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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 - .
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- 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

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- 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
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- 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
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- 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.
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- 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.
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- 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 PM₁₀ 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.
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- 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
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PATENTS AND INTELLECTUAL PROPERTY ACTIVITIES

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- 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.
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- 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
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- 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.
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- 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.
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- 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 25th 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.
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- Beres, N. D., P. G. Piedra, V. R. Etyemezian, W. P. Arnott, and H. Moosmüller (2015). Mineral Dust Deposition and Solar Cell Spectral Performance. 34th 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.
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- 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.
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- 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.
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- 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.
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- 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.

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- 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 93rd 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 93rd 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 93rd 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 *5th 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