Dr. Mahmoud Mohammed Abu –Allaban

Associate Professor
The Hashemite University
Zerqa, Jordan
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Education:

2003	**Ph.D. in Physics**
School:	**University of Nevada at Reno, USA**
Dissertation Title:	Characterizing Particulate Matter Emitted from On-Road Motor Vehicles.
1996	**M.Sc. in Physics**
School:	**Yarmouk University, Jordan**
1992	**B.Sc**. in **Physics**
School:	**Yarmouk University, Jordan**

Academic and Teaching Experience:

2019-Current	Chairman, Department of Water Management and Environment.
2013-Current	Associate Professor; Hashemite University, Zarqa, Jordan.
2006-2008	Chairman, Department of Water Management and Environment.
2004-2013	Assistant Professor; Hashemite University, Zarqa, Jordan.
1999-2000	Teaching Assistant; Department of Physics, University of Nevada, Reno, NV, USA
1996-1998	Part Time Lecturer; Department of Physics, Jordan University for Science & Technology, Irbid, Jordan.
1996-1998	Teaching Assistant; Department of Physics, Yarmouk University, Irbid, Jordan.

Research Interests

Dr Abu-Allaban has over 20-years experience in the research field of Air Pollution with particular emphasis on the impact of mobile sources on the environment. His research includes measurements and characterization of mobile source PM10 and PM2.5 emissions, assessing the impact of highways on ambient gaseous and particulate pollutant levels, and development of new methods to attribute observed PM levels to specific sources. He has participated in several air quality projects worldwide including Cairo Air Improvement Project, NCHRP Project 25-18 Road Sanding and Salting Effects on PM10 and PM2.5 Emissions by On-Road Vehicles and the SERDP sponsored Characterizing and Quantifying Local and Regional Particulate Matter Emissions from Department of Defense Installations. Dr Abu-Allaban was a principle investigator for several projects; including Ozone transboundary in North Jordan, Quantifying Emissions of Gaseous Pollutants from on Road Fleet, and the Impact of Limestone Quarries on Ambient Air Quality. He also has been active in carrying out sound and rigorous statistical analysis of climate data in order to detect recent changes in the climate in Jordan.

Publications:

1. Salahuddin M. Jaber, M. Abu-Allaban (2020). MODIS-based land surface temperature for climate variability and change research: the tale of a typical semi-arid to arid environment. European Journal of Remote Sensing. 53(1), 81–90.https://doi.org/10.1080/22797254.2020.1735264.
2. Mahmoud Abu-Allaban. (2020) The Impact of Composting on Air Quality in the Jordanian Badia. JJEES 11 (1): 18-25.
3. Mahmoud Abu-Allaban, Khitam Odibat, and Sana'a Odat .(2018). Developing a Forecast Model to Estimate Instantaneous Tropospheric Ozone based on meteorological parameters. International Journal of Ecology & Development, 33(1):50-66.
4. Sana'a Odat, Mahmoud Abu-Allaban and Bra'ah AL-Trawneh. (2018). Studying the Impact of weather on air quality at Aqaba. Nature Environment and Pollution Technology. 17(2): 359-366.
5. Sana'a Odat, Mahmoud Abu-Allaban and Khitam Odibat.(2017). Influence of Meteorological Parameters on Air Quality at the Campus of the Hashemite University. Current World Environment, 12(2): 211-221.
6. Abu Sada, A.; Abu-Allaban, M.; Al-Malabeh, A. 2015.Temporal and Spatial Analysis of Climate Change at Northern Jordanian Badia. JJEES 7(2): 87-93. http://jjees.hu.edu.jo/files /Vol7N2/JJEES_Vol7N2_P87-P93.pdf
7. Salahuddin M. Jaber, M. Abu-Allaban (2017). Mapping the spatial distribution of tropospheric ozone and exploring its association with elevation and land cover over North Jordan. Journal of Spatial Science 62(2):307-322.
8. Al-Mashaqbeh, A., Abu-Allaban, M., Al-Malabah, A. (2015). Air Quality Impact of the Upgraded Al-Samra Waste Water Treatment Plant . Jordan

Journal for Earth and Environmental Sciences, 7(1) 19-26 http://jjees.hu.edu.jo/files/Vol7N1/Vol7N1_HQ_P19-26.pdf
9. Abu-Allaban, M.; El-Naqa, A.; Jaber, M.;Hammouri, N. (2015).Water scarcity impact of climate change in semi-arid regions: a case study in Mujib basin, Jordan. Arab J Geosci.8:951-959. DOI 10.1007/s12517-014-1266-5.
10. Abu-Allaban, M. and El-Khalili, MM. (2014).Antiquity Impact Of Air Pollution At Gadara, Jordan. Mediterranean Archaeology and Archaeometry 14(1), 191-199.
11. Abu-Allaban, M.; Abu-Qudais, H. (2011).Impact Assessment of Ambient Air Quality by Cement Industry: A Case Study inJordan. *Aerosol and Air Quality Research*, 11(7): 802–810. doi: 10.4209/aaqr.2011.07.0090. http://aaqr.org/VOL11_No7_December2011/2_AAQR-11-07-OA-0090_802-10.pdf
12. Hamdi, Moshrik. R.; Abu-Allaban, M.; Jaber, M.(2011). Statistical Examining of frost characterization: A case of global warming impact in Jordan. *Journal of Water Resource and Protection*, 3, 620-627 doi:10.4236/jwarp.2011.38071 . (http://www.SciRP.org/journal/jwarp)
13. Hamasha, S.; Abu-Allaban, M.; Tahat, A. (2011) Developing a New Atomic Physics Computer Program (HTAC) to Perform Atomic Structure and Transition Rate Calculations in Three Advanced Methods. Journal of Applied Sciences, DOI: 10.3923/jas.2011.
14. Hamasha, K. M.; Almomani, M. S.; Abu-Allaban, M.; Arnot, W. P. (2010).Study of Black Carbon Levels in City Centers and Industrial Centers in Jordan. Jordanian Journal of Physics, 3:(1), 1-8.
15. Hamdi, M.R.; Abu-Allaban, M.; Elshaieb, A.; Jaber, M.; Momani, N.M. (2009). Climate Change in Jordan: A Comprehensive Examination Approach. *American Journal of Environmental Sciences*, 5(1), 740-750.
16. Abu-Allaban, M., Lowenthal, D, Gertler, A. W. Labib, M. (2009).Sources of Volatile Organic Compounds in Cairo's Ambient Air.*EnvironMonit Assess*, 157:179–189DOI 10.1007/s10661-008-0526-9.
17. Gillies, J.; Abu-Allabanb, M.; Gertler, A; Lowenthal, D: Jennison, B; Goodrich, A. (2008). Enhanced PM2.5 Source Apportionment Using Chemical Mass Balance Receptor Modeling and Scanning Electron Microscopy. Jordanian Journal of Earth and Environmental Science, 1:(1) 1-9.
18. Hamasha, S.; Abu Allaban, M; (2008).Modeling Atmospheric Turbidity at Zarqa Area Using Meteorological Data. Jordanian Journal of Physics, 1:(1), 53-60.
19. Abu-Allaban, M.; Al-Jedaih,M.; Al-Malabeh, A.; Suleiman, A. (2007). Emission Rates of Gaseous Pollutants from Motor Vehicles. JJC, 2:(2),199-209 .
20. Abu-Allaban, M., Lowenthal, D, Gertler, A. W. Labib, M. (2007).Sources of PM10 and PM2.5 in Cairo's Ambient Air.*EnvironMonit Assess*, 133:417-425.

21. Abu-Allaban,et al., 2007. Motor Vehicle Contributions to Ambient PM10 and PM2.5 at Selected Urban Areas in the USA.*Environ. Moni.t Assess*. 132:155–163
22. Abu-Allaban, M, Hamasha, S., Gertler, A. W. (2006). Road Dust Resuspension in the Vicinity of Limestone Quarries in Jordan.*JAWMA*, 56, 1440-1444.
23. Gertler, A; Kuhnsa, H.; Abu-Allabanb, M.; Dammc, C.; Gillies, J.; Etyemeziana,V.; Clayton, R.; Proffitt, D. (2006) A case study of the impact of Winter road sand/salt and street sweeping on road dust re-entrainment. *Atmospheric Environment*, 40 (2006) 5976-5985.
24. Abu-Allaban et al., 2004.A Quantitative Description of On-Road Vehicle Exhaust Particle Size Distributions.*JAWMA*, 54:360–366.
25. Abu-Allaban et al., 2003.Application of a Multi-Lag Regression Approach to Determine On-Road PM10 and PM2.5 Emission Factors.*Atmospheric Environment*, 37 (2003) 5157–5164.
26. Abu-Allaban et al., 2003.Tailpipe,Resuspended Road Dust, and brake-wear EmissionFactors from On-Road vehicles. *Atmospheric Environment*, 37 (2003) 5283–5293.
27. Abu-Allaban, M., W. Coulombe, A.W. Gertler, J. 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 Sci. & Technol*. 36: 771 – 789.
28. 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**, 86-93.

Conference Papers:

29. Lehlooh, A., Abu-Allaban, M. and Mahmood, S. 1997: Low Temperature Mossbauer Spectroscopy Study of the Fe(1-x)Ni(x) Alloy Prepared by Chemical Co-Precipitation Method, *5th International Symposium on Advanced Materials pp.313-317, Islamabad, Pakistan.*
30. 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 (1999). Ambient Sampling of Diesel Particulate Matter. Presented to the *Mobile Sources Technical Review Subcommittee of the Clean Air Act Advisory Committee,* Washington, DC, 13 October, 1999.
31. 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. Presented at the *A&WMA PM2000: Particulate Matter and Health – The Scientific Basis for Regulatory Decision-Making*, Charleston, SC, January 25-28, 2000.
32. 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. Presented at the *HEI 2000 Annual Meeting*, Atlanta, GA, April 9-11, 2000.

33. Gertler, A.W., J.C. Sagebiel, J.A. Gillies, C.F. Rogers, and M. Abu-Allban (2000). An Overview of DRI Tunnel Studies: 1992 to 1999. Presented at the Workshop on Traffic Emissions, Roadway, and Tunnel Studies, Vienna, Austria, October 1-3, 2000.35.
34. Abu-Allaban, M., J.A., Gillies, A.W. Gertler, R. Clayton, and D. Proffitt (2002). Determination of On-Road PM10 And PM2.5 Emission Rates Using Roadside Measurements, Presented at 11th International Symposium Transport and Air Pollution, Graz, Austria, June 19 –21, 2002.
35. Abu-Allaban, M., J.A. Gillies, A.W. Gertler, R. Clayton, and D. Proffitt (2001). Characterizing Particulate Matter Emitted From On-Road Motor Vehicles, Presented at the 11th CRC On-Road Vehicle Emissions Workshop, San Diego, California, March 26-28, 2001.
36. Abu-Allaban, M., C.F. Rogers, and A.W. Gertler (2001). On-Road Vehicle Exhaust Particle Size Distributions: Quantitative Description, Presented at the 11th CRC On-Road Vehicle Emissions Workshop, San Diego, California, March 26-28, 2001.
37. Abu-Allaban, M., J.A. Gillies, A.W. Gertler, R. Clayton and D. Proffitt (2002). Determination of On-Road Pm10 and Pm2.5 Emission Rates Using a Multi-Lag Regression Approach. Presented at the 12th CRC On-Road Vehicle Emissions Workshop, San Diego, CA, April 15-17, 2002.
38. Gertler, A., H. Kuhns, C. Damm, J. Gillies, M. Abu-Allaban, R. Clayton, and D. Proffitt, The Impact of Winter Road Sand/Salt and Street Sweeping on Road Dust Re-Entrainment. 13th International Symposium on Transport and Air Pollution, National Center for Atmospheric Research Boulder, 13-15 September 2004 Colorado USA.

Grants:

2006-2011	**Inland Air-Quality Impacts from Urbanization of the Eastern Mediterranean Coast** Grant: US$165,100 Sponsor: USAID
2011-2016	**Studying the Spatial Distribution of Tropospheric Ozone Over North Jordan Using Remote Sensing and Geographic Information System** Grant: US$ 22,000 Sponsor: Deanship of Scientific Research and Graduate Studies, Hashemite University
2014-2018	**Producing a Three Dimensions Atlas for Wind in Jordan** Grant: US$ 25,000 Sponsor: Deanship of Scientific Research and Graduate Studies, Hashemite University

Awards and Scholarships:

2008	T**he Hashemite University Award for Distinguished Researcher**
	From: The Hashemite University, Zarqa, Jordan
2000-2003	**Doctoral Scholarship**
	From: The Hashemite University, Zarqa, Jordan
1998-2003	**Research Assistantship**
	From: Desert Research Institute, Reno, NV, USA
1992-1996	**Teaching Assistantship**
	From: Yarmouk University, Irbid, Jordan
1988-1992	**Bachelor Scholarship**
	From: Ministry of Higher Education, Amman, Jordan

Supervising Graduate Students:

Khitam Odibat; 2016
Thesis: Impact of Weather Parameters on Air Quality at the Campus of Hashemite University.

Bara'ah Al-Tarawneh; 2016
Thesis: Correlation between Meteorological Conditions and Air Quality at Aqaba City, Jordan

Morad Sako; 2015
Thesis: The Impact of the Jordanian Law of Environment of 2005 on Air Quality in Greater Amman City.

Abdallah Almashaqbah; 2015
Thesis: Air Quality Impact of the Upgraded Al-Samra Waste Water Treatment Plant.

Alaa Abu-Sa'adah; 2014
Thesis: Temporal and Spatial Analysis of Climate Change at Northern Jordanian Badia.

Mohammad Jaber; 2014
Thesis: Water scarcity impact of climate change in semi-arid regions: a case study in Mujib basin, Jordan.

Baraa' Al-Jyatwah; 2013

Thesis: Determination of the Instantaneous Ozone Concentrations, Trends, and Exceedances at the Campus ofJordan University of Science and Technology.

Mamoon Al-Jedaih; 2006

Thesis: Estimating Emission Rates of Greenhouse Gasses Emitted from on-Road Motor Vehicles and their Impact on Ambient Air Quality In Jordan.

Courses Taught:

- Air Pollution
- Air Pollution Control
- Monitoring Air Quality
- Fluid Mechanics
- Energy and its Sources
- Astronomy
- Radiation Safety
- Meteorology
- Environmental Impact Assessment
- Climate Change
- Global Warming