

ABDELHALEEM I. KHADER

Associate Professor, Assistant Dean, Faculty of Engineering and Information Technology
An-Najah National University, Nablus, Palestine
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EDUCATION

- PhD, Civil and Environmental Engineering** August 2012
Utah State University, Logan, Utah, USA
Dissertation: “Value of information from groundwater quality monitoring network design under uncertainty in climate and aquifer properties” Advisor: Dr. Mac McKee
- M.S, Water and Environmental Engineering** April 2007
An-Najah National University, Nablus, Palestine
Thesis: “Impact of Pumping on Saltwater Intrusion in Gaza Coastal Aquifer, Palestine”
Advisor: Dr. Mohammad Almasri
- B.S, Civil Engineering** January 2004
An-Najah National University, Nablus, Palestine
Project: “Seismic and Structural Design of the new Engineering Building, An-Najah National University ” Advisor: Dr. Abdel-Razzaq Touqan

RESEARCH INTERESTS

Air Quality and Sampling	Value of Information Analysis
Solid Waste Management	Surface Water/Groundwater Modeling
Water/Wastewater Treatment	Water/Groundwater Quality
Monitoring Network Design	Decision Tree Models
Statistical Learning Machines	

HONORS AND AWARDS

- The Institute of International Education (IIE), 2021-2022 Rodman November 2021,
A. Rockefeller **Centennial Fellowship** New York, USA
- An-Najah National University **Research Fund No. ANNU-1920-Sc009** September 2019,
Nablus, Palestine
- Fulbright Fellowship.** visiting scholar at Utah State University May-August, 2019
Logan, UT, USA
- An-Najah National University **Research Fund No. ANNU-1819-Sc015** September 2018,
Nablus, Palestine
- Runner-Up of the Young Professional **Best Paper Award** for the June 2017,
Environmental Management Group, at the Air & Waste Pittsburgh, PA,
Management Association’s 110th Annual Conference & USA
Exhibition
- Zamalah Fellowship.** Welfare Association grant to support me as May-August, 2016
visiting scholar at Utah State University Logan, UT, USA
- Excellence in Research Award.** An-Najah National University May 1, 2015
Nablus, Palestine
- First Place,** J. Paul Riley AWRA-Utah Section Student Water April 10, 2012
Resources Conference and Paper Competition Logan, UT, USA

PROFESSIONAL EXPERIENCE

Associate Professor

Department of Civil Engineering, An-Najah National University
(ABET Accredited)

2013- present
Nablus, Palestine

- Lecturer and Researcher at Water and Environmental Circle.
- Teaching the following under graduate courses:
 - 10601110: Engineering Statics
 - 10601350: Environmental Engineering I
 - 10601450: Environmental Engineering II
 - 10601594: Geographical Information Systems (GIS)
 - 10601300: Principles of scientific research and technical writing
 - 11000162: Environment In Palestine
 - 10601451: Environmental Engineering Lab.
 - 10601598: Graduation Project I
 - 10601599: Graduation Project II
- Teaching the following graduate courses:
 - 461685: Special Topics in Environmental Engineering (Environmental Modeling with MATLAB)
 - 400580/461685: Special Topics in Environmental Engineering (Introduction to Air Quality)
 - 400577: Air Quality Control
 - 461651: Water Treatment Systems
- Supervising several undergraduate senior projects in Civil Engineering
- Supervising graduate students in Water and Environmental Engineering

Visiting Scholar

Utah Water Research Laboratory

May – August 2019
Logan, UT, USA

- Performed research on air quality in the city of Nablus
- Performed research on ammonia emissions from cars
- Participated on regional air quality projects
- Participated in two engineering camps for high school students

Visiting Scholar

Utah Water Research Laboratory

May – August 2016
Logan, UT, USA

- Performed research on the impact of driver's age, gender, and driving conditions on car emissions
- Participated in analyzing the data of a major study about Great Salt Lake particulate matter
- Volunteered in Engineering State, which is a program designed to teach high school students about engineering
- Helped assembling low-cost particle sensors
- Participated in Air and Waste Management Association (AWMA) 109th annual meeting in New Orleans, LA
- Establishing and coordinating Air Quality research and scientific proposals in Palestine

Postdoctoral Fellow

Department of Civil Engineering, McMaster University

2012- 2013
Hamilton, ON, Canada

- Main Project: "Decision Support Tool for Integrated Water Monitoring Network Design and Evaluation"
- Estimation of groundwater recharge in southern Ontario, Canada using distributed models and streamflow records approach
- Distributed precipitation-runoff modeling for southern Ontario, Canada using PRMS
- Groundwater monitoring network design using Bayesian multi-objective evolutionary algorithm (ϵ -hBOA)
- Integrated precipitation/surface water/groundwater/water quality monitoring networks design and evaluation

Research Assistant (Graduate Student) 2007-2012
 Utah Water Research Laboratory, Utah State University Logan, UT, USA

- Groundwater flow modeling for the Eocene Aquifer, Palestine using MODFLOW
- Nitrate fate and transport modeling for the Eocene Aquifer using MT3DMS
- Uncertainty analysis using Monte Carlo Simulations
- Monitoring network design using statistical learning machines
- Studying the health risk consequences of nitrate pollution
- Value of information analysis for optimal monitoring network design
- Pre-mining Groundwater analysis for potash mining in Lisbon Valley in southeastern Utah (undergoing project)

Instructor, Iraqi Agriculture Extension Revitalization Program October 2009
 Utah State University Logan, UT, USA

- Developed the content of lecture materials in Water Quality and Hydrology
- Responsible for following the trainees progress and performance through frequent quizzes, monitoring and evaluation.
- In charge of coordinating and carrying out field trips and site investigation in Southern Utah

Master Student, Water and Environmental Studies Institute 2004-2007
 An-Najah National University Nablus, Palestine

- Worked on saltwater intrusion modeling using MODFLOW, SEAWAT, and GWM

Teaching Assistant, Civil Engineering Department 2004
 An-Najah National University Nablus, Palestine

- Instruction, grading, and preparing tests for Construction Materials Lab and Structural Analysis II

Site Engineer, Engineering Works Department 2004-2007
 An-Najah National University Nablus, Palestine

- Worked in supervising the new science building. Total cost of the project: \$8,000,000. Total area: 18,000 m²
- Prepared bills of quantities and as-built maps
- Modified structural designs when needed
- Supervised daily activities of 120 construction workers
- Reviewed monthly bills by the contractor
- Reviewed and signed monthly payments for the contractor

PROJECT EXPERIENCE

Developing Market Analysis Study for Municipal Organic Waste Management (2022)

- Team Leader and environmental Expert.

Environmental Impact Assessment Report – Animal Feed Mill (2020)

- Providing consultancy services for Dibas Feed co.

Conduct Time and Motion Study for Improving Service Delivery Quality and Cost Efficiency of Solid Waste Management in Municipalities of Al-Mazra’a, Bani Na’im, and Qalqilya

- Providing consultancy services for Tetra Tech

Environmental and Social Impact Assessment Report - Construction of a 5MW Solar Power Plant - Shams Tubas Project

- Providing consultancy services for JaffaNSP

Feasibility Study for Groundwater Recharge in Wadi Abu Al-Qamrah, Dura

- Providing consultancy services for The Union of Agricultural Work Committees (UAWC) as part of Hebron Agriculture Improvement Action (HAIA) Project

Integrating Microwave Link Data For Analysis of Precipitation in Complex Terrain: Theoretical Aspects and Hydrometeorological Applications (IMAP)

- Working on the hydrological part of this German Palestinian project funded by the DFG

PUBLICATIONS (PEER-REVIEWED)

- Saleh, T.; **Khader, A.** Urban Particulate Matter Hazard Mapping and Monitoring Site Selection in Nablus, Palestine. *Atmosphere* **2022**, *13*, 1134.
<https://doi.org/10.3390/atmos13071134>
- S. Shadeed, A. Jayyousi, **A. Khader**, C. Chwala, H. Kunstmann, (2021) “Comparative analysis of interpolation methods for rainfall mapping in the Faria catchment, Palestine”. *An - Najah Univ. J. Res. (N. Sc.)- under press*
- A. Rasem Hasan, Amjad I.A. Hussein, Asmaa Al-Asmar, **Abdelhaleem Khader**, Hanan A. Jafar and Tawfiq Saleh (2021). “Long Term Monitoring of Air Pollution from Quarries with Health Effects—Case of Palestine”, *A book chapter in: Air Pollution and Public Health: Challenges, Interventions and Sustainable Solutions. ISBN: 978-93-90951-00-0*
- Abdah, B., Al-Khatib, I.A., **Khader, A.I.** (2020). “[Birzeit University Students’ Perception of Bottled Water Available in the West Bank Market](#)”, *Journal of Environmental and Public Health Volume 2020, Article ID 5986340, 10 pages.*
<https://doi.org/10.1155/2020/5986340>
- **Khader, A.I.**; Martin, R.S. (2019) “Use of Low-Cost Ambient Particulate Sensors in Nablus, Palestine with Application to the Assessment of Regional Dust Storms” *Atmosphere* **2019**, *10*, 539.
- **Khader, A.I.**; Martin, R.S. (2019) “[On-the-road testing of the effects of driver’s experience, gender, speed, and road grade on car emissions](#)”, *Journal of the Air & Waste Management Association*, DOI: 10.1080/10962247.2019.1640804
- **Khader, A.I.**; El-Kelani, R.; and Shadeed, S. (2019) “Potential artificial recharge to a semi-arid basin: Case study in a shallow groundwater aquifer, south of West Bank, Palestine”, *JJEES (2019) 10 (4): 187-193 ISSN 1995-6681*
- **Khader, A.I.** (2017). “[A spatial estimation of groundwater recharge in southern Ontario, Canada](#)” *An - Najah Univ. J. Res. (N. Sc.) Vol. 13(1), 2017*
- **Khader, A.I.** and McKee, M. (2014). “[Use of a relevance vector machine for groundwater quality monitoring network design under uncertainty](#)” *Environmental Modeling and Software*, Available online 25 March 2014, ISSN 1364-8152,
<http://dx.doi.org/10.1016/j.envsoft.2014.02.015>
- **Khader, A.I.**; Rosenberg, D. E.; and McKee, M. (2013) “[A decision tree model to estimate the value of information provided by a groundwater quality monitoring network](#)”, *Hydrol. Earth Syst. Sci.*, *17*, 1797-1807, doi:10.5194/hess-17-1797-2013, 2013.

CONFERENCE PRECEEDINGS /PRESENTATIONS

- **A. Khader** and R. Martin (2020) “Particulate Matter Pollution in Hookah Lounges in Palestine”. A&WMA 113th Annual Conference. Virtual Conference.
- **A. Khader**, S. Shadeed, A. Jayyousi, H. Kunstmann, C. Chwala, J. Arnault, and T. Rummler (2019) “WRF-Hydro Modeling of Semi-Arid Regions with Channel Transmission Loss Function: The Case Study of Faria Catchment, West Bank, Palestine”. The Second International Conference on Civil Engineering, Palestine, 2019
- S. Shadeed, C. Chwala, A. Jayyousi, **A. Khader**, H. Kunstmann (2019) “Rainfall

- Mapping in the Faria Catchment, Palestine – Comparison and Evaluation of Six Interpolation Methods”. The Second International Conference on Civil Engineering, Palestine, 2019
- W. Hamad, M. Ishtayeh, R. Martin, **A. Khader**, (2019) “Effects of Air Pollution on Lung Function in Specific Areas in Nablus City”. The Second International Conference on Civil Engineering, Palestine, 2019
 - T. Saleh, **A. Khader**, (2019) “The Impact of Air Quality on Lung Function for the Residents of Tulkarm City, Palestine”. The Second International Conference on Civil Engineering, Palestine, 2019
 - M. Waldali, A. Abu Zarour, **A. Khader**, (2019) “Reuse of Treated Wastewater from Nablus-West Wastewater Treatment Plant in Ready-Mix Concrete Industry ”. The Second International Conference on Civil Engineering, Palestine, 2019
 - El-Kelani, R. and **Khader, A.** (2019): Refraction Seismic Study over a Proposed Landfill Site in South West Bank, Palestine, *Advances in Science, Technology & Innovation, Significant Applications of Geophysical Methods*, Proceedings of the 1st Springer Conference of CAJG-1, Chapter 22, 978-3-030-01655-5.
 - El-Kelani, R and **Khader, A.** (2019): Assessment and Mapping of Proposed Dam Sites in North West Bank, Palestine Using GIS, *Advances in Science, Technology, Sustainable and Environmental Hydrology, Hydrogeology, Hydrochemistry and Water Resources*, Proceedings of the 1st Springer Conference of CAJG-1, Chapter 100, 978-3-030-01571-8.
 - **A. Khader**, S. Shadeed, A. Jayyousi, H. Kunstmann, C. Chwala, J. Arnault, and T. Rummler (2018) “WRF-Hydro Modeling of Semi-Arid Regions Using Multiple Sources of Rainfall Data: The Case Study of Faria Catchment, West Bank, Palestine”. *Geophysical Research Abstracts*. Vol. 20, EGU2018-19226, 2018. EGU General Assembly 2018
 - **A. Khader** and R. Martin (2017). “On-the-road testing of the effects of driver’s experience, gender, and driving conditions on car emissions”. A&WMA 110th Annual Conference. Pittsburg, PA 2017.
 - **A. Khader** and A. Hasan (2015). “Air quality characterization in the City of Nablus, Palestine”. The Sixth Jordanian International Civil Engineering Conference. Amman, Jordan 2015.
 - **A. Khader**, M. McKee, and David Rosenberg (2012). “Integrated groundwater quality monitoring network design, Case study: Eocene Aquifer, Palestine”. *Computational Methods in Water Resources*, XIX International conference. Urbana-Champaign, IL 2012.
 - **A. Khader**, M. McKee (2010). “Value of information analysis for groundwater quality monitoring network design”. American Geophysical Union (AGU) Fall meeting. San Francisco, CA 2010.
 - **A. Khader**, M. McKee (2010). “Groundwater Monitoring Network Design under Uncertainty in Climate and Aquifer Properties”. Utah State University Spring runoff conference. Logan, UT 2010.
 - **A. Khader**, M. McKee (2010). “Analyzing the Impacts of Climate Change on Groundwater Monitoring Network Design Using GIS”. American water resources association (AWRA) spring specialty conference. Orlando, FL 2010.
 - **A. Khader**, M. Amasri (2008). “Impact of Pumping on Saltwater Intrusion in the Gaza Coastal Aquifer, Palestine”. Universities council on water resources (UCOWR) conference. Durham, NC 2008.

TRAINING COURSES

Managed Aquifer Recharge (MAR) An Intensive 5-day course by IHE Delft, NL.	November 2020 Online course
Desalination An Intensive 5-day course by IHE Delft, NL.	August 2020 Online course
Remote Sensing and GIS Applications An Intensive 5-day course by University of Twente, NL.	July 2020 Online course
Do-it-yourself GeoApps how to combine location and narrative and build powerful native applications for iOS and Android	March 2016 Online course
Getting Started as a Successful Proposal Writer and Academician An intensive one-day workshop for beginning concepts in grant writing Office of Research and Graduate Studies, Utah State University	April 2012 Logan, UT, USA
Integrated Water Resources Management (IWRM) Water Studies Institute, Birzeit University, Palestine.	September 2005 Birzeit, Palestine
Seismic Design of Buildings Engineers Association – Jerusalem Center	December 2003 Nablus, Palestine

PROFESSIONAL AFFILIATIONS

Air and Waste Management Association, since 2016
American Geophysical Union – student section, since 2010
American Society of Civil Engineers – student section, since 2010
Jordanian Engineers Association – Jerusalem Center , since 2005

LANGUAGES

English (full professional proficiency)
Arabic (native speaker)

COMPUTER SKILLS

Programming Language: Matlab
Statistical Application: R, Lingo
Groundwater: MODFLOW, SEAWAT, MT3DMS
Engineering Software: WaterCAD, SewerCAD, AutoCAD, ArcGIS, ERDAS,
MS Office: Word, Excel, and PowerPoint,
and others

REFERENCES

Dr. Mac McKee
Director, Utah Water Research Laboratory
Professor, Civil and Environmental Engineering
mac.mckee@usu.edu

Dr. Sameer Shadeed
Assistant Professor, An-Najah
National University
sshadeed@najah.edu

Dr. Randal Martin
Research Associate Professor, Utah Water Research Laboratory
randy.martin@usu.edu