



Layla Khalaf-Kairouz, Doctorate

Associate Professor

Department of Sciences

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Biography

BS. & MS. Geology from the "American University of Beirut". Doctorate Environmental Geology from the University of Muenster-Germany.

Specialization: Risk assessment of contaminated sites by organic and inorganic pollutants. The published dissertation "Development of an Analysis Method for Polycyclic Aromatic Hydrocarbons (PAHs) in Soil with Regard to Danger Assessment of Inherited Wastes" demonstrated an analytical method for the determination of Polycyclic Aromatic Hydrocarbons (PAHs) in Soils, in addition to heavy metals analysis. The contamination risks of nine sites were assessed and recommendations were presented to the city municipality with respect to future land uses.

Program developer of the Environmental Science major at NDU.

Chairperson of the Sciences Department at the Faculty of the Natural & Applied Sciences: 1997-2001.

Advisor of the Environmental Science major students.

Instructor of the courses of Geology, Air, Water and Soil pollution, Solid waste Management, Environmental Impact assessment, Sustainable development, Senior projects supervisor.

Interdisciplinary research interests include the monitoring of the air quality in Lebanon, with emphasis on health impacts; Geo-Environmental Hazards; Education for Sustainability in Universities; Solid waste management; Geothermal Energy.

Peer-reviewed Journals

- Khalaf-Kairouz, L., Harb J., 2024. Geophysical investigation of the Semmaqiyeh-Aakkar, Lebanon, geothermal source. *Geothermics*, 118. March 2024. https://authors.elsevier.com/a/1iHKH_8YfBclIQ.
- Khalaf-Kairouz, Layla, 2017. Post wars solid waste. *Waste Management*, 68 (2017) pp.1-2. <https://doi.org/10.1016/j.wasman.2017.09.006>. <http://www.sciencedirect.com/science/article/pii/S0956053X17306621>.
- Rima Baalbaki, Rachel El Hage, Julie Nassar, Jocelyne Gerard, Nada B. Saliba, Rita Zaarour, Maher Abboud, Wehbeh Farah, Layla Khalaf-Kairouz, Alan L. Shihadeh and Najat A. Saliba, 2016. Exposure to Atmospheric PMs, PAHs, PCDD/FS and Metals near an Open Air Waste Burning Site in Beirut. *Lebanese Science Journal*, Vol. 17, No. 2, 2016. <http://lsj.cnrs.edu.lb/2016/12/30/r-baalbaki-r-el-hage-j-nassar-j-gerard-n-b-saliba-r-zaarour-m-abboud-w-farah-l-k-khalaf-a-l-shihadeh-n-a-saliba/>. <http://dx.doi.org/10.22453/LSJ-017.2.091103>
- Shaban, A. & Khalaf-Kairouz, L. 2013. The Geological Controls of Geothermal Groundwater Sources in Lebanon. *International Journal of Energy and Environment*, vol. 4, Issue, 5, pp.787-796. http://www.ijee.ieefoundation.org/vol4/issue5/IJEE_04_v4n5.pdf.
- Khalaf-Kairouz, L., 2012. Education for Sustainable Development at Notre Dame University-Louaize: Environmental Science Curriculum - A Pre-phase to the "RUCAS Project" on Education for Sustainable Development. *Discourse and Communication for Sustainable Education*, vol. 3, pp. 121-134, 2012. DOI: 10.2478/v10230-012-0009-7. http://www.ise-lv.eu/ufiles/1371033560DCFSE_2012.pdf
- Khalaf-Kairouz, L. & Shaban, A., 2008. Criteria and Indicators of Hydrological Drought in Lebanon. *Algerian Journal of Technology*. AJOT, volume 2, March 2008, pp. 875-889.

Peer-reviewed Conference Proceedings

- Ibrahim, E., Salloum, N., Cornou, C., Abdel-Massih, D., Abdallah, C., Hage-Chehade, F., Harb, J., Khalaf-Kairouz, L., Nasr, G., Rahhal, M., and Sursock, A. (2016) "Optimizing Non-Invasive Techniques for Surface and Sub-Surface Soil Characterizations for a Slope in Lebanon." Geotechnical and Structural Engineering Congress 2016 Phoenix, Arizona, February 14–17, 2016: pp. 1675-1687. doi: 10.1061/9780784479742.143
- T. Matar, F. Hage Chehade, J. Harb, M. Rahhal, D. Youssef Abdel Massih, C. Abdallah, E. Ibrahim, L. Khalaf-Keyrouz, G. Nasr, G. Abou-Jaoude, and A. Sursock, (2015) "Static and Dynamic Analyses of Dahr El Baidar Slope", COMPDYN 2015, 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, M. Papadrakakis, V. Papadopoulos, V. Plevris (eds.), 25–27 May 2015. Crete Island, Greece. http://2015.compdyn.org/files/uploads/general/programme_compdyn_uncecomp_2015.pdf. Page 91.
- Rahhal, M., Youssef Abdel Massih, D., Harb, J., Hage-Chehade, F., Abdallah, C., Khalaf-Kairouz, L., Abou-Jaoude, G., Ibrahim, E., Nasr, G., Sursock, A., 2014. Modelling Dahr El Baidar Slope with an integrated Geo-Assessment. 2nd European Conference on Earthquake Engineering and Seismology. August 25-29, 2014. Istanbul, Turkey. http://www.eaee.org/Media/Default/2ECCES/2ecces_eaee/1891.pdf
- Khalaf-Kairouz, L. 2014. Solid Waste Management: The case of Lebanon. Symposium on Urban Mining SUM2014. May 19-21, 2014. Bergamo, Italy. http://urbanmining.it/wp-content/uploads/2013/12/SUM14_Programme_110314.pdf.
- Shaban, A. & Khalaf-Kairouz, L. 2012. Preliminary Geological Prospects on the Geothermal Water in Lebanon. International Conference on Renewable Energy for Developing Countries (REDEC 2012). IEEE. November 28 – 29, 2012. Beirut, Lebanon. Paper 77. (www.redec2012.ressol-medbuild.eu). <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6416712>

Chapters in Books

International

- Nancy Kanbar, Sami Samra, Talal Salem, Jacques Harb, Layla Khalaf-Kairouz, Tanos Hage, Jacqueline Doumit, George Labaki, Yussef Zgheib, 2013. Institutionalization of Sustainability within Notre Dame University-Louaize, Lebanon. RUCAS: (Reorient University Curricula to Address Sustainability-Tempus Project): Case Studies and Student Practicum Placement Projects. E-book. Pages.103-115. <http://www.rucastoolkit.edc.uoc.gr/wp-content/uploads/2013/12/RUCAS-E-Book.pdf>.

Books

International

- Khalaf, L. 1995. Development of an Analysis Method for Polycyclic Aromatic Hydrocarbons (PAHs) in Soil with Regard to Danger Assessment of Inherited Wastes. Book of Ph.D. Dissertation, Germany, 1995.

Local

- Khalaf, L. 1986. The economic geology of the quartz sands as raw materials for the glass industry in Lebanon. M.S. thesis. American University of Beirut-Lebanon. <http://hdl.handle.net/10938/4233>

Specialized Reports

International

- Moarkech K. & Khalaf- Kairouz, L. 2007. Vulnerability of El-Kabir River Basin, Akkar, to Geo-Environmental Impacts Using GIS Techniques. L'ACQUA, Associazione Idrotecnica Italiana, Issue 5, September-October, 2007, pp. 39-44. Rome, Italy.

Professional Development

- Expert Seminars in Germany as per invitation by the German Academic Exchange service DAAD and the University of Siegen: Photovoltaics-2024, Wastewater technology-2016, Water production-2012, Solid waste-2010, Water & Energy 2009. Along with visits to the trade fairs: Smarter E-Europe 2024, IFAT/Munich, Geofora/Hof & Berlin water fair.
- Training of Trainers by AWARNET-ESCWA, UNESCO-IHE. Cap-Net: Integrated Water Resources Management IWRM and Climate Change. Cairo-Egypt- 2008 & Kuwait 2005.

CV

<https://www.ndu.edu.lb/Library/Assets/Files/Documents/NDUFacultyProfiles/NDUFacultyCVs/Layla%20Khalaf.pdf>