

JOHN A. GILLIES, Ph.D

Research Professor
 Division of Atmospheric Sciences
 Desert Research Institute
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Citizenship: Canadian with U.S. Permanent Resident Status

Education

Ph.D.	Physical Geography	1995	University of Guelph, Ont.
M.S.	Physical Geography	1987	University of Guelph, Ont.
B.S. Honors	Physical Geography	1983	University of Guelph, Ont.

Experience

Dr. John A. Gillies has over 20 years experience in the research field of aeolian processes. Currently his research focuses on the physics of fugitive dust emission by wind and anthropogenic processes, the transport and deposition process, as well as the mitigative actions that can be taken to ameliorate this environmental problem. A second major research initiative he is currently working on is understanding and modeling boundary-layer flow over sparsely vegetated rangelands, Antarctic polar desert surfaces, and Martian surfaces to characterize the effects of the roughness elements on sand transport and dust emissions. He is using shear stress partitioning theory and full scale field-testing to reconcile model predictions with measurements. Dr. Gillies is also investigating the effectiveness of managed vegetation covers and surface treatments to reduce dust emissions from susceptible surfaces. Dr. Gillies has collaborated in the design, construction, and utilization of portable field wind tunnels and the attendant specialized instrumentation for measuring surface shear stress and the *in situ* emission rates of particulates from various types of surface that are susceptible to wind erosion and fugitive emissions. He has also been involved in developing tower-based monitoring systems for measuring particulate concentration profiles in the atmosphere for estimating vertical fluxes. This instrumentation was developed primarily for use in remote, logistically difficult situations. He has also been involved in research that has examined the role of the surficial characteristics that control the release of dust to the atmosphere in the southwest United States, West Africa, and Canada.

Professional Experience

July 2007 to Present	Research Professor Division of Atmospheric Sciences, Desert Research Institute, Reno NV
2001 to 2007	Associate Research Professor

Division of Atmospheric Sciences, Desert Research Institute, Reno NV

2001 to Present Associate Graduate Faculty
Department of Geography, University of Guelph, Guelph, ON, Canada

1997 to Present Member Graduate Faculty
Physics Department, University of Nevada, Reno.

1996 to 2000 Assistant Research Professor
Division of Atmospheric Sciences, Desert Research Institute, Reno, NV.

1994 - 1996 Post Doctoral Research Associate
Energy and Environmental Engineering Center, Desert Research Institute, Reno, NV.

1990 - 1994 Graduate Student, Graduate Teaching Assistant, Course Instructor, & Occasional Lecturer
Department of Geography, University of Guelph, Guelph, ON, Canada

1987-1990 Research Coordinator, Sahelian Aerosols Project
International Development Research Centre, Ottawa, Canada
(position held at the Department of Geography, University of Guelph)
Research Coordinator
MND Associates, Environmental Consultants, Guelph, ON, Canada

1985-1987 Graduate Student
Department of Geography, University of Guelph, Guelph, ON, Canada
Research Assistant
MND Associates, Environmental Consultants, Guelph, ON, Canada

Awards

University Graduate Scholarship, University of Guelph, Guelph, ON, Canada, 1991

Ontario Graduate Scholarship, Provincial Government of Ontario, 1992-1994

U.S. Department of Defense, Strategic Environmental Research and Development Program, Compliance Project of the Year Award, 2004

U.S. Army Corp of Engineers, Construction Engineering Laboratory, Research and Development Award, 2008

Professional Service

Member DRI Faculty Senate (2006 – present)

Committee Member, DRI, Peter B. Wagner Memorial Award for Women in Atmospheric Sciences (2002 – present)

Committee Member, DRI Institute Project Assignments (2006 – 2009)

Committee Chair, DRI Institute Project Assignments (2009)

Member, DRI Library Committee (2002 – Present)

Associate Editor, *Journal of Sedimentary Research* (2002 – present)

Journals Reviewed for:

Agriculture, Ecosystems and Environment; Atmospheric Environment; Contributions to Atmospheric Physics; Earth Surface Processes and Landforms; Environmental Engineering Science; Environmental Fluid Mechanics; Environmental Science and Technology; Geomorphology; Geophysical Research Letters; Journal of the Air & Waste Management Association; Journal of Applied Meteorology; Journal of Arid Environments; Journal of Environmental Management; Journal of Environmental Quality; Journal of Geophysical Research–Atmospheres; Journal of Geophysical Research–Earth Surface; Journal of Geophysical Research–Planets; Journal of Hazardous Material; Journal of Soil and Water Conservation; Journal of Water Air and Soil Pollution; Kuwaiti Journal of Science and Engineering; Journal of Sedimentary Research; Sedimentology; Soil Science Society of America Journal

Proposals Reviewed for:

Deutsch-Amerikanisches Akademisches Konzil (DAAK)

U.S. Department of Agriculture, Cooperative State Research, Education and Extension Service

U.S. EPA, STAR Peer Review Panel: Sources, Composition, and Health Effects of Coarse Particulate Matter (06-Q1)

U.S. National Science Foundation: 1) DEB Ecosystem Science Cluster, 2) Ecosystems Studies Program, 3) Geomorphology and Land Use Dynamics Program

Conferences:

Session Organizer and Chair, Fundamental Aeolian Processes, *Joint Meeting of the 5th International Conference on Aeolian Research (ICAR V) & The Global Change and Terrestrial Ecosystem-Soil Erosion Network*, Texas Tech University, Lubbock, TX, USA, 22-25 July, 2002.

Session Organizer and Chair Dust Entrainment, Transport and Deposition I & II, *The Sixth International Conference on Aeolian Research (ICAR VI)*, University of Guelph, Ontario, Canada, 23-28 July, 2006

Co-organizer, *The Sixth International Conference on Aeolian Research (ICAR VI)*, University of Guelph, Ontario, Canada, 23-28 July, 2006.

Organizing Committee, *The Seventh International Conference on Aeolian Research (ICAR VII)*, Santa Rosa, Argentina.

Academic Service

M.S. Students Supervised:

Michael O'Connor (Atmospheric Sciences, University of Nevada, Reno, 1998)

M.S. Committee Service:

Flora Gofa (Atmospheric Sciences, University of Nevada, Reno, 1998)

Carroll Luttmner (Geography, University of Guelph, 2002)

Jennifer Bryant (Geography, University of Guelph, 2004)

Gayathri Parthasarathy (Computer Engineering, University of Nevada, Reno, 2006)

Torin Mcpherson (Geography, University of Guelph, 2006)

Shannon Brown (Geography, University of Guelph, 2006)

Monika Saaliste (Geography, University of Guelph, 2008)

Jerrold McAlpine (Atmospheric Sciences, University of Nevada, Reno, in progress)

Michael Tilson (Geography, University of Guelph, in progress)

Jeff Ord (Geography, University of Guelph, in progress)

Ph.D. Committee Service:

M. Abu-Allaban (Physics, University of Nevada, Reno, 2003)

Julide Koračin (Atmospheric Sciences, University of Nevada, Reno, 2005)

James King (Geography, University of Guelph, 2007)

Laura Brown (Geography, University of Guelph, 2007)

Davis Zhu (Atmospheric Sciences, University of Nevada, Reno, 2008)

Ph.D. External Examiner:

Harry Butler (Environmental Sciences, Griffith University, 2004)

Post-Doctoral Supervision:

James King (DRI, Division of Atmospheric Sciences, 2006)

Courses Taught

Measurement in the Atmosphere, Course 748, Atmospheric Sciences Program, Department of Physics, University of Nevada, Reno

Publications

Chapters in books:

Nickling, W.G. and J.A. Gillies (1989). Emission of fine-grained particulate from desert soils. In *Paleoclimatology and Paleometeorology: Modern and Past Patterns of Global Atmospheric Transport*, M. Leinen and M. Sarnthein (eds.), Kluwer Academic Publishers, pp. 133-165.

Hashmonay, R.A., R.H. Kagann, M.J. Rood, B.J. Kim, M.R. Kemme, and J.A. Gillies (2009). An advanced test method for measuring fugitive dust emissions using a hybrid system of optical remote sensing and point monitor techniques. *Atmospheric and Biological Environmental Monitoring*, Springer (in press).

Edited Journal Volumes:

Gillies, J., N. Lancaster, C. McKenna Neuman, I. Livingstone, and W. Nickling (2004). Special Issue, Aeolian Research: processes, instrumentation, landforms and paleoenvironments. *Geomorphology* **59**: 1-291.

Edited Conference Abstracts:

Lancaster, N., K. Redmond, and J.A. Gillies (1997). *Program and Abstracts: Changing Water Regimes in Drylands*, 9-13 June, 1997, 61 p.

Nickling, W.G., S. Turner, J.A. Gillies, and M. Puddister (2006). *Program and Abstracts: Sixth International Conference on Aeolian Research*, 24-28 July, 2006, 234 p.

Refereed Journals:

Nickling, W.G. and J.A. Gillies (1993). Dust emission and transport in Mali, West Africa. *Sedimentology* **40**: 859-868.

Gillies, J.A., W.G. Nickling, and G. McTainsh (1996). Dust concentrations and particle-size characteristics of an intense dust haze event: Inland Delta Region, Mali, West Africa. *Atmospheric Environment* **30** (7): 1081-1090.

Moosmüller, H., J.A. Gillies, C.F. Rogers, D.W. DuBois, J.C. Chow, J.G. Watson, and R. Langston (1998). Particulate emission rates for unpaved shoulders along paved roads. *The Journal of the Air & Waste Management Association* **48**: 398-407.

Chow, J.C., J.G. Watson, D. DuBois, M. Green, D. Lowenthal, S. Kohl, R. Egami, J.A. Gillies, C.F. Rogers, and C. Frazier (1999). Middle- and neighborhood-scale variations of PM₁₀ source contributions in Las Vegas, Nevada. *The Journal of the Air & Waste Management Association* **49**: 641-654.

Gillies, J.A., C.M. O'Connor, Y. Mamane, and A.W. Gertler (1999). Chemical profiles for characterizing dust sources in an urban area, western Nevada, USA. *Zeitschrift für Geomorphologie Supplementband* **116**: 19-44.

Gillies, J.A., J.G. Watson, C.F. Rogers, D. DuBois, J.C. Chow, R. Langston, and J. Sweet (1999). Long term efficiencies of dust suppressants to reduce PM₁₀ emissions from unpaved roads. *The Journal of the Air & Waste Management Association* **49**: 3-16.

Gillies, J.A. and A.W. Gertler (2000). Comparison and evaluation of chemically speciated mobile source PM_{2.5} particulate matter profiles. *The Journal of the Air & Waste Management Association* **50**: 1459-1480.

Gertler, A.W., J.A. Gillies, and W.R. Pierson (2000). An assessment of the mobile source contributions to PM₁₀ and PM_{2.5} in the United States. *Water, Air and Soil Pollution* **123 / 1-4**: 203-214.

- Gillies, J.A., N. Lancaster, W.G. Nickling, and D. Crawley (2000). Field determination of drag forces and shear stress partitioning effects for a desert shrub (*Sarcobatus vermiculatus*, Greasewood). *Journal of Geophysical Research, Atmospheres* **105** (D20): 24871-24880.
- Moosmüller, H., W.P. Arnott, C.F. Rogers, J.L. Bowen, J.A. Gillies, W.R. Pierson, J.F. Collins, T.D. Durbin, and J. M. Norbeck (2001). Time resolved characterization of diesel particulate emissions: 1. Instruments for particle mass measurements. *Environmental Science & Technology* **35**: 781-787.
- Moosmüller, H., W. P. Arnott, C. F. Rogers, J. L. Bowen, J.A. Gillies, W. R. Pierson, J. F. Collins, T. D. Durbin, and J. M. Norbeck (2001). Time resolved characterization of diesel particulate emissions: 2. Instruments for elemental and organic carbon measurements. *Environmental Science & Technology* **35**: 1935-1942.
- Gillies, J.A., A.W. Gertler, J.C. Sagebiel, and W.A. Dippel (2001). On-road PM_{2.5} and PM₁₀ emission factors in the Sepulveda Tunnel, Los Angeles, California. *Environmental Science & Technology* **35**: 1054-1063.
- Gertler, A.W., M. Abu-Allaban, W. Coulombe, J.A. Gillies, W. Pierson, C.F. Rogers, J.C. Sagebiel, L. Tarnay, and T.A. Cahill (2001). Measurements of mobile source particulate emissions in a highway tunnel. *International J. of Vehicle Design* **27** (1/2/3/4): 86-93.
- Gillies, J.A. and A.W. Gertler (2001). Comparison and evaluation of chemically speciated mobile source PM_{2.5} profiles. *International J. of Vehicle Design* **27** Nos. 1/2/3/4 209-216.
- Abu-Allaban, M., W. Coulombe, A.W. Gertler, J.A. Gillies, W.R. Pierson, C.F. Rogers, J. C. Sagebiel, and L. Tarnay (2002). Exhaust particle size distribution measurements at the Tuscarora Mountain Tunnel. *Aerosol Science & Technology* **36**: 771-789.
- Gillies, J.A., W.G. Nickling, and J. King (2002). Drag coefficient and plant form-response to wind speed in three plant species: Burning Bush (*Euonymus alatus*), Colorado Blue Spruce (*Picea pungens glauca.*), and Fountain Grass (*Pennisetum setaceum*). *Journal of Geophysical Research, Atmospheres* **107** (D24): 10-1 – 10-15.
- Gillies, J.A. and W.G. Nickling (2003). Entrainment of radio frequency chaff by wind as a function of aerodynamic roughness. *The Journal of the Air & Waste Management Association* **53**: 206-216.
- Etyemezian, V., H. Kuhns, J.A. Gillies, M. Green, M. Pitchford, and J. Watson (2003). Vehicle based road dust emissions measurement (I): methods and calibration. *Atmospheric Environment* **37**: 4559–4571.

- Etyemezian, V., H. Kuhns, J.A. Gillies, J. Chow, M. Green, K. Hendrickson, M. McGowan, and M. Pitchford. (2003). Vehicle based road dust emissions measurement (III): effect of speed, traffic volume, location, and season on PM₁₀ road dust emissions. *Atmospheric Environment* **37**: 4583–4593.
- Abu-Allaban, M., J.A. Gillies, and A.W. Gertler (2003). Applications of a multi-lag regression approach to determine on-road PM₁₀ and PM_{2.5} emission rates. *Atmospheric Environment* **37**: 5157-5164.
- Abu-Allaban, M., J.A. Gillies, and A.W. Gertler (2003). Tailpipe, resuspended road dust, and brake-wear emission factors from on-road vehicles. *Atmospheric Environment* **37**: 5283-5293.
- Gillies, J.A. and L. Berkofsky (2004). Eolian suspension above the saltation layer, the concentration profile. *Journal of Sedimentary Research* **74** (2): 176-183.
- Etyemezian, V., J.A. Gillies, H. Kuhns, D. Gillette, S. Ahonen, D. Nikolic, 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.
- Kuhns, H., V. Etyemezian, J.A. Gillies, S. Ahonen, C. Durham, and D. Nikolic (2005). Spatial variability of unpaved road dust emissions factors near El Paso, Texas. *Journal of the Air and Waste Management Association* **55**: 3-12.
- Gillies, J.A., V. Etyemezian, H. Kuhns, D. Nickolic, and D.A. Gillette (2005). Effect of vehicle characteristics on unpaved road dust emissions. *Atmospheric Environment* **39**: 2341–2347.
- 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. *Journal of the Air and Waste Management Association* **55**: 1743-1750.
- King, J., W.G. Nickling, and J.A. Gillies (2005). Representation of vegetation and other non-erodible elements in aeolian shear stress partitioning models for predicting transport threshold. *Journal of Geophysical Research, Earth Surface* **110** (F4): F04015 doi: 10.1029/2004JF000281.
- Gillies, J.A., W.G. Nickling, and J. King (2006). Aeolian sediment transport through large patches of roughness in the atmospheric inertial sublayer. *Journal of Geophysical Research, Earth Surface* **111**, F02006, doi: 10.1029/2005JF000434.
- King, J., W.G. Nickling, and J.A. Gillies (2006). Aeolian shear stress ratio measurements within mesquite-dominated landscapes of the Chihuahuan Desert, New Mexico, USA. *Geomorphology* **82** (3-4): doi: 10.1016/j.geomorph.2006.05.004, 229-244.
- Gertler, A., H. Kuhns, M. Abu-Allaban, C. Damm, J. Gillies, V. Etyemezian, R. Clayton, D. Proffitt (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.

- Lancaster, N., J.A. Gillies, and W.G. Nickling (2006). Recent progress in aeolian research. *EOS* **87** (45), 7 November 2006.
- Abu-Allaban, M., J. Gillies, A. Gertler, R. Clayton, and D. Proffitt (2006). Motor vehicle contributions to ambient PM₁₀ and PM_{2.5} at selected urban areas in the U.S. *Environmental Monitoring and Assessment* doi: 10.1007/s10661-006-9511-3.
- Gillies, J.A., W.G. Nickling, and J. King (2007). Shear stress partitioning in large patches of roughness in the atmospheric inertial sublayer. *Boundary-Layer Meteorology* **122** (2), doi: 10.1007/s10546-006-9101-5, 367-396.
- Etyemezian, V., G. Nikolich, S. Ahonen, M. Pitchford, M. Sweeney, J. Gillies, and H. Kuhns (2007). The Portable In-Situ Wind Erosion Laboratory (PI-SWERL): a new method to measure PM₁₀ windblown dust properties and potential for emissions. *Atmospheric Environment* **41**: 3789-3796.
- Gillies, J.A., V. Etyemezian, H. Kuhns, J. Engelbrecht, S. Uppapalli, and G. Nikolich (2007). Dust emissions caused by backblast from Department of Defense artillery testing. *Journal of the Air & Waste Management Association* **57**, doi:10.3155/1047-3289.57.5.551, 551–560.
- Brown, L.J., W.G. Nickling, and J.A. Gillies (2007). Wind erosion from a semi-arid rangeland in the Chihuahuan Desert, New Mexico. *Journal of Arid Environments* (submitted).
- Brown, L.J., W.G. Nickling, and J.A. Gillies (2007). Field measurements of surface crust strength and subsequent dust erosion. *Geomorphology* (submitted).
- Brown, L.J., W.G. Nickling, and J.A. Gillies (2007). Modeling wind erosion in rangeland environments. *Environmental Modelling and Software* (submitted).
- Sweeney, M., V. Etyemezian, T. Macpherson, W. Nickling, J. Gillies, G. Nikolich, and E. McDonald (2008). Comparison of PI-SWERL with dust emission measurements from a straight-line field wind tunnel. *Journal of Geophysical Research, Earth Surface* **113**, F01012, doi:10.1029/2007JF000830.
- King, J., W.G. Nickling, and J.A. Gillies (2008). Investigations of the law-of-the-wall over sparse roughness elements. *Journal of Geophysical Research, Earth-Surface* **113**, F02S07, doi:10.1029/2007JF000804.
- Brown, S. W.G. Nickling, and J.A. Gillies (2008). A wind tunnel examination of shear stress partitioning for an assortment of surface roughness distributions. *Journal of Geophysical Research, Earth Surface* **113**, F02S06, doi:10.1029/2007JF000790.
- Macpherson, T., W.G. Nickling, J.A. Gillies, and V. Etyemezian (2008). Dust emissions from undisturbed and disturbed supply limited desert surfaces. *Journal of Geophysical Research, Earth Surface* **113**, F02S04, doi:10.1029/2007JF000800.
- Gillies, J.A., M. Abu-Allaban, A.W. Gertler, D. Lowenthal, B. Jennison, and A. Goodrich (2008). Enhanced PM_{2.5} source apportionment using chemical mass balance receptor modeling and scanning electron microscopy. *Jordan Journal of Earth and Environmental Sciences* **1** (1): 1-9.

- Gillies, J.A., W.G. Nickling, and M. Tilson (2009). Ventifacts and wind eroded rock features in the Taylor Valley, Antarctica. *Geomorphology* **107**: 149-160, doi:10.1016/j.geomorph.2008.12.007.
- Engelbrecht, J.P., E.V. McDonald, J.A. Gillies, R.K.M. Jayanty, G. Casuccio, and A.W. Gertler (2009). Characterizing mineral dusts and other aerosols from the Middle East - Part 1: Ambient Sampling. *Inhalation Toxicology* **21**: 327-336.
- Engelbrecht, J.P., E.V. McDonald, J.A. Gillies, R.K.M. Jayanty, G. Casuccio, and A.W. Gertler (2009). Characterizing mineral dusts and other aerosols from the Middle East - Part 2: Grab samples and re-suspensions. *Inhalation Toxicology* **21**: 297-326.
- Gillies, J.A., W.G. Nickling, J. King, and N. Lancaster (2009). Modeling aeolian sediment transport thresholds on Mars: a shear stress partitioning approach. *Geomorphology* 10.1016/j.geomorph.2009.02.016.
- 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 & Waste Management Association* **59**: 603-612, 10.3155/1047-3289.595.603.
- 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 & Waste Management Association* (in press).
- Lancaster, N., W.G. Nickling, and J.A. Gillies (2009). Sand transport by wind on complex surfaces: field studies in the McMurdo Dry Valley, Antarctica. *Journal of Geophysical Research – Earth Surface* (submitted).
- McAlpine, J.D., D. Koračin, J.A. Gillies, D. Boyle, and E. McDonald (2009). Rotorcraft ground-effect wake observations from a full-scale experiment over desert terrain. *Journal of the American Helicopter Society* (submitted).
- Gillies, J.A., V. Etyemezian, H. Kuhns, J.D. McAlpine, S. Uppapalli, G. Nikolich, and J. Engelbrecht (2009). Dust emissions created by low-level rotary-winged aircraft flight over desert surfaces. *Atmospheric Environment* (submitted).
- Kuhns, H., J.A. Gillies, V. Etyemezian, G. Nikolich, J. King, D. Zhu, S. Uppapalli, J. Engelbrecht, and S. Kohl (2009). Particulate matter emissions from wheeled and tracked vehicles operating on unpaved roads. *Aerosol Science and Technology* (submitted).

Refereed Research Reports

- Gertler, A.W., J.A. Gillies, W.R. Pierson, C.F. Rogers, J.C. Sagebiel, M. Abu-Allaban, W. Coulombe, L. Tarnay, and T.A. Cahill (2002). Real-world particulate matter and gaseous emissions from motor vehicles in a highway tunnel. In *Emissions from Diesel and Gasoline Engines Measured in Highway Tunnels*, Health Effects Institute, Research Report 107, Health Effects Institute, Boston, MA, pp. 5-56.

Refereed Conference Proceedings:

- Magliano, K.A., J.C. Chow, J.G. Watson, J.A. Gillies, R. Egami, P. Roberts, D. Wright, D. Crow, C. Berkowitz, J. Neumann, and P. Solomon (1996). Integrated Monitoring Study: temporal variability of particulate matter - preliminary results. In *Proceedings of the International Specialty Conference on Measurement of Toxic and Related Air Pollutants*, Research Triangle Park, NC, 7-9 May 1996, Air and Waste Management Association, Pittsburgh, PA, pp. 451-471.
- Solomon, P.A., J.C. Chow, J.G. Watson, J.A. Gillies, R. Egami, K.L. Magliano, P. Roberts, D. Wright, D. Crow, J. Neumann, and C. Berkowitz (1996). Integrated Monitoring Study: spatial and temporal variability of PM₁₀ during the fall saturation study-preliminary results. In *Proceedings of the International Specialty Conference on Measurement of Toxic and Related Air Pollutants*, Research Triangle Park, NC, 7-9 May 1996, Air & Waste Management Association, Pittsburgh, PA, pp. 434-450.
- Watson, J.G., J.C. Chow, J.A. Gillies, and C.F. Rogers (1996). Methods to determine the effectiveness of fugitive dust control measures. *Proceedings 89th Annual Meeting, Air & Waste Management Association*, Nashville, TN, 23-28 June 1996.
- Moosmüller, H., J.A. Gillies, C.F. Rogers, D.W. DuBois, J.C. Chow, J.G. Watson, and R. Langston (1997). Particulate emission rates for unpaved shoulders along paved roads. *Proceedings 90th Annual Meeting, Air & Waste Management Association*, Toronto, ON, 9-13 June 1997.
- Gillies, J.A., J.G. Watson, C.F. Rogers, D. DuBois, and J.C. Chow (1997). PM₁₀ emissions and dust suppressant efficiencies on an unpaved road, Merced County, CA. *Proceedings 90th Annual Meeting, Air & Waste Management Association*, Toronto, ON, 9-13 June 1997.
- Gillies, J.A., A.W. Gertler, J.C. Sagebiel, and W.A. Dippel (1998). On-road PM_{2.5} and PM₁₀ emission factors in the Sepulveda Tunnel, Los Angeles, California. In *PM_{2.5} A Fine Particle Standard, Proceedings of a Specialty Conference*, J.C. Chow and P. Koutrakis (eds.), The A&WMA, U.S. EPA, U.S. DOE, 28-30 Jan. 1998, pp. 677-698.
- Gillies, J.A., J.G. Watson, C.F. Rogers, and J.C. Chow (1998). Efficiencies of dust suppressants to reduce PM₁₀ emissions from unpaved roads. In *Proceedings of the 11th World Clean Air Congress*, Durban, South Africa, 13-18 Sept. 1998.
- Gertler, A.W., J.C. Sagebiel, W.A. Dippel, J.A. Gillies, F. Gofa, C.M. O'Connor, and W.R. Pierson (1998). Assessing real-world vehicle emissions using roadway tunnels. In *Proceedings of the 11th World Clean Air Congress*, Durban, South Africa, 13-18 Sept. 1998.
- Gillies, J.A. and W.G. Nickling (1999). Shear stress behaviour on complex rough surfaces. In *Proceedings of the International Wind Erosion Symposium and Workshop*, Manhattan, KS, 3-5 June 1997.

- Gertler, A.W., M. Abu-Allaban, W. Coulombe, J.A. Gillies, W.R. Pierson, C.F. Rogers, J.C. Sagebiel, L. Tarnay, and T.A. Cahill (2000). On-road measurements of mobile source particulate emissions. Paper #342 *A&WMA 93rd Annual Meeting & Exhibition*, Salt Lake City, UT, 18-22 June 2000.
- Abu-Allaban, M., J.A. Gillies, A.W. Gertler, R. Clayton, and D. Proffitt (2001). Characterizing particulate matter emitted from on-road motor vehicles. In *Proceedings A&WMA 94th Annual Meeting & Exhibition*, Orlando, FL, 24-28 June 2001, paper # 679.
- Gertler, A.W. and J.A. Gillies (2001). A fast, cost effective method for apportioning the sources of ambient particulate matter. In *Proceedings A&WMA 94th Annual Meeting & Exhibition*, Orlando, FL, 24-28 June 2001, paper #851.
- Gillies, J.A., V. Etyemezian, H. Kuhns, D. Nikolic, and D.A. Gillette (2003). Effect of vehicle characteristics on unpaved road dust emissions. In *Proceedings of the 12th Symposium Transport and Air Pollution*, R. Joumard (ed.), INRETS-LTE, Avignon, France, 16-18 June 2003, pp. 51-58.
- Gillies, J.A., V. Etyemezian, H. Kuhns, D. Nikolic, and D.A. Gillette (2003). Unpaved road dust emissions: effect of vehicle characteristics. In *Proceedings of the A&WMA 96th Annual Meeting and Exhibition*, San Diego, CA, 22-26 June 2003, paper # 69658.
- Kuhns, H., V. Etyemezian, J.A. Gillies, D. Nikolic, S. Ahonen, and C. Durham (2003). Spatial variability of unpaved road dust emissions near El Paso, TX. In *Proceedings of the A&WMA 96th Annual Meeting and Exhibition*, San Diego, CA, 22-26 June 2003, paper # 65014.
- Etyemezian, V., J.A. Gillies, H. Kuhns, D. Nikolic, D. Gillette, G. Sheshardi, and J. Veranth (2003). Estimating near-field removal of fugitive dust: the regionally-transportable fraction of PM₁₀ emissions from unpaved roads. In *Proceedings of the A&WMA 96th Annual Meeting and Exhibition*, San Diego, CA, 22-26 June 2003, paper # 69531.
- Abu-Allaban, M., J. Gillies, A. Gertler, R. Clayton, and D. Proffitt (2005). Motor vehicle contributions to ambient PM₁₀ and PM_{2.5} at selected urban areas in the U.S. In *Proceedings 14th International Symposium Transport and Air Pollution*, P. Sturm and S. Minarik (eds.), Technische Universität Graz, Graz, Austria, 1-3 June 2005, Vol. 1, pp. 391-400.
- Gertler, A., J. Gillies, G. Parthasarathay, R. Clayton, and D. Proffitt (2005). The impact of road shoulder treatments on road dust resuspension. In *Proceedings 14th International Symposium Transport and Air Pollution*, P. Sturm and S. Minarik (eds.), Technische Universität Graz, Graz, Austria, 1-3 June 2005, Vol. 2, pp. 22-29.
- Zhu, D., H. Kuhns, J. Gillies, V. Etyemezian, and A. Gertler (2008). Spatial and seasonal emissions of road dust in the Lake Tahoe Basin. *Proceedings of the Air and Waste Management Association Annual Conference*, Portland, OR, 24-27 June, 2008.

Non-Refereed Conference Proceedings:

Lancaster, N., W.G. Nickling, and J.A. Gillies (2002). Exceptionally coarse-grained wind ripples in the Wright Valley, Antarctica. In *Proceedings of ICAR5/GCTE-SEN Joint Conference*, International Center for Arid and Semiarid Land Studies, Texas Tech. University, Lubbock, TX, Publ. 02-2, p.447.

Gillies, J.A., W.G. Nickling, V. Etyemezian, J. King, and M. Sweeney (2006). Factors controlling the spatial and temporal variability of dust emissions. *Chinese Journal of Geochemistry* 25 (Suppl.), *The 7th International Symposium on Environmental Geochemistry*, Beijing, P.R.C., 24-27 September 2006.

Gillies J.A., W.G. Nickling, and N. Lancaster (2008). Vegetative roughness controls on wind erosion: a shear stress partitioning approach. In *Proceedings 9th International Conference on Dryland Development, Sustainable Development in Drylands Meeting the Challenge of Climate Change*, Alexandria, Egypt, 7-10 November 2008.

Dissertation

Gillies, J.A. (1995). *A Wind Tunnel Study of the Relationships Between Complex Surface Roughness Form, Flow Geometry and Shearing Stress*. Unpublished Ph. D. thesis, University of Guelph, Guelph, ON.

Presentations

Gillies, J.A. (1986). Aeolian thresholds and sediment transport rates for three tillage techniques. Poster presented, *17th Annual Binghamton Geomorphology Symposium*, Guelph, ON, Sept. 1986.

Gillies, J.A. and W.G. Nickling (1989). Severe anthropogenic disturbance of a hardpan surface in Mali. Paper presented, *Annual Meeting, Canadian Association of Geographers (Ontario Section)*, Guelph, ON, Oct. 1989.

Gillies, J.A. and W.G. Nickling (1990). Aerosol monitoring in the Inland Delta Region of Mali. Paper presented, *Annual Meeting, Ontario Association of Geomorphologists*, Toronto, ON, April 1990.

Gillies, J.A. and W.G. Nickling (1991). Regional dust fluxes in Mali, the southwest United States and the Slims River Delta, Yukon. Paper presented, *Annual Meeting, Canadian Association of Geographers (Ontario Section)*, Ottawa, ON, 25-26 Oct. 1991.

Gillies, J.A. and W.G. Nickling (1992). Potential dust emission rates from type surfaces Inland Delta Region, Mali, West Africa. Paper presented, *Annual Meeting, American Association of Geographers*, San Diego, CA, 18-22 April 1992.

Nickling, W.G. and J.A. Gillies (1992). Regional aerosol fluxes, Inland Delta Region, Mali, West Africa. Paper presented, *Annual Meeting, American Association of Geographers*, San Diego, CA, 18-22 April 1992.

Gillies, J.A. and W.G. Nickling (1993). Sedimentological characteristics of an intense dust haze event, Mali, West Africa. Paper presented, *Annual Meeting, Association of Canadian Geographers*, Ottawa, ON, 31 May - 2 June 1993.

- Gillies, J.A. (1994). Surface shearing stress and complex roughness form. Invited paper presented, *Workshop on the Response of Aeolian Processes to Global Change*, Zzyzx, CA, 22-29 March 1994.
- Gillies, J.A. (1994). u_* , friction velocity or fiction velocity? Paper presented, *Annual Meeting, Ontario Association of Geomorphologists*, Guelph, ON, April 1994.
- Gillies, J.A. and N.J. Lancaster (1995). Fugitive dust emission research. Presentation, *Desert Research Institute Science Reviews*, Reno, NV, Feb. 1995.
- Gillies, J.A. (1995). Fugitive dust emissions and health. Paper presented, *99th Meeting of the United States Animal Health Association*, Reno, NV, 1 Nov. 1995.
- Watson, J.G., J.C. Chow, J.A. Gillies, C.F. Rogers, W.G. Nickling, K. Magliano, and R. Hackney (1995). Methods to determine the effectiveness of fugitive dust control measures. Paper presented, *Particulate Matter: Health and Regulatory Issues, Air and Waste Management Association Conference*, Pittsburgh, PA, 4-6 April 1995.
- Chow, J.C., J.G. Watson, J.A. Gillies, and F. Divita, Jr. (1996). Comparison of PM₁₀ receptor model results from Mexicali, Baja, California. Paper presented, *Particulate Matter: Health and Regulatory Issues, Air and Waste Management Association Conference*, Pittsburgh, PA, 4-6 April 1995.
- Chow, J.C., J.G. Watson, J.A. Gillies, F. Divita, Jr., and R. Egami (1996). 1995 Integrated Monitoring Study: spatial variability of PM and precursors-preliminary results. Paper presented, *Air & Waste Management Association Conference and Course: Measurement of Toxic and Related Air Pollutants*, RTP, NC, 7-9 May 1996.
- Chow, J.C., J.G. Watson, J.A. Gillies, F. Divita, Jr., and R. Egami (1996). 1995 Integrated Monitoring Study: temporal variability of PM and precursors-preliminary results. Paper presented, *Air & Waste Management Association Conference and Course: Measurement of Toxic and Related Air Pollutants*, RTP, NC, 7-9 May 1996.
- Moosmüller, H., J.A. Gillies, C.F. Rogers, D.W. DuBois, J.C. Chow, J.G. Watson, and R. Langston (1997). Particulate emission rates for unpaved shoulders along paved roads. Paper presented, *90th Annual Meeting, Air & Waste Management Association*, Toronto, ON, 9-13 June 1997.
- Gillies, J.A., J.G. Watson, C.F. Rogers, J.C. Chow, and R. Langston (1997). PM₁₀ emissions and dust suppressant efficiencies on an unpaved road, Merced County, CA. Paper presented, *90th Annual Meeting, Air & Waste Management Association*, Toronto, ON, 9-13 June 1997.
- Gillies, J.A. and W.G. Nickling (1997). Shear stress behavior on complex rough surfaces. Paper presented, *International Wind Erosion Symposium and Workshop*, Manhattan, KA, 3-5 June 1997.
- Gillies, J.A., A.W. Gertler, J.C. Sagebiel, and W.A. Dippel (1998). On-road PM_{2.5} and PM₁₀ emission factors in the Sepulveda Tunnel, Los Angeles, California. Poster presented, *PM_{2.5}: A Fine Particle Standard*, sponsored by the Air and Waste Management Association and U.S. EPA, Long Beach, CA, 28-30 Jan. 1998.

- Gillies, J.A., A.W. Gertler, J.C. Sagebiel, and W.A. Dippel (1998). On-road PM_{2.5} and PM₁₀ emission factors in the Sepulveda Tunnel, Los Angeles, California. Paper presented, *Eighth CRC On-Road Vehicle Emissions Workshop*, San Diego, CA, 20-22 April 1998.
- Mamane, Y., J.A. Gillies, C.M. O'Connor, A.W. Gertler, and T. Conner (1998). Use of elemental composition and scanning electron microscopy to discriminate among particles from several different fugitive dust sources in the western United States. Poster presented, *EPA/A&WMA Symposium: Measurement of Toxic and Related Air Pollutants*, Cary, NC, 1-3 Sept. 1998.
- Gillies, J.A., C.M. O'Connor, Y. Mamane, and A.W. Gertler (1998). Chemical profiles for characterizing dust sources. Paper presented, *4th International Conference on Aeolian Research*, Oxford, U.K., 6-9 July 1998.
- Gillies, J.A., J.G. Watson, C.F. Rogers, and J.C. Chow (1998). Efficiencies of dust suppressants to reduce PM₁₀ emissions from unpaved roads. Paper presented, *11th World Clean Air Congress and Exposition*, Durban, South Africa, 13-18 Sept. 1998.
- Gertler, A.W., J.C. Sagebiel, W.A. Dippel, J.A. Gillies, F. Gofa, C.M. O'Connor, and W.R. Pierson (1998). Assessing real-world vehicle emissions using roadway tunnels. Paper presented, *11th World Clean Air Congress*, Durban, South Africa, 13-18 Sept. 1998.
- Mamane, Y., J.A. Gillies, M. O'Connor, and A. Gertler (1998). Distinguishing among fugitive dust sources in Northern Nevada. Paper presented, *12th Annual Meeting of the Israeli Association for Aerosol Research*, Beer-Sheva, Israel, 20 Dec. 1998.
- Gertler, A.W., J.A. Gillies, W.R. Pierson (1999). An assessment of the mobile source contribution to PM₁₀ and PM_{2.5} in the United States. Paper presented, *7th International Conference of the Israel Society for Ecology and Environment Quality Sciences*, Jerusalem, Israel, 13-18 June 1999.
- Gillies, J.A. and L.B. Berkofsky (1999). Dust emissions from drylands: implications for desertification. Paper presented, *International Arid Lands Consortium Land Management Workshop: a Tenth Anniversary Celebration of USFS, CSREES, Israeli, and IALC Partnerships*, Reno, NV, 4-5 Nov. 1999.
- Pierson, W.R., A.W. Gertler, J.C. Sagebiel, F. Rogers, J.A. Gillies, and T.A. Cahill (1999). Ambient sampling of diesel particulate matter. Paper presented, *HEI Diesel Workshop*, Stone Mountain, GA, 7-9 March 1999.
- Gertler, A.W., M. Abu-Allaban, W. Coulombe, J.A. Gillies, W.R. Pierson, C.F. Rogers, J.C. Sagebiel, L. Tarnay, and T.A. Cahill (2000). Preliminary results of a tunnel study to characterize mobile source particulate emissions. Poster presented, *A&WMA PM2000: Particulate Matter and Health – The Scientific Basis for Regulatory Decision-Making*, Charleston, SC, 25-28 Jan. 2000.
- Gillies, J.A. and A.W. Gertler (2000). Comparison and evaluation of chemically speciated mobile source PM_{2.5} profiles. Paper presented, *A&WMA PM2000: Particulate Matter and Health – The Scientific Basis for Regulatory Decision-Making*, Charleston, SC, 25-28 Jan. 2000.

- Gillies, J.A., A.W. Gertler, D. Lowenthal, and M. Abu-Allaban (2000). Enhanced PM_{2.5} source apportionment using chemical mass balance modeling and scanning electron microscopy. Poster presented, *A&WMA PM2000: Particulate Matter and Health – The Scientific Basis for Regulatory Decision-Making*, Charleston, SC, 25-28 Jan. 2000.
- Gertler, A.W., M. Abu-Allaban, T.A. Cahill, B. Coulombe, J.A. Gillies, W.R. Pierson, C.F. Rogers, J.C. Sagebiel, and L. Tarnay (2000). Measurements of Mobile Source Particulate Emissions in a Highway Tunnel. Paper presented, *10th CRC On-Road Vehicle Emissions Workshop*, San Diego, CA, 27-29 March 2000.
- Gillies, J.A. and A.W. Gertler (2000). Comparison and evaluation of chemically speciated mobile source PM_{2.5} profiles. Paper presented, *10th CRC On-Road Vehicle Emissions Workshop*, San Diego, CA, 27-29 March 2000.
- Moosmüller, H., W.P. Arnott, C.F. Rogers, J.L. Bowen, J.A. Gillies, W.R. Pierson, J.F. Collins, T.D. Durbin, and J.M. Norbeck (2000). Evaluations of five instruments for the real-time measurement of diesel particulate mass emissions. Paper presented, *10th CRC On-Road Vehicle Emissions Workshop*, San Diego, CA, 27-29 March 2000.
- Gertler, A.W., M. Abu-Allaban, W. Coulombe, J.A. Gillies, W.R. Pierson, C.F. Rogers, J.C. Sagebiel, L. Tarnay, and T.A. Cahill (2000). Changes in particulate emissions over time in a highway tunnel. Paper presented, *HEI 2000 Annual Meeting*, Atlanta, GA, 9-11 April 2000.
- Gertler, A.W., J.C. Sagebiel, and J.A. Gillies (2000). Trends in emissions from in-use light- and heavy-duty vehicles. Paper presented, *Recent Advances in Science and Management of Air Toxics*, Banff, Alberta, Canada, 10-12 April 2000.
- Gillies, J.A., A.W. Gertler, J.C. Sagebiel (2000). Real-world PM emission rates from in-use light- and heavy-duty vehicles. Paper presented, *Recent Advances in Science and Management of Air Toxics*, Banff, Alberta, Canada, 10-13 April 2000.
- Gillies, J.A. and A.W. Gertler (2000). Comparison and evaluation of chemically speciated mobile source PM_{2.5} profiles. Paper presented, *9th International Scientific Symposium, Transport and Air Pollution*, Avignon, France, 5-8 June 2000.
- Gillies, J.A., N. Lancaster, and W.G. Nickling (2000). Dust flux characteristics observed at Owens Lake, CA. Paper presented, *Understanding Future Dryland Changes from Past Dynamics. Linkages between Fluvial, Lacustrine, and Aeolian Systems Zzyzx*, CA, 23 – 27 Oct. 2000.
- Nickling, W.G., D.M. Crawley, C. Luttmer, L.J. Brown, J.A. Gillies, and N. Lancaster (2000). Use of Irwin sensors for the estimation of PM₁₀ emissions from salt grass communities Owens Lake, CA. Paper presented, *Owens Lake Technical Conference*, White Mt. Research Station, Bishop, CA, 24-25 Oct. 2000.
- Lancaster, N., J.A. Gillies, and W.G. Nickling (2000). Field evaluation of techniques for assessing the effectiveness of saltgrass in reducing dust emissions at Owens Lake, CA. Paper presented, *Owens Lake Technical Conference*, White Mt. Research Station, Bishop, CA, 24-25 Oct. 2000.

- Moosmüller, H., W. P. Arnott, C. F. Rogers, J. L. Bowen, J.A. Gillies, W. R. Pierson, J. F. Collins, T. D. Durbin, and J. M. Norbeck (2000). Time resolved characterization of diesel particulate emissions. Paper presented, *University of California Riverside, CE-CERT Seminar*, Riverside, CA, 2 Nov. 2000.
- Moosmüller, H., W. P. Arnott, C. F. Rogers, J. L. Bowen, J.A. Gillies, W. R. Pierson, J. F. Collins, T. D. Durbin, and J. M. Norbeck (2000). Time resolved characterization of diesel particulate emissions: instruments for particle mass and elemental and organic carbon quantification. Paper presented, *7th International Conference on Carbonaceous Particles in the Atmosphere*, San Juan, Puerto Rico, 26-29 Nov. 2000.
- Gillies, J.A. (2000). Fugitive dust: sources, source identification, measurement methods, and controls. Paper presented, *Western Regional Pollution Prevention Network Conference*, San Diego, CA, 25-27 Oct. 2000.
- Gillies, J.A. (2000). Characterizing dust emissions from Department of Defense installations. Paper presented, *Partners in Environmental Technology, Technical Symposium and Workshop*, Crystal City, Arlington, VA, 28-30 Nov. 2000.
- Gertler, A.W. and J.A. Gillies (2001). Differences in particulate matter between the eastern and western United States. Paper presented, *Transportation Research Board Annual Meeting*, Washington, D.C., 7-11 Jan. 2001.
- Gillies, J.A., W.G. Nickling, and N. Lancaster (2001). Aeolian sediment flux characteristics observed at Owens Lake, CA. Paper presented, *97th Annual Meeting of the Association of American Geographers*, New York, NY, 26 Feb. - 3 March 2001.
- Nickling, W.G., J.A. Gillies, and N. Lancaster (2001). Surface controls on dust emissions, Owens (dry) Lake, California. Paper presented, *97th Annual Meeting of the Association of American Geographers*, New York, NY, 26 Feb.-3 March 2001.
- Abu-Allaban, M., J.A. Gillies, A.W. Gertler, R. Clayton, and D. Proffitt (2001). Characterizing particulate matter emitted from on-road motor vehicles. Paper presented, *11th CRC On-Road Vehicle Emissions Workshop*, San Diego, CA, 26-28 March 2001.
- Abu-Allaban, M., J.A. Gillies, A.W. Gertler, R. Clayton, and D. Proffitt (2001). Characterizing particulate matter emitted from on-road motor vehicles. Paper presented, *94th Annual Meeting, Air & Waste Management Association*, Orlando, FL, 24-28 June 2001.
- Gertler, A.W. and J.A. Gillies (2001). A fast, cost effective method for apportioning the sources of ambient particulate matter. Paper presented, *94th Annual Meeting, Air & Waste Management Association*, Orlando, FL, 24-28 June 2001.
- Gillies, J.A., W.P. Arnott, V. Eteymezian, D.A. Gillette, H. Kuhns, E. McDonald, H. Moosmüller, W.G. Nickling, G. Schwemmer, and T. Wilkerson (2001). Characterizing and quantifying local and regional particulate matter emissions from Department of Defense installations. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 27-29 Nov. 2001.

- Kuhns, H., V. Etyemezian, J.A. Gillies, M. Green, and M. Pitchford (2002). Spatially-resolved, direct measurement of road dust emission from vehicles. Paper presented, *Real World Clean Air Symposium*, San Diego, CA, 21–23 May 2002.
- Etyemezian, V., H. Kuhns, J.A. Gillies, M. Green, and M. Pitchford (2002). Temporally and spatially-resolved road dust emissions from vehicles. Paper presented, *7th International Highway and Urban Pollution Symposium*, Barcelona, Spain, 20–23 May 2002.
- Lancaster, N., W.G. Nickling, and J.A. Gillies (2002). Exceptionally coarse-grained wind ripples in the Wright Valley, Antarctica. Poster presented, *ICAR5/GCTE-SEN Joint Conference*, International Center for Arid and Semiarid Land Studies, Texas Tech. University, Lubbock, TX, 22-25 July 2002.
- Varma, R., W.P. Arnott, H. Moosmüller, J.A. Gillies, H. Kuhns, and V. Etyemezian (2002). A new integrating nephelometer for aerosol light scattering studies. Paper presented, *21st Annual Conference of the American Association for Aerosol Research*, Charlotte, NC, 7-11 Oct. 2002.
- Gillies, J.A., W.P. Arnott, V. Etyemezian, D.A. Gillette, H. Kuhns, E. McDonald, H. Moosmüller, W.G. Nickling, G. Schwemmer, and T. Wilkerson (2002). Characterizing and quantifying local and regional particulate matter emissions from Department of Defense installations. Paper and Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 2-5 Dec. 2002.
- Etyemezian, V., D. Gillette, J.A. Gillies, H. Kuhns, D. Nikolic, G. Seshadri, J. Veranth, and J. Watson (2003). PM₁₀ emissions from unpaved roads: correction for near-field deposition. Poster presented, *American Association for Aerosol Research Particulate Matter: Atmospheric Sciences, Exposure and the Fourth Colloquium on PM and Human Health (AAAR PM)*, Pittsburgh, PA, 31 March- 4 April 2003.
- Etyemezian, V., J.A. Gillies, H. Kuhns, D. Nikolic, and John Vernath (2003). Reconciling fugitive dust emissions with ambient measurement: along the unpaved road. Paper presented, *12th Annual Symposium on Emission Inventories, USEPA, Office of Air Quality Planning and Standards, Emission Factor and Inventory Group, and the Emission Inventory Improvement Program (EIIP). "Emission Inventories - Applying New Technologies"*, San Diego, CA, 28 April – 1 May 2003.
- Mansell, G., P. Fields, M. Wolfe, J. Gillies, B. Barnard, M. Omary, and M. Uhl (2003). Determining Fugitive Dust from Wind Erosion. Paper Presented, *12th Annual Symposium on Emission Inventories, USEPA, Office of Air Quality Planning and Standards, Emission Factor and Inventory Group, and the Emission Inventory Improvement Program (EIIP). "Emission Inventories -Applying New Technologies"*, San Diego, CA, 28 April – 1 May 2003.
- Etyemezian, V., D. Nikolic, J.A. Gillies, H. Kuhns, G. Seshadri, J. Veranth (2003). Estimating near-field removal of fugitive dust: the regionally-transportable fraction of PM₁₀ emissions from unpaved Roads. Paper presented, *96th Annual Meeting, Air & Waste Management Association*, San Diego, CA, 22-26 June 2003.

- Gillies, J.A., V. Etyemezian, H. Kuhns, D. Nikolic, and D.A. Gillette (2003). Effect of vehicle characteristics on unpaved road dust emissions. Paper presented, *96th Annual Meeting, Air & Waste Management Association*, San Diego, CA, 22-26 June 2003.
- Gillies, J.A., V. Etyemezian, H. Kuhns, D. Nikolic, and D.A. Gillette (2003). Effect of vehicle characteristics on unpaved road dust emissions. Paper presented at *12th Symposium "Transport and Air Pollution"*, Avignon, France, 16-18 June 2003.
- Gillies, J.A. and L.B. Berkofsky (2003). Aeolian suspension above the saltation layer: the concentration profile. Poster presented, *2nd Workshop on Mineral Dust*, Paris, France, 10–12 Sept. 2003.
- Nickling, W.G., J.A. King, and J.A. Gillies (2003). The role of shear stress partitioning on dust emissions. Paper presented, *2nd Workshop on Mineral Dust*, Paris, France, 10–12 Sept. 2003.
- Gillies, J.A., H. Kuhns, V. Etyemezian, D. Nikolic, H. Moosmüller, and W.P. Arnott (2003). Tower based real time monitoring system for quantifying fugitive emissions. Paper presented, *NARSTO Emission Inventory Workshop: Innovative Methods for Emission Inventory Development and Evaluation*, Austin, TX, 14-17 Oct. 2003.
- Etyemezian, V. S. Ahonen, J.A. Gillies, H. Kuhns, H. Moosmüller, D. Nikolic, and M. Pitchford (2003). PI-SWERL: a new technique for measuring wind blown dust emission potential. Paper presented, *NARSTO Emission Inventory Workshop: Innovative Methods for Emission Inventory Development and Evaluation*, Austin, TX, 14-17 Oct. 2003.
- 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. Paper presented, *NARSTO Emission Inventory Workshop: Innovative Methods for Emission Inventory Development and Evaluation*, Austin, TX, 14-17 Oct. 2003.
- Kuhns, H., V. Etyemezian, J.A. Gillies, D. Nikolic, S. Ahonen (2003). Spatially-resolved, direct measurement of road dust emissions from vehicles. Paper presented, *NARSTO Emission Inventory Workshop: Innovative Methods for Emission Inventory Development and Evaluation*, Austin, TX, 14-17 Oct. 2003.
- Gillies, J.A., W.P. Arnott, V. Etyemezian, D.A. Gillette, H. Kuhns, H. Moosmüller, W.G. Nickling (2003). Characterizing and quantifying local and regional particulate matter emissions from Department of Defense installations. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 2-5 Dec. 2003.
- Gillies, J.A., N. Lancaster, and K. Cupp, W.G. Nickling, J.A. King, and J.M. Bryant (2004). Shear stress partitioning effects on aeolian sediment transport. Poster presented, *2004 Joint Assembly American Geophysical-Canadian Geophysical Union*, Montreal, PQ, 17-21 May 2004.

- Lancaster, N., W.G. Nickling, J.A. Gillies, and K. Cupp (2004). Temporal variations in the flux of wind blown sand: a comparison of the intermittency function in different environments. Poster presented, *2004 Joint Assembly American Geophysical-Canadian Geophysical Union*, Montreal, PQ, 17-21 May 2004.
- Gertler, A.W., J.A. Gillies, M. Abu-Allaban (2004). Using roadside measurements to determine PM₁₀ and PM_{2.5} emission rates from in-use vehicles. Paper presented, *Israel Society for Ecology and Environmental Quality Sciences*, 9-10 June 2004.
- 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.
- Gillies, J.A. (2004). Characterizing and quantifying fugitive dust emissions from Department of Defense sources including unique military activities. Invited Paper Presented, *2nd Surficial Processes on Military Lands Workshop*, Zyzzx, CA, 18-22, September 2004.
- Nikolic, D., H. D. Kuhns, H. Moosmüller, J. Xu, J. A. Gillies, S. Ahonen, V. Etyemezian, and M. Pitchford (2004). PI-SWERL: a novel method for quantifying windblown dust emissions. *23rd Annual Conference of the American Association for Aerosol Research*, Atlanta, GA, October 4-8, 2004.
- Nickling, W.G. and J.A. Gillies (2004). Factors controlling the spatial and temporal variability of dust emissions: the need for suitable surrogate measures at large spatial scales. Invited Paper presented, *USGS Workshop on Mineral Dust Emissions*, Boulder, CO, 22-23 October 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. *Regional and Global Perspectives on Haze: Causes, Consequences, and Controversies (Visibility Specialty Conference)*, Asheville, NC, October 25-29, 2004.
- Gillies, J.A. (2004). Characterizing and quantifying fugitive dust emissions from Department of Defense sources including unique military activities. Invited paper presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 29 Nov. - 2 Dec. 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*, Washington, D.C., 29 Nov. - 2 Dec. 2004.
- Gillies, J.A., W.G. Nickling, and J. King (2004). Shear stress partitioning in airflow over rough surfaces: roughness form effects and influence on the distribution of shear stress. Poster presented *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 13-17 December 2004.

- King, J., W.G. Nickling, and J.A. Gillies (2004). Representation of vegetation and other non-erodible elements in aeolian sediment transport models. Poster presented *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 13-17 December 2004.
- Bryant, J., W.G. Nickling, and J.A. Gillies (2004). Wind flow characteristics over rough surfaces. Poster presented *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 13-17 December 2004.
- Lancaster, N., W.G. Nickling, J.A. Gillies, and K. Cupp (2004). Sand transport by wind on complex rough surfaces: field studies in the McMurdo Dry Valleys, Antarctica. Paper presented *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 13-17 December 2004.
- Abu-Allaban, M., J. Gillies, A. Gertler, R. Clayton, and D. Proffitt (2005). Motor vehicle contributions to ambient PM₁₀ and PM_{2.5} at selected urban areas in the U.S. Paper presented *14th International Symposium Transport and Air Pollution*, Graz, Austria, 1-3 June 2005.
- Gertler, A., J. Gillies, G. Parthasarathay, R. Clayton, and D. Proffitt (2005). The impact of road shoulder treatments on road dust resuspension. Poster presented *14th International Symposium Transport and Air Pollution*, Graz, Austria, 1-3 June 2005.
- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, J. Engelbrecht, D. Gillette, J. Allwine, R. Hashmonay, and R. Varma (2005). Particulate matter emissions for dust from unique military activities: artillery backblast. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 28 Nov. - 1 Dec. 2005.
- Sweeney, M., V. Etyemezian, J. Gillies, T. Macpherson, E. McDonald, G. Nicolich, W.G. Nickling (2005). Calibration of a new type of wind tunnel (PI-SWERL) with dust emission data from a conventional straight-line wind tunnel. Poster presented *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 12-16 December 2005.
- Sweeney, M., V. Etyemezian, T. Macpherson, W.G. Nickling, J. Gillies, and G. Nikolich (2006). Calibration of PI-SWERL measurements with dust emission data from a straight-line field wind tunnel. Poster presented *Sixth International Conference on Aeolian Research*, Guelph, ON, Canada, 24-28 July 2006.
- King, J., W.G. Nickling, and J.A. Gillies (2006). Aeolian shear stress ratio measurements within mesquite-dominated landscapes of the Chihuahuan Desert, New Mexico, U.S.A. Poster presented *Sixth International Conference on Aeolian Research*, Guelph, ON, Canada, 24-28 July 2006.
- Gillies, J.A., W.G. Nickling, J. King, V. Etyemezian, and M. Sweeney (2006). Factors controlling the spatial and temporal variability of dust emissions. Invited paper, *7th International Symposium on Environmental Geochemistry*, Beijing, P.R. China, 24-27 September 2006.

- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, J. Engelbrecht, D. Gillette, J. Allwine, R. Hashmonay, and R. Varma (2006). Particulate matter emissions for dust from unique military activities: artillery backblast & tracked vehicles. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 28 Nov. – Nov. 30 2006.
- Etyemezian, V., M. Sweeney, W. Nickling, J. Gillies, and E. McDonald (2006). Seasonal dust emissions measured from shorelines at the Salton Sea, Southern California. Poster presented, *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 11-14 December, 2006.
- Gillies, J.A., H. Kuhns, D. Zhu, and V. Etyemezian (2007). Measurement and modeling of fugitive dust emissions from paved road travel in the Lake Tahoe Basin. Invited paper, *Environmental Nuisances: Noise, Light, Odour, and Fugitive Dust*, Richmond, B.C., 7-9 May, 2007.
- Engelbrecht, J., H. Moosmüller, W. Arnott, J.A. Gillies, and M. Skiba (2007). Mineralogy and optical properties of resuspended dusts. Paper presented *International Union of Geodesy and Geophysics Conference XXIV*, Perugia, Italy 2-13 July, 2007.
- Gillies, J.A. and W.G. Nickling (2007). Potential dust emissions from crusted soils. Paper presented *International Union of Geodesy and Geophysics Conference XXIV*, Perugia, Italy 2-13 July, 2007.
- Gertler, A., T. Cahill, J. Reuter, S. Cliff, J. Gillies, J. Koracin, H. Kuhns (2007). Air quality in the Lake Tahoe Basin. Poster presented *10th Anniversary Lake Tahoe Presidential Summit*, Incline Village, NV, 17 August, 2007.
- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, J. Engelbrecht, J. King, J.D. McAlpine, D. Gillette, J. Allwine, and R. Hashmonay (2007). Particulate matter emissions for dust from unique military activities: rotary-winged aircraft. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 4-6 December, 2007.
- Gertler, A., T. Cahill, J. Gillies, and H. Kuhns (2007). Sources of atmospheric pollutants impacting air and water quality in the Lake Tahoe basin. Paper presented, *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 10-14 December, 2007.
- Gillies, J.A., J. King, N. Lancaster, and W.G. Nickling (2007). Modeling aeolian sediment transport thresholds on Mars: a shear stress partitioning approach. Paper presented, *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 10-14 December, 2007.
- King, J., V. Etyemezian, J.A. Gillies, and G. Nikolich (2007). Influence of temporal scales and soil properties on dust emissions: a measurement and modeling effort. Paper presented *American Geophysical Union Annual Fall Meeting*, San Francisco, CA, 10-14 December, 2007.

- Zhu, D., H. Kuhns, J. Gillies, V. Etyemezian, and A.W. Gertler, 2008. Long-term measurements of road dust in the Lake Tahoe region. Presented at *Environmental Nuisances: Noise, Light, Odour, & Fugitive Dust*, Toronto, ON, 11-13 February, 2008.
- Gillies, J.A., W.G. Nickling, J. King, and N. Lancaster (2008). Modeling aeolian sediment transport thresholds on Mars: a shear stress partitioning approach. Invited keynote paper, *Planetary Dunes Workshop: A Record of Climate Change*, Lunar and Planetary Institute, Alamogordo, NM, 29 April–2 May, 2008.
- Watson, J.G., J.C. Chow, J.A. Gillies, V. Etyemezian (2008). Advances in continuous monitors for Asian dust suspension properties, emission rates, and particle sizes. *Fifth International Workshop on Sand and Dust Storms*, Urumqi, Xinjiang, China, 23 May, 2008.
- Zhu, D., H. Kuhns, J. Gillies, V. Etyemezian, and A. Gertler (2008). Spatial and seasonal emissions of road dust in the Lake Tahoe Basin. Paper presented, *Air and Waste Management Association Annual Conference*, Portland, OR, 24-27 June, 2008.
- McAlpine, J.D., D. Koracin, D. Boyle, J.A. Gillies, and E. McDonald (2008). Rotorcraft wake induced dust entrainment and dispersion simulation: stage 1, wake simulation. Paper presented, *12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling*, Fairfax, VA, 8-10 July, 2008.
- Engelbrecht, J.P., E.V. McDonald, J.A. Gillies and A.W. Gertler (2008). Enhanced Particulate Matter Surveillance Program: a multidisciplinary approach to understanding mineral dusts from the Middle East. Paper presented, *2008 Goldschmidt Conference*, Vancouver, Canada, 13-18 July, 2008.
- Gillies, J.A., J.P. Engelbrecht, E.V. McDonald, and A. Gertler (2008). Chemistry and individual particle characteristics of aerosols from the Middle East. Paper presented, *11th Annual Force Health Protection Conference*, Albuquerque, NM, 12-15 August, 2008.
- Engelbrecht, J.P., E.V. McDonald, Gillies, J.A., and A. Gertler (2008). Chemistry and individual particle characteristics of aerosols from the Middle East. Paper presented, *33rd International Geological Congress*, Oslo Norway, 6-14 August, 2008.
- Gertler, A., T. Brown, T. Cahill, S. Cliff, J. Engelbrecht, J. Gillies, J. Koracin, H. Kuhns, J. Reuter, and T. VanCuren (2008). Air quality in the Lake Tahoe air basin. Paper presented, *The Lake Tahoe Environmental Summit*, August 16, 2008.
- Gertler, A., T. Cahill, J. Gillies, and H. Kuhns (2008). Sources of atmospheric pollutants impacting air and water quality in the Lake Tahoe Basin. Paper presented, *Fall Meeting of the American Geophysical Union*, San Francisco, CA, 15-19 December, 2008.
- Gillies, J.A., W.G. Nickling, and N. Lancaster (2008). Vegetative roughness controls on wind erosion: a shear stress partitioning approach. Paper presented, *Ninth International Conference on Dryland Development: Sustainable Development in the Drylands - Meeting the Challenge of Global Climate Change*, Alexandria, Egypt, 7-10 November, 2008.

Gillies, J.A., V. Etyemezian, H. Kuhns, J. Engelbrecht, J. King, H. Moosmüller, G. Nikolich, D. Zhu, S. Uppapalli, W. Shaw, and R. Hashmonay (2008). Particulate matter emissions for dust from unique military activities: tracked vehicles. Poster presented, *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 2-4 December, 2008.

Gillies, J.A., W.G. Nickling, and M. Tilson (2009). A preliminary evaluation of the movement of aeolian gravel ripples, Wright Valley, Antarctica. Paper presented, *Seventh International Conference on Geomorphology (ANZIAG), Ancient Landscapes – Modern Perspectives*, Melbourne, Australia, 6-11 July 2009.

Technical Reports

Nickling, W.G. and J.A. Gillies (1986). *Particulate Emissions from Type Surfaces, South-West U.S.A.*, MND Associates, Guelph, ON.

Nickling, W.G. and J.A. Gillies (1988). *Total Suspended Particulate Loadings, Part Lot 42, Observatory Lane, Richmond Hill*, MND Associates, Guelph, ON.

Nickling, W.G. and J.A. Gillies (1988). *Particulate Emissions from Chip Piles at the E. B. Eddy Forest Products Plant, Espanola, Ontario. Loadings*, MND Associates Guelph, ON.

Nickling, W.G., L.B. Brown, J.A. Gillies and M. Finoro (1991). *Sahelian Aerosols Mali, Technical Report #1*. Project 3-P-86-1045, International Development Research Centre, Ottawa, ON.

Nickling, W.G. and J.A. Gillies (1991). *Sahelian Aerosols Mali, Technical Report #2*. Project 3-P-86-1045 International Development Research Centre, Ottawa, ON.

Nickling, W.G. and J.A. Gillies (1991). *Sahelian Aerosols Mali, Final Technical Report*. Project 3-P-86-1045, International Development Research Centre, Ottawa, ON.

Chow, J.C., J.G. Watson, *et al.* (1995). *Imperial Valley/Mexicali Cross Border PM₁₀ Transport Study*. Final Report, DRI Document No. 8623.2F. Prepared for U.S. Environmental Protection Agency, Region IX, 75 Hawthorne St., San Francisco, CA 94105-3901.

Gillies, J.A., J.C. Chow, and W.G. Nickling (1995). *Resuspension of Particles by the Wind: A Literature Review*. Prepared for Technical Support Study 5, San Joaquin Valley Regional Particulate Study, California Air Resources Board, Sacramento, CA 95814.

Chow, J.C., J.G. Watson, M.C. Green, R.T. Egami, D.H. Lowenthal, J.A. Gillies, C.F. Rogers, D. DuBois, C.L. Frazier, J. Derby, D.L. Freeman, S. Kohl, and T. Minor, (1997). *Fugitive Dust and Other Source Contributions to PM₁₀ in Nevada's Las Vegas Valley*, Final Report, DRI Document No. 4039.2F1. Prepared for Clark County Department of Comprehensive Planning, Las Vegas, NV.

- Walsh, P.A and J.A. Gillies (1996). *Improved Mobile Source Emissions Inventories, Part I*. Prepared for Coordinating Research Council, Inc. and National Renewable Energy Laboratory (NREL), Golden, CO, 80401-3393.
- Gillies, J.A. (1996). *Resuspension of Particles by Wind: Measurement and Modeling Initiatives*. Prepared for Technical Support Study 5, California Regional Particulate Air Quality Study, California Air Resources Board, Sacramento, CA 95814.
- Gillies, J.A., J.C. Chow, and W.G. Nickling (1996). *Resuspension of Particles by the Wind: Research Initiatives*. Prepared for Technical Support Study 5, San Joaquin Valley Regional Particulate Study, California Air Resources Board, Sacramento, CA 95814.
- Watson, J.G, J.C. Chow, J.A. Gillies, H. Moosmüller, C.F. Rogers, D. DuBois, and J. Derby (1996). *Effectiveness Demonstration of Fugitive Dust Control Methods for Public Unpaved Roads and Unpaved Shoulders on Paved Roads*. Final Report, DRI Document No. 685-5200.1F1. Prepared for California Regional Particulate Air Quality Study, California Air Resources Board, Sacramento, CA 95814.
- Nickling, W.G., N.J. Lancaster, and J.A. Gillies (1997). *Field Wind Tunnel Studies of Relations Between Vegetation Cover and Dust Emissions at Owens Lake*. Prepared for the Great Basin Unified Air Pollution Control District, Bishop, CA.
- Chow, J.C., J.G. Watson, M.C. Green, R.T. Egami, D.H. Lowenthal, J.A. Gillies, C.F. Rogers, D. DuBois, C.L. Frazier, J. Derby, D.L. Freeman, S. Kohl, and T. Minor, (1997). *Fugitive Dust and Other Source Contributions to PM₁₀ in Nevada's Las Vegas Valley*. Final Report, DRI Document No. 4039.2D1. Prepared for Clark County Department of Comprehensive Planning, Las Vegas, NV.
- Gertler, A.W., J.C. Sagebiel, W.A. Dippel, J.A. Gillies, F. Gofa, and M. O'Connor (1997). *Comparison of 1995 and 1996 Emissions at the Los Angeles Sepulveda Tunnel Including the Impact of California Phase 2 RFG*. Final Report CRC Project E-27. Prepared for the Coordinating Research Council, Inc., Atlanta, GA 30346, and South Coast Air Quality Management District, Diamond Bar, CA 91765.
- Mamane, Y., J.A. Gillies, C.M. O'Connor, and A.W. Gertler (1998). *Distinguishing Among Fugitive Dust Emission Sources Using Scanning Electron Microscopy, X-Ray Fluorescence, and Instrumental Neutron Activation Analysis*. Prepared for Washoe County District Health Department, Reno, NV.
- Gofa, F., A.W. Gertler, and J.A. Gillies (1998). *PM and VOC Source Apportionment in the Truckee Meadows, Nevada, 1998*. Prepared for Washoe County District Health Department, Reno, NV.
- Pierson, W., A.W. Gertler, C. Cahill, J.A. Gillies, and C.F. Rogers (1998). *Mobile Source Issues Related to the New PM_{2.5} Standard*. Prepared for Assessment and Modeling Division, Office of Mobile Sources, U.S. Environmental Protection Agency, Ann Arbor, MI.

- Annegarn, H.A., J.A. Gillies, and M. Keen (1998). *Environmental Impact Assessment of the Proposed Yatela Gold Mining Operation, Mali*. Prepared by Annegarn Environmental Research for Envirolink, 5th Floor –45 Main Street, Johannesburg, S.A.
- Gillies, J.A., D. Lowenthal, A.W. Gertler, and M. Abu-Allaban (1999). *Source Apportionment of PM_{2.5} in Reno and Sparks, Nevada, Summer 1998, by Chemical Mass Balance Modeling and Scanning Electron Microscopy Analysis*. Prepared for Washoe County District Health Department, Reno, NV.
- Nickling, W.G., J.A. Gillies, N. Lancaster, and D. Crawley (1999). *Optimizing Managed Vegetation Planting Configurations at Owens Lake, California*. Prepared for Great Basin Unified Air Pollution Control District, Bishop, CA.
- Gillies, J.A. and L. Berkofsky (1999). *Dust Emissions from Drylands: Implications for Desertification*. Progress Report 1. Prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ.
- Moosmüller, H., W.P. Arnott, C.F. Rogers, J.L. Bowen, J.A. Gillies, W.R. Pierson, J.F. Collins, T.D. Durbin, and J.M. Norbeck (2000). *Simple Particulate Emission Measuring System*. Prepared for the U.S. Department of Energy under grant DE-FC02-98EE50563.
- Gertler, A.W., J.A. Gillies, W.R. Pierson, C. F. Rogers, J.C. Sagebiel, M. Abu-Allaban, W. Coulombe, L. Tarnay, and T. Cahill (2000). *Ambient Sampling of Diesel Particulate Matter*. Prepared for Health Effects Institute, 955 Massachusetts Avenue Cambridge, MA 02139.
- Gillies, J.A. and L. Berkofsky (2000). *Dust Emissions from Drylands: Implications for Desertification*. Progress Report 2. Prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ.
- Gertler, A.W., W. Coulombe, R. Tropp, J.A. Gillies, C.F. Rogers, and W.R. Pierson (2000). *Mobile Source Issues Related to the Proposed PM_{2.5} Standard: Year 2*. Prepared for Assessment and Modeling Division, Office of Mobile Sources, U.S. Environmental Protection Agency, Ann Arbor, MI.
- Nickling, W.G., C. Luttmer, D.M. Crawley, J.A. Gillies, and N. Lancaster (2000). *Comparison of On- and Off-Lake PM₁₀ Dust Emissions at Owens Lake*. Prepared for Great Basin Unified Air Pollution Control District, Bishop, CA.
- Nickling, W.G., D.M. Crawley, C. Luttmer, L.J. Brown, J.A. Gillies, and N. Lancaster (2000). *Use of Irwin Sensors for the Measurement of Shear Stress Partitioning in Vegetated Communities: A Field Evaluation*. Prepared for Great Basin Unified Air Pollution Control District, Bishop, CA.
- Lancaster, N., J.A. Gillies, and W.G. Nickling (2000). *Field Evaluation of the Effectiveness of Saltgrass/Desert Shrub Complexes in Reducing Dust Emissions at Owens Lake, CA*. Prepared for Great Basin Unified Air Pollution Control District, Bishop, CA.

- Gillies, J.A. and L. Berkofsky (2000). *Dust Emissions from Drylands: Implications for Desertification*. Progress Report 3. Prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ.
- Gillies, J.A. (2001). *Review of the Draft Environmental Impact Report/Environmental Impact Statement and Supplement to the Draft EIR/EIS (SCH. No 99021039) Cadiz Groundwater Storage and Dry-Year Supply Program*. Prepared for Western Environmental Law Center, Taos, NM.
- Gillies, J.A. and L. Berkofsky (2001). *Dust Emissions from Drylands: Implications for Desertification*. Progress Report 4. Prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ.
- Nickling, W.G., D.M. Crawley, C. Luttmer, L.J. Brown, J.A. Gillies, and N. Lancaster (2001). *Use of Irwin Sensors for the Measurement of Potential PM₁₀ Emissions in Vegetated Communities: A Field Study*. Prepared for Great Basin Unified Air Pollution Control District, Bishop, CA.
- McDonald, E., J.A. Gillies, R. Keisler, and M. Cablk (2001). *Ft. Irwin Dust Emissions: Meteorology and Modeling*. Prepared for Commander, National Training Center and Ft. Irwin, Ft. Irwin, CA.
- Gillies, J.A. (2001). *Comments on the Cadiz Groundwater Storage and Dry Year Supply Program Final Environmental Impact Report/Environmental Impact Statement*. Prepared for Western Environmental Law Center P.O. Box 1507, Taos, NM 87571.
- Gillies, J.A., P. Arnott, V. Etyemezian, D.A. Gillette, H. Kuhns, E. McDonald, H. Moosmüller, W. G. Nickling, G. Schwemmer, and T. Wilkerson (2001). *Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations: Annual Report 2001*. Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821.
- Gillies, J.A. and L. Berkofsky (2001). *Dust Emissions from Drylands: Implications for Desertification*. Progress Report 5. Prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ.
- Etyemezian, V., H. Kuhns, J.A. Gillies, M. Green, J. Chow, S. Kohl, and J. Watson (2002). *Treasure Valley Road Dust Study Final Report*. Prepared for Idaho Department of Environmental Quality, Boise, ID, 83707.
- Arnott, W.P., D.L. Freeman, J.A. Gillies, M.C. Green, A.W. Huggins, and D.E. Kingsmill (2002). *The Fate and Distribution of Radio Frequency Chaff*. Prepared for Naval Research Laboratory, Washington, D.C.
- Gillies, J.A. and L. Berkofsky (2002). *Dust Emissions from Drylands: Implications for Desertification*. Progress Report 6. Prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ.

- Clayton, R., D. Proffitt, A.W. Gertler, J.A. Gillies, M. Abu-Allaban (2002). *Particulate Matter (PM_{2.5} and PM₁₀) Apportionment for On-Road Mobile Sources*. Prepared for the National Cooperative Highway Research Program, Transportation Research Board, National Research Council, Washington, D.C.
- Gillies, J.A., P. Arnott, V. Etyemezian, D.A. Gillette, H. Kuhns, E. McDonald, H. Moosmüller, W. G. Nickling, G. Schwemmer, and T. Wilkerson (2002). *Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations: Annual Report 2002*. Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821.
- Etyemezian, V., J.A. Gillies, H. Kuhns, D. Nikolic, J. Veranth, R. Laban, G. Seshadri, and D. Gillette (2003). *Field Testing and Evaluation of Dust Deposition and Removal Mechanisms*. Prepared for The WESTAR Council, Lake Oswego, OR, 97035.
- Mansell, G., M. Wolfe, J. Gillies, B. Barnard, and M. Omary (2003). *Determining Fugitive Dust Emissions from Wind Erosion*. Prepared for Western Governors' Association, Denver, CO, by ENVIRON, Eastern Research Group, Desert Research Institute, MACTEC Engineering & Consulting, U.C. Riverside, College of Engineering – Center for Environmental Research and Technology.
- Gillies, J.A. and L. Berkofsky (2003). *Dust Emissions from Drylands: Implications for Desertification*. Final report prepared for the International Arid Lands Consortium, University of Arizona, Tucson AZ, June 2003.
- Gillies, J.A., P. Arnott, V. Etyemezian, D.A. Gillette, H. Kuhns, E. McDonald, H. Moosmüller, W. G. Nickling, G. Schwemmer, and T. Wilkerson (2003). *Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations: Annual Report 2003*. Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821, Dec. 2003.
- King, W.C., R. Harmon, E. Mc Donald, K. Redmond, J. Gillies, W. Doe, S. Warren, D. Gilewitch, V. Morrill, G. Stullenberger, L. Havrilo (2004). *Scientific Characterization of Desert Environments for Military Testing, Training and Operations*. Prepared for Environmental Sciences Branch, Engineering and Environmental Sciences Division, USARO, Research Triangle Park, NC, 27709-2211, April 2004.
- Gillies, J.A., W.G. Nickling, and N. Lancaster (2004). *Airflow and Sediment Transport in Complex Terrains on Mars: A Shear Stress Partitioning Approach: 1st Annual Report*. Prepared for NASA Goddard Space Flight Center, Greenbelt MD, July. 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., W.G. Nickling, and N. Lancaster (2004). *Airflow and Sediment Transport in Complex Terrains on Mars: A Shear Stress Partitioning Approach: 2nd Annual Report*. Prepared for NASA Goddard Space Flight Center, Greenbelt MD, Nov. 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 (2005). *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, March 2005.
- DuBois, D., V. Etyemezian, J. Gillies, E. MacDonald, M. Sweeney, and J. Xu (2005). *Review of: Salton Sea Ecosystem Restoration Plan: Task Order 17, No 2: Outline Control Measures for Non-Playa Emissions, Task Order 17, No 3: Evaluate, Identify Gaps, and Provide Management of Current Aerometric Monitoring Data Collection Efforts, Description of Air Quality Conditions under the No-Action Alternative*. Report prepared for California Department of Water Resources, Colorado River and Salton Sea Office, 770 Fairmont Av. Glendale, CA 91203, Aug. 2005.
- Clayton, R., D. Proffitt, A.W. Gertler, J.A. Gillies, M. Abu-Allaban (2005). *Particulate Matter (PM_{2.5} and PM₁₀) Apportionment for On-Road Mobile Sources Phase II: Continuation Project for Mobile PM Control Measures*. Report Prepared for Prepared for National Cooperative Research Program, Transportation Research Board, National Research Council, Washington, DC, 20001, December 2005.
- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, J. Engelbrecht, M. Sweeney, S. Uppapalli, A. Abu Rahmah, G. Nickolic, and D.A. Gillette (2005). *Particulate Matter Emission for Dust from Unique Military Activities*. Annual Report Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821, December 2005.
- Etyemezian, V., S. Ahonen, J.A. Gillies, J. Goreham, I. Kavouras, G. Nikolich, M. Sweeney, and M. Young (2006). *Plutonium Soil Stabilization at the Nevada Test Site: Final Report*. Report Prepared for Encapco Technologies LLC, Napa CA, 94559, and Naval Facilities Engineering Service Center 1100 23rd St. Port Hueneme, CA, 93043, March 2006.
- Gillies, J.A. (2006). *Aeolian Processes on the Surface of Mars: Final Report on NASA EPSCoR Proposal Development Award*. Report Prepared for Nevada NASA EPSCoR Office, 775 E. Flamingo Road, Las Vegas NV 89119, June 2006.

- Etyemezian, V., M. Sweeney, E. McDonald, T. Caldwell, J.A. Gillies, G. Nikolich, J. Xu, W. Nickling, and T. Macpherson (2006). *Measurement of Windblown Dust Emission Potential and Soil Characteristics at the Salton Sea in Support of the Programmatic Environmental Impact Report*. Report Prepared for California Department of Water Resources, Colorado River and Salton Sea Office, 770 Fairmont Av. Glendale, CA 91203.
- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, J. Engelbrecht, M. Sweeney, S. Uppapalli, G. Nikolich, D.A. Gillette, K.J. Allwine, F.C. Rutz, and E.G. Chapman (2006). *Particulate Matter Emission for Dust from Unique Military Activities*. Annual Report Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821, December 2006.
- 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.
- Etyemezian, V., H. Kuhns, J. Gillies, S. Uppapalli, G. Nikolich, and D. Zhu (2007). *Clark County Alternative Technologies for Paved Road Dust Emissions Measurement*. Report prepared for Clark County Department of Air Quality and Environmental Management, 500 S. Grand Central Pky., P.O. Box 551741, Las Vegas, NV 89155-1741, January 2007.
- Gillies, J.A., W.G. Nickling, and N. Lancaster (2007). *Airflow and Sediment Transport in Complex Terrains on Mars: A Shear Stress Partitioning Approach: Final Report*. Prepared for NASA Goddard Space Flight Center, Greenbelt MD, September 2007.
- Engelbrecht, J.P., E. McDonald, J.A. Gillies, and A. Gertler (2007). *Department of Defense Advanced Particulate Matter Surveillance Program*. Prepared for Enhanced Particulate Matter Surveillance Sub-Group, Particulate Matter Working Group, Deputy Assistant Secretary of Defense for Force Health Promotion and Readiness, Assistant Secretary of Defense for Health Affairs, and Natural Environments Test Office, US Army Development Test Command Yuma Proving Ground, October 2007.
- Gillies, J.A., V. Etyemezian, H. Kuhns, H. Moosmüller, Dr. J. Engelbrecht, Dr. J. King, Mr. S. Uppapalli, Mr. G. Nikolich, Mr. J.D. McAlpine, and Dr. D.A. Gillette, and K.J. Allwine (2007). *Particulate Matter Emission for Dust from Unique Military Activities*. Annual Report Prepared for Strategic Environmental Research and Development (SERDP), Arlington, VA, 22203-1821, December 2007.
- Kuhns, H. D. Zhu, J.A. Gillies, A. Gertler, V. Etyemezian, and S. Brown (2007). *Measurement and Modeling of Fugitive Dust Emission from Paved Road Travel in the Lake Tahoe Basin*. Measurement and Modeling of Fugitive Dust Emissions from Paved Road Travel in the Lake Tahoe Basin. Final Report Prepared for US EPA Region 9, 75 Hawthorne Street, San Francisco, CA, 94105, 31 December 2007.

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California Air Resources Board, “Technical Support Study 5: Particle Resuspension (01-01-94 to 31-12-96, \$14,000, PI).

Air and Waste Technology Co., Ltd., Bangkok, Thailand, “Assessment of Chemical Suppressant Effectiveness to Reduce PM₁₀ Emissions from Unpaved Roads in Thailand” (15-11-98 to 01-01-01, \$4,786, PI).

International Arid Lands Consortium, Tucson AZ, “Dust Emissions from Drylands: Implication for Desertification” (15-05-99 to 14-05-02, \$61,461, PI).

National Science Foundation, Arlington VA, “Measurement and Modeling of Dust Emissions” (08-01-99 to 08-01-01, \$180,000, PI).

Great Basin Unified Air Pollution Control District, Bishop CA, “Field Evaluation of the Effectiveness of Saltgrass/Desert Shrub Complexes in Reducing Dust Emissions at Owens Lake, CA” (01-07-99 to 30-06-00, \$160,897, Co-PI).

Arcadis Geraghty & Miller, “Particulate Matter (PM₁₀ and PM_{2.5}) Apportionment from On-Road Mobile Sources” (30-01-1999 to 9-01-2003, \$445,530, Co-PI).

U.S. Dept. of Agriculture, Cooperative State Research, Education, and Extension Service, National Research Initiative Competitive Grants Program (NRICGP), “Relationships among Rangeland Vegetation Community Structure, Wind Erosion Processes, and Ecosystem Degradation” (09-01-00 to 09-01-02, \$177,000, PI)

Naval Research Laboratory, Washington, DC, “The Fate and Distribution of Radio-Frequency Chaff” (10-01-00 to 09-31-01, \$330,000, Co-PI).

Department of Defense, Strategic Environmental Research Development Program (SERDP), “Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations” (01-03-01 to 28-02-04, \$981,721, PI).

Great Basin Unified Air Pollution Control District, Bishop CA, “Portable Field Wind Tunnel Measurements of Dust Emission Thresholds and Fluxes” (01-01-01 to 30-06-01, \$130,000, Co-PI).

Western Environmental Law Center / Sierra Club, Provide expert review of Draft Environmental Impact Statement SCH No. 99021039 “Cadiz Groundwater Storage Dry-Year Supply Program” (01-12-00 to 31-01-00, \$3,500, PI).

U.S. National Science Foundation, “Aeolian Processes in the McMurdo Dry Valleys, Antarctica” (01-06-01 to 31-05-03, \$232,471, Co-PI).

Environ International Corporation, “Determining Fugitive Dust Emissions from Wind Erosion” (14-10-2002 to 30-11-2003, \$13,560, PI).

U.S. Army, West Point, “Environmental Characterization of Desert Biomes for Military Testing” (7-7-2003 to 30-09-2003, \$47,418, Co-PI).

National Aeronautics and Space Administration, “Airflow and Sediment Transport in Complex Terrain on Mars: A Shear Stress Partitioning Approach” (15-01-2003 to 30-06-2007, \$330,000, PI).

Department of Defense, Strategic Environmental Research Development Program (SERDP), “Particulate Matter Emissions for Dust from Unique Department of Defense Sources” (15-02-04 to 31-12-2009, \$1,400,000, PI).

U.S. EPA, “Measurement and Modeling of fugitive dust emissions from paved road travel in the Lake Tahoe Basin” (1-10-05 to 15-10-07, \$ 174,886, Co-PI).

U.S. National Science Foundation, “Acquisition of an X-ray Diffractometer” (15-09-05 to 31-08-07, \$269,163, Co-PI).

Nevada National Aeronautics and Space Administration EPSCoR, “Aeolian Processes on the Surface of Mars – Proposal Development Award” (01-04-06 to 15-06-06, \$14,000, PI).

U.S. Department of Defense, “Department of Defense Advanced Particulate Matter Surveillance Program” (05-05-05 to 30-09-09, \$309,268, Co-PI).

U.S. EPA, “Source Characterization of Particulate Matter Depositing to Lake Tahoe” (15-01-07 to 31-03-08, \$199,949, Co-PI).

U.S Bureau of Land Management, “Sediment Transport to White-Margined Penstemon Habitat”, (01-04-07 to 31-04-09, \$800,000, Co-PI)

U.S. National Science Foundation, “Dynamics of the Aeolian Sediment Transport System, McMurdo Dry Valleys, Antarctica” (01-06-07 to 31-05-10, \$244,413, PI).

Great Basin Unified Air Pollution Control District, “Consulting Services, Owens Lake Settlement Agreement” (01-07-07 to 30-06-10, \$80,000, PI).

U.S. Forest Service, “Assessing the Impact of Best Management Practices (BMPs) Designed to Reduce the Contribution from Resuspended Road Rust to Lake Tahoe”, (01-10-07 to 31-10-09, \$462,141, PI).

NASA Office of Education “Exploring Planetary Surfaces: Earth, Moon and Mars” (01-12-07 to 31-12-10, \$450,000, Co-Investigator).

U.S. Army Corp of Engineers, Construction Engineering Research Laboratory, “Dust Emissions from Military Vehicles, Ft. Carson, CO” (09-01-08 to 31-12-08, \$32,000, PI).

U.S. National Science Foundation, “Vegetative Roughness Controls on Aeolian Sediment Transport” (08-01-08 to 31-07-11, \$300,000, PI).