# WALID SABBAH
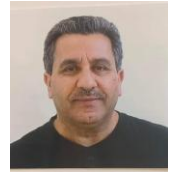
Assistant Professor, Head of Administrative & Financial Sciences Department
Faculty of Graduate Studies, Arab American University, Ramallah, Palestine
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## PROFESSIONAL SUMMARY

I am a hydrologist and geospatial modeler with experience in water and environmental issues, advanced data analytics, spatial data mining, artificial intelligence, and machine learning analysis. Experienced in managing incomplete hydrologic and geospatial data, assessing the impacts of poorly understood parameters on model performance using knowledge in geospatial data management and geo-statistical modeling. A professional with strong interpersonal skills to work in teams and achieve objectives, self-starter proficient at managing multiple priorities with efficiency. 20+ years of intensive experience running projects in integrated water resources management, water supply and demand, socioeconomics of water and environment, geospatial modeling, water conflict resolutions in transboundary interstate basins, and related assessment.

## SKILLS

- Data Management and Analysis
- GIS Analysis and Modeling
- Parameter Estimation (PEST)
- Groundwater Modeling
- Proposal Writing and Development

- Project Management
- Remote Sensing and Image Processing
- Geostatistical Analysis
- Pollution Transport Modeling
- Proofreading and Editing Services

## EDUCATION

- **Ph.D.**: **Civil & Environmental Engineering, Brigham Young University [08/2004],** Provo, Utah, USA
  **Master of Science**: **Hydrogeology, University of Jordan [09/1991],** Amman, Jordan

- **Bachelor of Science**: **Earth & Environmental Sciences, Yarmouk University [01/1988],** Irbid, Jordan

## LANGUAGES

**English**

Fluent

**Arabic**

Native

## AFFILIATIONS

- Member of the American Society of Civil Engineers (ASCE)
- Member of the Geological Society of America (GSA)

## SOFTWARE PROFICIENCY

- Microsoft Office Suite (Word, Excel, Power Points, etc.)
- ArcGIS Enterprise Version 10.8 (ArcGIS Pro and ArcGIS Online) with all extensions
- Golden Software Group including Surfer (Version 27) and Grapher (Version 23)
- Python (Version 3.12) with NumPy (Version 1.26) and Pandas (Version 2.2) libraries
- Tableau Desktop (Version 2024.1) for Data Analysis & Data Visualization
- NVIVO (Version 15) Software for Qualitative Research Analysis
- S-GeMS (Version 2.0) Stanford Geostatistics Software for 3D geostatistical modeling
- Groundwater Modeling System (GMS, Version 10.8)
- USGS MODFLOW suite of programs (MODFLOW-2000, MODFLOW-2005, MODFLOW 6, MODFLOW-NWT, MODFLOW-USG, MODPATH, MT3D-USGS)
- Parameter Estimation (PEST) for Automatic Model Calibration
- AquaChem (Version 12): Water Quality Software
- AQTESOLV (Version 4.5): Advanced Aquifer Test Analysis Software

## CERTIFICATIONS

1. **Google Project Management Professional Certificate (Google, June 2024)** *Certificate*

   This certificate encompasses six courses designed by Google, featuring direct, practice-based assessments. It prepares individuals for project management roles by making them proficient in initiating, planning, and running both traditional and agile projects.

   Key learnings include:
   - Understanding project management practices and skills and creating effective project documentation
   - Foundations of Agile project management, focusing on Scrum events, artifacts, and roles
   - Practicing strategic communication, problem-solving, and stakeholder management

2. **Google Advanced Data Analytics Professional Certificate (Google, May 2024)** *Certificate*

   This certificate consists of seven courses with direct assessments, preparing individuals for advanced data analytics and entry-level data science roles.

   Skills acquired include:
   - Exploring roles of data professionals in organizations
   - Creating data visualizations and applying statistical methods
   - Building regression and machine learning models for data analysis

3. **Certified ChatGPT Expert (Blockchain Council, May 2024)** *Certificate*

   This certification focuses on OpenAI's ChatGPT technology, enhancing career prospects in AI. The program teaches advanced natural language processing, applicable in sectors like customer service, marketing, and healthcare, by leveraging ChatGPT's human-like language capabilities.

4. **Introduction to Relational Database and SQL (Coursera, May 2024)** *Certificate*

   This course offers direct experience in understanding relational database fundamentals and writing basic SQL statements for querying and maintaining databases.

**[03/2025 – Current] Assistant Professor, Head of Administrative & Financial Sciences Department, Faculty of Graduate Studies, Arab American University, Ramallah, Palestine**

Teaching the following classes: Computer Skills, Fundamentals of Research Methods, GIS Applications in Hydrology and Spatial Modeling, GIS Applications in Geological Studies, GIS & Digital Maps for Property Valuation.

**[10/2024 – 02/2024] Assistant Professor of GIS and Hydrological Modeling, Faculty of Information Technology, Arab American University, Jenin, Palestine**

Teaching the following classes: Computer Skills, Fundamentals of Research Methods, GIS Applications in Hydrology and Spatial Modeling, GIS Applications in Geological Studies, GIS & Digital Maps for Property Valuation.

**[07/2023 – 09/2024] Principal Hydrologist & Geospatial Modeler, Edreesy Geospatial Solutions – Draper, UT, USA**

- Managed multiple projects related to geospatial modeling, groundwater modeling, and climate change simulations.
- Mentoring college students who participate in internships.

**[07/2022 - 07/2023] Principal Hydrogeologist/Groundwater Modeler, Robinson-Noble Inc., Tacoma, WA, USA**

- Build, run, and calibrate groundwater flow models to simulate groundwater/surface water interactions and their relationships to climate change.
- Build Geo-database using GIS and spatial data science.
- Write and submit research proposals for potential clients.

**[01/2020 - 07/2022] Hydrologist/Geospatial & Groundwater Modeler, USGS Oklahoma Water Science Center, Oklahoma City, OK, USA**

- Building groundwater flow models to simulate flow interaction between surface water and groundwater in various Oklahoma-Texas watersheds, streams, and lakes.
- Modifying existing models to fit current and future developments by using more data to validate models using inverse calibrations.

**[10/2018 - 12/2019] Freelancer for Hydrology and Geospatial Modeling, Seattle, WA, USA**

- Advise clients on hydrology and geospatial modeling, provide remediation solutions for polluted groundwater, and conduct environmental impact assessments.
- Research and designate premium sites to recharge and withdraw groundwater, select landfill locations that will not impact quality of groundwater or surface water.

**[09/2014 - 09/2018] Assistant Professor of GIS and Hydrological Modeling, GIS Department, Faculty of Engineering & Information Technology, Arab American University, Jenin, Palestine**

- Taught the following classes: Computer Skills, Fundamentals of Research Methods, Introduction to GIS, Intermediate GIS, Advanced GIS, Principles of Geology, Principles of Maps, Computer Skills for GIS, Introductory Remote Sensing and Image Processing, GIS Applications in Hydrology and Spatial Modeling, Meteorology and Climate, Geopolitics of Natural Resources, Geo-database Design and Management, GIS Applications in Geological Studies, GIS & Digital Maps for Property Valuation.
- Served as the chairperson of the GIS department (2014 – 2016) and performed duties of the position.
- Prepared the GIS and hydrological modeling curriculum and the advisory study plan.
- Hiring diverse faculty and other research and teaching staff.

**[02/2006 - 09/2014]** **Hydrogeologist/Groundwater Modeler/GIS Analyst, Utah Geological Survey, Salt Lake City, UT, USA**

- Evaluated regional surface water and ground-water flow budgets for watersheds and groundwater basins using spatial GIS modeling.
- Utilized ArcGIS and similar geospatial modeling software to develop environmental assessment and perform water resources research.
- Built ground-water flow models to simulate flow and pollution from mining activities and landfills to surface water and groundwater.
- Designed hydrological models to simulate pollutants caused by fertilizers, pesticides, septic tanks, and similar activities into ground and surface water.

**[07/2005 – 12/2005]** **Visiting Assistant Professor for Hydrogeology & Groundwater Modeling, Department of Geosciences, Brigham Young University**, Provo, UT, USA
- Teaching hydrogeology and groundwater modeling class
- Teaching GIS and Geospatial Sciences Class

**[06/2004 – 12/2005]** **Visiting Assistant Professor for Hydrogeology & Geospatial Modeling, Earth Science Department, Utah Valley University, Orem, UT, USA**
- I taught environmental geology, hydrology, and groundwater to college students. Prepared and conducted hydrological modeling studies for research projects.
- Designed and configured drinking water source protection plans for groundwater wells.
- I taught environmental geology, hydrology, and groundwater to college students.
- Prepared and conducted hydrological modeling studies for research projects.
- Designed and configured drinking water source protection plans for groundwater wells.

**[01/2000 – 08/2004]** **Graduate Research/Teaching Assistant, Civil & environmental engineering department, Brigham Young University, Provo, UT, USA**

- Teaching assistant and substitute instructor for Fluid Mechanics, Hydrology, Hydraulic Engineering, Geo-Environmental Engineering, Ground-water Modeling, and Water Quality Management.
- Research assistant for evaluating the efficiency of using various geo-statistical interpolation techniques embedded in Groundwater Modeling System (GMS) software for 3-D Plume Characterization.

**[11/1999 – 12/1999]** **Technical Director of GIS & Mapping Department, Arab Studies Society, Orient House, East Jerusalem, Palestine.**
- Established the GIS unit and installed all hardware and software infrastructures.
- Hire technical staff to convert all traditional paper maps and related data int relational GIS databases.
- Running urban planning project for east Jerusalem including establishing geodatabases for all maps of Palestinian properties in Jerusalem (East & West) from 1947 to 1994.

**[11/1992 – 10/1998]** **Research Associate & Water Research Program Manager, Applied Research Institute of Jerusalem (ARIJ)**, Bethlehem, Palestine.
- Conducting water related research projects including establishing a water and GIS-related environmental database for the institute.
- Using various GIS software facilities to identify the potential sources of pollution and control and protect groundwater quality.
- Drafting research proposals and submitting them for funding with topics covering water, environmental, land use, and irrigated and

## SELECTED PUBLICATIONS

1. Hamdan, I., Awad, M., **Sabbah, W.**, 2018, Short-Term Forecasting of Weather Conditions in Palestine Using Artificial Neural Networks, Journal of Theoretical and Applied Information Technology, 15th May 2018, Vol. 96, No. 9.

2. Kmail, A., Jubran, J., **Sabbah, W.**, 2017, Coupling GIS-based MCA and AHP techniques for Hospital Site Selection: International Journal of Computer Science and Information Security (IJCSIS), Vol. 15, No. 12, December 2017, pp. 49-56.

3. Murrar, A., Sadaqa A., Rabayah, K., Samhan, S., Tamimi, A., **Sabbah, W.**, Barghouthi, I., 2017, The Efficiency and Institutional Performance of the Palestinian Water Service Providers: American Journal of Environmental and Resource Economics, Vol. 2, No. 5, 2017, pp. 162-174. DOI: 10.11648/j.ajere.20170205.13.

4. Jordan, J.L., Inkenbrandt, P., Hurlow, H., and **Sabbah, W.**, 2014, Aquifer tests, Chapter 7 in Hurlow, H., editor, Hydrogeologic studies and groundwater monitoring in Snake Valley and adjacent hydrographic areas, west-central Utah and east-central N: Utah Geological Survey Bulletin 135, p. 195–232.

5. **Sabbah, W.**, and Miller, W., 2012, Evaluation of Water Budget for the Western Aquifer Basin in the West Bank, Palestine, International journal for environment and water, Volume 1, Issue 2, P 89-101, The Euro-Arab Organization for Environment, Water, and Desert Research, Manchester, UK.

6. **Sabbah, W.**, and Miller, W., 2012, Updated Water Budget for the Western Aquifer Basin and Potential for Agricultural Development in the West Bank, Palestine. Conference on Water Crisis and Agricultural Development in the West Bank in Palestine, 21-22 May 2012, Palestine.

7. Jordan, J.L., and **Sabbah, W.**, 2012, Hydrogeology and Simulation of Groundwater Flow in Cedar Valley, Utah County, UT: Utah Geological Survey Special Study 145, 125 p.

8. Wallace, Janae, Lowe, Mike, King, John, **Sabbah, Walid**, and Thomas, Kevin, 2012, Hydrogeology of Morgan Valley, Morgan County, Utah: Utah Geological Survey Special Study 139, 137 p.

9. **Sabbah, Walid**, Lowe, Mike, Wallace, Janae, and Thomas, Kevin, 2011, Developing a Water Budget for Morgan Valley, Morgan County, UT: Geological Society of America Abstracts with Programs, V. 43, No. 4, p. 73.

10. Lowe, Mike, **Sabbah, Walid**, and Wallace, Janae, 2011, Groundwater Model-Based Septic-Tank Density Recommendations Using a Mass-Balance Approach to Protect Groundwater Quality, Cedar Valley, Iron County, Utah: Geological Society of America Abstracts with Programs, V. 43, No. 4, p. 74.

11. Jordan, Lucy, and **Sabbah, Walid**, 2007, Ground-water flow, water-level trends, and the connection between Fairfield Spring and the basin-fill aquifer in Cedar Valley, Utah County, north-central Utah, in Willis, G.C., Hylland, M.D., Clark, D.L., and Chidsey, T.C., Jr., editors, Central Utah - diverse geology of a dynamic landscape: Utah Geological Association Publication 36, p. 345-359, Salt Lake City, UT.

12. **Sabbah, Walid**, and Miller, W., 2007, Developing a Spatial Modeling Approach to Integrate Water Sustainability Map for the West Bank Aquifers. Proceedings of the International Conference on Sustainable Development and Management of Water in Palestine, 26-29 August 2007, Amman, Jordan.

13. **Sabbah, Walid Wajeeh**, 2005, Developing A GIS And Hydrological Modeling Approach for Sustainable Water Resources Management in The West Bank -- Palestine, All Theses and

Dissertations. Paper 297, http://scholarsarchive.byu.edu/etd/297, Brigham Young University, Provo, UT.

14. Jones, Norman, Davis, Jeffrey, and **Sabbah, Walid**, 2003, A Comparison of 3D Interpolation Techniques for Plume Characterization, Ground Water®. Vol. 41, No. 4, P.411-419. July-August 2003, OH.

15. **Sabbah, Walid**, Abu Amrieh, Mohammad, and Al-Juneidi, Faten, 1998, Executive summary of results of the study on Potentials for Sustainable and Equitable Development of Irrigated Agriculture in the West Bank, Applied Research Institute, Palestine.

16. Isaac, Jad, and **Sabbah, Walid**, 1998, Water Resources and Irrigated Agriculture in the West Bank, Applied Research Institute, Palestine.

17. **Sabbah, Walid**, and Isaac, Jad, 1996, Evaluation of Water Resources Management in Ramallah District, International Symposium of Water Resources Management in Palestine, 8-9 May 1996, An-Najah University, Palestine.

18. Al-Juneidi, Faten, **Sabbah, Walid**, and Isaac, Jad, 1996, Irrigation Management and Water Use Efficiency in the West Bank, Applied Research Institute, Palestine.

19. **Sabbah, Walid**, Isaac, Jad, 1995, Towards a Palestinian Water Policy, Regional Seminar on Options and Strategies for Freshwater Development and Utilization in Arab Countries, June 26-28, 1995, Amman, Jordan.

20. Isaac, Jad, **Sabbah, Walid**, 1994, The Intensifying Water Crisis in Palestine, Applied Research Institute of Jerusalem, Bethlehem, Palestine.

21. **Sabbah, Walid, 1991**, Water and Sediment Load Quality of Wadi El-Walah Floods, Master Thesis, University of Jordan, Amman, Jordan.

—————————————— **REFERENCES** ——————————————

References will be provided upon request.