V., J. Gillies, H. Kuhns, D. Nikolic, J. Vernath, (2003). Reconciling Fugitive Dust Emissions with Ambient Measurements: Along the Unpaved Road. *Proceedings of the 12th International EPA Emission Inventory Conference: Emission Inventories - Applying New Technologies*, San Diego, US EPA.
- Etyemezian, V., J. Gillies, D. Gillette, H. Kuhns, J. Veranth, D. Nikolic, and J. Watson (2003). PM<sub>10</sub> Emissions Factors for Unpaved Roads: Correction for Near-Field Deposition. Presented at *2003 AAAR PM Meeting and Fourth Colloquium on PM and Health*, Pittsburgh, PA, American Association for Aerosol Research.
- Etyemezian, V., S. Ahonen, J. Gillies, H. Kuhns, H. Moosmuller, D. Nikolic, and M. Pitchford (2003). PI-SWIRL: A New Technique for Measuring Wind Blown Dust Emission Potential. Presented at *NARSTO Workshop on Innovative Methods for Emission-Inventory Development and Evaluation*, Austin, NARSTO.
- Etyemezian, V., J. Gillies, H. Kuhns, D. Nikolic, D. Gillette, G. Seshadri. and J. Veranth (2003). Estimating Near-Field Removal of Fugitive Dust: The Regionally-Transportable Fraction of PM<sub>10</sub> Emissions from Unpaved Roads Paper. Presented at *AWMA 96<sup>th</sup> Annual Conference and Exhibition*, San Diego, Air and Waste Management Association.

- Gillies, J., V. Etyemezian, H. Kuhns, D. Nikolic, and D.A. Gillette (2003). Effect of Vehicle Characteristics on Unpaved Road Dust Emissions. Presented at *AWMA 96<sup>th</sup> Annual Conference and Exhibition*, San Diego, Air and Waste Management Association.
- Gillies, J., V. Etyemezian, H. Kuhns, D. Nikolic, and D. Gillette (2003) Effect of Vehicle Characteristics on Unpaved Road Dust Emissions. Proceedings of the *12th International Symposium on Transport and Air Pollution*, Arcueil, France.
- Green, M; P. Arnott, J. Walker, and V. Etyemezian (2003). Comparison of NIOSH and IMPROVE methods for elemental carbon aerosol measurements with a photoacoustic method in a wintertime, urban, desert environment. Presented at *vol 2 European Aerosol Conference*, Madrid, EAC.
- Kuhns, H., V. Etyemezian, J. Gillies, M. Green, M. Pitchford, J. Watson (2003). Vehicle-Based Road Dust Emissions Measurements. Proceedings of *12th International EPA Emission Inventory Conference : Emission Inventories - Applying New Technologies*, San Diego, US EPA.
- Kuhns, H., V. Etyemezian, J. Gillies, D. Nikolic, S. Ahonen (2003). Spatially-Resolved, Direct Measurement of Road Dust Emissions from Vehicles. Presented at *NARSTO Workshop on Innovative Methods for Emission-Inventory Development and Evaluation*, Austin, NARSTO.
- Labban, R., J. M. Veranth, E. Pardyjak, F. Yin and V. Etyemezian (2003). Dust Emission from Unpaved Roads. Proceedings at *AWMA 96<sup>th</sup> Annual Conference and Exhibition*, San Diego, Air and Waste Management Association.
- Mazzoleni, C., P. Barber, V. Etyemezian, R. Keislar, H. Kuhns, H. Moosmuller, D. Nikolic, N. Robinson, and J. Watson (2003). On Road Optical Remote Sensing of Particulate Matter and Gaseous Emissions from Vehicles in the Las Vegas Area. Presented at *AWMA 96<sup>th</sup> Annual Conference and Exhibition*, San Diego, Air and Waste Management Association.
- Moosmüller, H., R. Varma, W. P. Arnott, J. Walker, H. D. Kuhns, V. Etyemezian, and J. A. Gillies (2003). Emission Factors for Visibility Impairment from Fugitive Dust Emissions. Presented at *NARSTO Workshop on Innovative Methods for Emission-Inventory Development and Evaluation*, Austin, NARSTO.
- Veranth, J; R. Labban, J. Watson, J. Chow, and V. Etyemezian (2003). Chemical mass balance for source apportionment of soil dust. Presented at *2003 Annual Conference of the American Association for Aerosol Research*, Anaheim, American Association for Aerosol Research.
- Veranth, J.M., R. Labban, J.G. Watson, J.C. Chow, and V. Etyemezian (2003). Contribution of Fugitive Dust to Regional PM. Presented at *2003 AAAR PM Meeting and Fourth Colloquium on PM and Health*, Pittsburgh, PA, American Association for Aerosol Research.
- Etyemezian, V., H. Kuhns, J. Gillies, M. Green, and M. Pitchford. (2002). Spatially-Resolved, Direct Measurement of Road Dust Emissions from Vehicles. Presented at the *7th International Symposium on Urban and Highway Pollution*, Barcelona.
- Gillies J., P. Arnott, V. Etyemezian, H. Kuhns, E. McDonald, H. Moosmuller, G. Schwemmer, D. Gillette, W. Nickling, T. Wilkerson, and K. Thome (2002) Characterizing and

- Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations. Presented at *2002 SERDP and ESTCP Symposium and Workshop*, Washington D.C. DoD/SERDP.
- Kuhns H., V. Etyemezian, J. Gillies, and M. Green (2002) Spatially-Resolved, Direct Measurement of Road Dust Emissions from Roads. Presented at *DoD Real-World Clean Air Symposium*, San Diego, DoD.
- Varma R., P. Arnott, H. Moosmuller, H. Kuhns, V. Etyemezian, and J. Gillies (2002) A new integrating nephelometer for aerosol light scattering studies. Presented at *2002 Annual Conference of the American Association for Aerosol Research*, Charlotte, American Association for Aerosol Research.
- Veranth, J., J. Watson, J. Chow, S. Seshadri, and V. Etyemezian (2002). Characterization of PM<sub>2.5</sub> Dust Emissions from Testing/Training Range Operations. Presented at *2002 SERDP and ESTCP Symposium and Workshop*, Washington D.C. DoD/SERDP.
- Veranth, J.M., G. Seshadri, D. Stephenson, J. Watson, and V. Etyemezian. Dust Emissions from Vehicles on Unpaved Roads. Presented at *2002 Annual Conference of the American Association for Aerosol Research*, Charlotte, American Association for Aerosol Research.
- Etyemezian, V., J. Chow, M. Green, H. Kuhns, and J. Watson (2001). Status of PM<sub>10</sub> and Ozone in Clark County and Related Issues. Presented at *2001 AWMA Las Vegas Chapter Technical Conference*, Las Vegas, Air and Waste Management Association.
- Green, M., A. Hecobian, V. Etyemezian, H. Kuhns, J. Chow, J. Watson, D. Ransel, and W. Cates (2001). Chemical composition of haze in the Las Vegas Valley. Presented at *AWMA Conference on Regional Haze and Global Radiation Balance*, Bend, Air and Waste Management Association.
- Hecobian, A., M. Green, V. Etyemezian, H. Kuhns, J. Chow, J. Watson, D. Ransel, W. Cates, (2001). Spatial and Temporal patterns of light scattering and light absorption in Las Vegas, Nevada. Presented at *AWMA Conference on Regional Haze and Global Radiation Balance*, Bend, Air and Waste Management Association.
- Kuhns, H.; P. Barber, V. Etyemezian, B. Johnson, R. Keislar, C. Mazzoleni, H. Moosemueller, J. Watson, and A. Yimer (2001). Vehicle Emissions Remote Sensing in Clark County. Presented at *2001 AWMA Las Vegas Chapter Technical Conference*, Las Vegas, Air and Waste Management Association.
- Kuhns, H.; V. Etyemezian; and P. Shinbein (2001) Relating Road Dust Emissions Surrogates to Average Daily Traffic and Vehicle Speed in Las Vegas, Nevada. *Proceedings of 12th International EPA Emission Inventory Conference*, Denver, EPA.
- Kuhns, H., M. Green, V. Etyemezian, J. Watson, and M., Pitchford (2001): Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study Emissions Inventory. Presented at *AWMA Conference on Regional Haze and Global Radiation Balance*, Bend, Air and Waste Management Association.
- Pitchford, M., M. Green, H. Kuhns, V. Etyemezian, R. Dietz, and J. Watson(2001). Perfluorocarbon Tracers Used to Study Transport and Dispersion during the BRAVO Study. Presented at *AWMA Conference on Regional Haze and Global Radiation Balance*, Bend, Air and Waste Management Association.

- Stockwell, W.R.; H. Kuhns, V. Etyemezian, M. Green, J. Chow, J. Watson, and N. Robinson (2001). Modeling of Ozone, Nitrogen Oxides, and Particles in the American Northwest. Presented at the *AWMA 94th Annual Conference and Exhibition*, Orlando, Air and Waste Management Association.
- Etyemezian, V., H. Kuhns, N. Robinson, and J. Watson (2000) The Use of Databases in Air Quality Field Studies. Presented at the *2000 NARSTO Conference*, Queretaro, Mexico, NARSTO.
- Kuhns H., V. Etyemezian, and W. Stockwell (2000) The Treasure Valley Secondary Aerosol Study. Presented at the *2000 NARSTO Conference*, Queretaro, Mexico, NARSTO.
- Kuhns, H., V. Etyemezian, D. Landwehr, and C. MacDougall (2000) Testing Re-entrained Aerosols Kinetic Emissions from Roads (TRAKER). Presented at the *AWMA 93<sup>rd</sup> Annual Conference and Exhibition*, Salt Lake City, Air and Waste Management Association.
- Chow, J.C., J.G. Watson, D. Crow, H. Kuhns, V. Etyemezian, and M. Green (2000) Source Profile and Emissions Rate Measurements during BRAVO. Presented at the *AWMA 93<sup>rd</sup> Annual Conference and Exhibition*, Salt Lake City, Air and Waste Management Association.
- Wells, R.C., H. Kuhns, V. Etyemezian, J.G. Watson, J.C. Chow, and J.V. Woy (2000) Adapting Hazardous Air Pollutant Emission Compliance Tests for Source Apportionment: Example for a Waste-to-Energy Facility. Presented at the *AWMA 93<sup>rd</sup> Annual Conference and Exhibition*, Salt Lake City, Air and Waste Management Association. Deposition of atmospheric pollutants on a limestone building
- Zufall, M., W. Dai, C.I. Davidson, and V. Etyemezian (1999). Mathematical Modeling and Wind Tunnel Experiments on Dry Deposition of Particles to Wave Surfaces. Presented at *1999 Annual Conference of the American Association for Aerosol Research*, Tacoma, WA, American Association for Aerosol Research.
- Strader, R; C. Davidson, V. Etyemezian, and S. Finger (1998). Vertical gradients of airborne concentration and deposition of pollutants on buildings. Presented at *5<sup>th</sup> International Aerosol Conference*, Edinburgh, Scotland, American Association for Aerosol Research.
- Etyemezian, V., .I. Davidson, S. Finger, M. Striegel, and J. Chow (1997). Effect of Rain Delivery on Soiling Patterns at the Cathedral of Learning. Presented at *1997 Annual Conference of the American Association for Aerosol Research*, Denver, American Association for Aerosol Research.
- Etyemezian, V; C.I. Davidson, S. Finger, N. Barabas, J. Doan, B. Fontaine, G. Mumpower, J. Venkat, S. Sherwood, and J.C. Chow (1995). Deposition of atmospheric pollutants on a limestone building. Presented at *1995 Annual Conference of the American Association for Aerosol Research*, Pittsburgh, American Association for Aerosol Research.
- Etyemezian, V., M.R. Lutz, C.I. Davidson, S. Finger, S.I. Sherwood, and J. Chow (1995). Deposition of Atmospheric Pollutants to a Limestone Building. Proceedings of *National Conference for Innovative Technologies and Hazardous Waste Management*, Pittsburgh, American Society of Civil Engineers.



**RESEARCH ACTIVITY***Completed*

- *Testing Re-entrained Aerosol Kinetic Emissions from Roads (TRAKER)*, Clark County, Nevada Regional Transportation Commission, (02-SEP-99 to 01-DEC-99, \$24,600, Co-PI).
- *Treasure Valley Secondary Aerosol Formation Study*, State of Idaho Department of Environmental Quality, (25-OCT-99 to 15-NOV-00, \$297,315, Co-PI).
- *Big Bend Regional Aerosol and Visibility Observational Study (BRAVO)*, National Oceanic & Atmospheric Administration, (01-JUL-01 to 30-JUN-06, \$110,000, Co-I).
- *Big Bend Regional Aerosol and Visibility Observational Study*, National Oceanic & Atmospheric Administration, (01-MAY-98 to 30-APR-99, \$467,900, Co-I).
- *Treasure Valley/Boise Road Dust Study*, State of Idaho Department of Environmental Quality, (01-DEC-00 to 31-JAN-02, \$370,632, PI).
- *Field Testing and Evaluation of Dust Deposition and Removal Mechanisms*, WESTAR, (01-JAN-02 to 31-DEC-02, \$94,936, PI).
- *Las Vegas "Drive-Off" Project*, Clark County, Nevada. Department of Air Quality and Environmental Management, (01-OCT-04 to 30-SEP-05, \$44,675, PI)
- *Assessment of the Major Causes of Dust-Resultant Haze in the WRAP*, Western Governor's Association, (01-JUL-04 to 31-DEC-04, \$50,291, PI)
- *Alternate Technologies for Quantifying Pave Road Dust Emission Measurements (Drive-off Phase II)*, Clark County, Nevada, Department of Air Quality and Environmental Management, (01-OCT-04 to 30-SEP-05, \$30,301, PI)
- *Pollutant Emissions Study for Biodiesel (B20)*, Community Planning Association of Southwest Idaho, (03-NOV-03 to 31-OCT-04, \$111,000, Co-I).
- *Lake Tahoe Source Characterization Study*, State of California - Air Resources Board, (30-JUN-02 to 31-DEC-03, \$120,489, Co-I).
- *Particulate Matter Emissions Factors for Dust from Unique Military Activities*, DOD - Strategic Environmental R&D Program, (24-SEP-04 to 24-SEP-08, \$50,000, Co-I).
- *Las Vegas Air Study*, DOT - Federal Transit Administration, (14-MAY-99 to 30-SEP-05, \$2,212,728, Co-I).
- *Soils Equipment Preparation and Calibration for Ambient Monitoring*, DOE (01-OCT-03 to 30-SEP-04, \$113,243, PI)
- *Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations*, DOD - Strategic Environmental R&D Program, (01-OCT-00 to 26-JAN-05, \$973,000, Co-PI).
- *Las Vegas Valley Carbon Source Apportionment Study*, Clark County, (01-JUN-02 to 30-JUN-03, \$141,289.79, Co-I).
- *Salton Sea Ecosystem Restoration – Air Quality: Peer-Review*, CA Department of Water Resources (01-JAN-05 to 31-MAR-05, \$13,000, PI)
- *Salton Sea Ecosystem Restoration – Air Quality: Preparation of Work Plan*, CA Department of Water Resources (01-JAN-05 to 31-MAR-05, \$71,000, PI)
- *Field Study of ENCAPCO Treatment Product at Smoky Site*, NTS, Nevada, ENCAPCO Inc (01-APR-03 to 31-DEC-05, \$196,789, PI)
- *Uranium Oxide Soil Stabilization Study in Yuma Proving Ground*, AZ, ENCAPCO Inc (01-JAN-05 to 31-DEC-2006, \$496,324, Co-I)
- *Salton Sea Ecosystem Restoration – Air Quality: Field Work*, CA Department of Water Resources (01-AUG-05 to 01-AUG-06, \$200,796, PI)
- *New Mexico SIP Pilot Study*, Western Governors Association, (01-OCT-05 to 31-DEC-05, \$20,000, Co-I)



- Air Quality Monitoring, Yucca Mountain Environmental Monitoring Program, Department of Energy, (01-OCT-05 to 31-SEP-06, \$341,841, Co-I)
- *Particulate Matter Emissions Factors for Dust from Unique Military Activities*, DOD - Strategic Environmental R&D Program, (24-SEP-04 to 24-SEP-08, \$2,100,000, Co-I).
- Pre-remediation Ambient Monitoring and PI-SWERL, DOE (01-JAN-06 to 31-SEP-06, \$153,000, PI)
- Measurement and Modeling of fugitive dust emissions from paved road travel in the Lake Tahoe Basin, EPA, (9/1/05 – 3/1/07, \$174,886, Co-I)
- Community-scale Monitoring of Air Toxics in Albuquerque, NM (CMATA), Albuquerque, Department of Environment (6/1/06 – 6/1/08, \$350,000, Co-I)
- Paved Road Dust Emissions Phase 4 Empirical Study, Clark County Department of Air Quality and Environmental Management (6/6/06 – 6/30/07, \$133,063, PI)
- Playa analogs to the Salton Sea, State of California Department of Water Resources, 2/1/06 – 6/30/06, \$73,475, Co-I)
- Sediment Transport to White-Margined Penstemon Habitat, BLM/ Clark County, (9/1/06 – 8/31/09, \$800,553, PI)
- Assessment of BMP Effectiveness to Reduce Resuspended Road Dust in the Lake Tahoe Basin, USDA- Forest Service (1/1/08 – 12/31/08, \$397,756, Co-I)
- Ozone Precursor Study in the Treasure Valley, Idaho, State of Idaho Department of Environmental Quality, (5/1/07 – 12/31/07, \$70,000, Co-I)
- PI-SWERL in support of USGS Field Measurements, DOI- USGS, (8/1/07 – 7/31/08, \$21,527, Co\_I)
- Nellis Dunes Emissions Measurement Support, DOI – BLM, (9/1/07 – 10/1/08, \$22,330, Co-I)
- Characterization of Salt Crust at the Salton Sea, California, California Department of Water Resources, 2/1/07 – 11/1/07, Co-I)
- Analysis support for the Clark County Paved Road Dust Study, Clark County Department of Air Quality and Environmental Management (4/1/08 – 6/30/08, \$8,952, PI)
- Fire Erosion Monitoring at the Gleason Burn Site, DOE – Albuquerque, (9/30/08 – 9/30/09, \$173,885, PI)
- Portable In-situ Wind Erosion Lab (PI-SWERL): Testing and validation, NSF (9/1/08 – 8/31/09, \$44,469, Co-I)
- NVREC: Enabling Technologies for Solar Energy Development in Nevada, DOE, (10/1/10 – 9/31/11, \$61,365, PI)
- Salton Sea MgCl treatment evaluation support, Imperial Irrigation District, (5/15/11 – 7/15/11, \$48,570, PI)
- PI-SWERL Characterization of Emissions near Salt Lake City, Utah, (7/22/11 – 12/31/11, \$33,278, PI)
- Technical Review and Ozone Data Analysis, New Mexico State University, (9/1/12 – 10/30/12, \$24,000, PI)
- Fugitive Sources of PM10 and Laboratory Analysis of Airborne Samples, (9/1/2012 – 6/30/2013, \$35,028, PI)
- Technical, Training, and Field Support for Windblown Dust Emission Inventory for the International Border Region of Southern NM (ID: 14333) , New Mexico State University, (4/11/13 – 11/15/14, \$15,053)
- Using the Portable In-situ Wind Erosion Lab (PI-SWERL) to Characterize the Dust Emission Potential of the ODSVRA and Associated Dunes Natural Preserves (ID: 14332), California State Parks, (4/1/13 – 12/31/13, \$138,132, Co-I)
- Department of Energy Support for Contaminated Soils, DOE – Albuquerque, (10/1/13 – 9/30/14, \$1,353,333, Co-I)

- Characterizing IPETS, Great Basin Unified Air Pollution District, (7/1/14 – 6/30/15, \$56,927, Co-I)
- Department of Energy Support for Contaminated Soils, DOE – Albuquerque, (10/1/14 – 9/30/15, \$1,535,812, Co-I)

*In Progress*

- Ocotillo Wells SVRA: Dust Control Pilot Study Development, Implementation and Monitoring (ID: 14592), 9/10/13 – 9/1/16, \$518,217, PI)
- Testing Engineered Roughness to Control Dust Emissions from Owens Lake (ID: 14536). Great Basin Unified Air Pollution Control District, (7/1/13 – 6/30/14, \$423,000, Co-I)
- Oceano Dunes Dust Control Effectiveness Analysis, California State Parks, 5/1/14 – 6/30/16, (\$549,802, Co-I)
- Vertical Profiles, Size Distributions, and Intermittency in Aeolian Sediment Transport: Field Measurements with a Novel Instrument, NSF, (10/1/11 – 9/30/13, \$207,000, PI)

**PROFESSIONAL ACTIVITIES**