

CURRICULUM VITAE

Mahdi Hadi, Ph.D.

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Google Scholar: <https://scholar.google.com/citations?user=xSSU0wsAAAAJ&hl=en>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=55167260000>

Youtube channel: https://www.youtube.com/@mahdi_hadi

GitHub Portfolio: <https://mehdihadi.github.io/>

Summary:

I am an experienced environmental data scientist. My research focuses on quantitative microbial assessment in drinking water and reclaimed waters, and I have expertise in statistical analysis and data science, particularly using R language with around ten years of experience. Moreover, I have around 4 years of experience as a Shiny developer, and I have developed several web-based apps using Shiny. These skills have enabled me to develop effective data visualization tools that can be used for public health decision-making. I plan to use my skills to analyze relationships between WASH variables and health effects and also to develop web applications for environmental health data analysis and visualization. I enjoy problem-solving and coding.

Main Interests:

- Water, Sanitation and Hygiene (WASH)
- Quantitative Microbial Risk Assessment
- Environmental Data Science
- Environmental Epidemiology
- Inferential Statistics
- R programming
- Shiny app Development

Mahdi Hadi, Ph.D.

Environmental data science, drinking water, microbial risk assessment

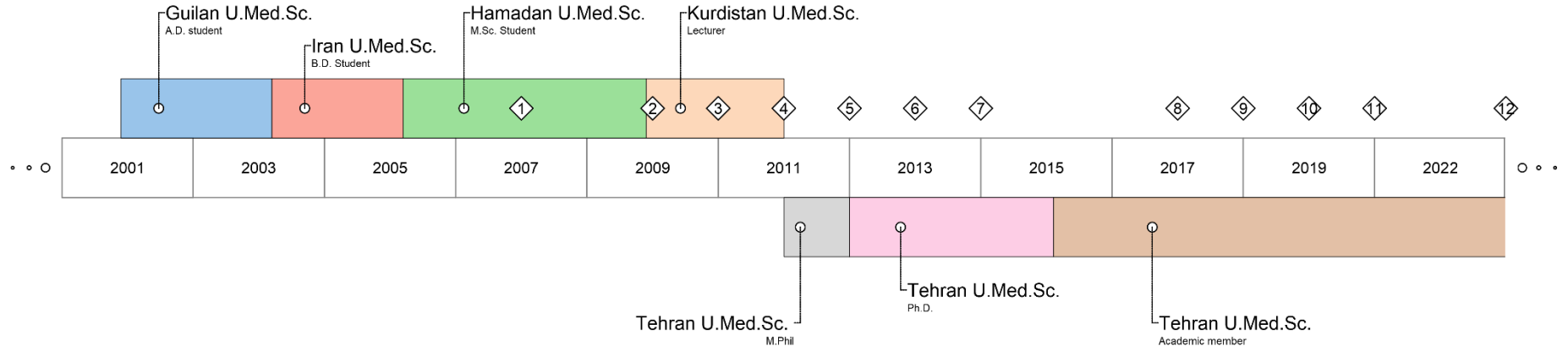
*Built in R using the InfoResume package: www.ndphilips.github.io/inforesume

<https://enier.tums.ac.ir/Water-Quality-Research-Center-Faculty-members>

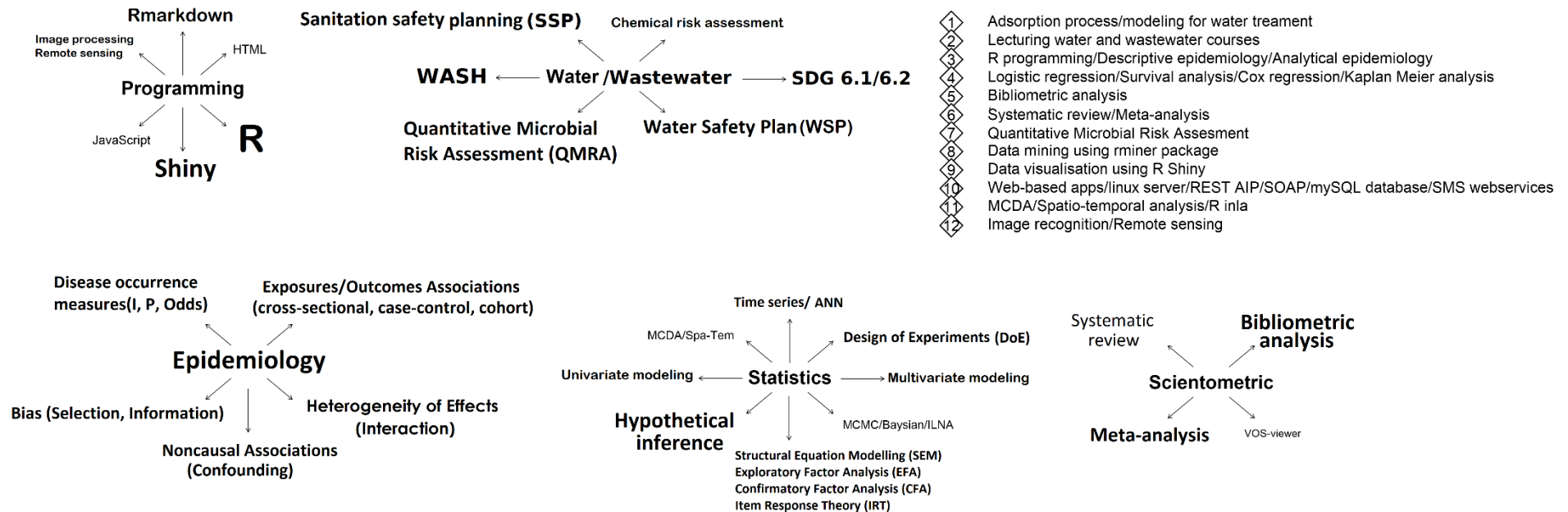
m.hadi1981@gmail.com

<https://enier.tums.ac.ir/Water-Quality-Research-Center-Faculty-members>

Education



Skills



QUALIFICATIONS

2016	Ph.D.	Environmental Health Engineering Tehran University of Medical Sciences Dissertation title: Quantitative Microbial Risk Assessment of <i>Cryptosporidium</i> and <i>Giardia</i> in Drinking Water produced from Jalaliyeh and Tehranpars Water Treatment Plants in Tehran, Iran (GPA: 19.24/20)
2012	M.Phil	Public health Tehran University of Medical Sciences
2009	M.S.	Environmental Health Engineering Hamedan University of Medical Sciences Dissertation title: Removal of Acid Dyes (Acid Black 1, Acid Blue 113) from Aqueous Solutions using BDST Technique Based on Bohart-Adams Model by Granular Pine-Cone Derived Activated Carbon (GPA: 17.6/20)
2005	B.S.	Environmental Health Iran University of Medical Sciences (GPA: 16.1/20)

PROFESSIONAL /EXECUTIVE POSITIONS

2022/6 – present	Director Center for Water Quality Research (CWQR) Institute for Environmental Research (IER) Tehran University of Medical Sciences
2022/6 – present	Associate professor Center for Water Quality Research (CWQR) Institute for Environmental Research (IER) Tehran University of Medical Sciences
2016/10 – 2022/6	Assistant professor Center for Water Quality Research (CWQR) Institute for Environmental Research (IER) Tehran University of Medical Sciences
2010/06 – 2012/06	Lecturer Faculty of Health Kurdistan University of Medical Sciences

MEMBERSHIPS

2017-present	International Water Association (IWA) Membership number: 1606809 Member of the following specialist groups: <ul style="list-style-type: none">• <i>Assessment and Control of Hazardous Substances in Water</i>• <i>Water Safety Planning</i>• <i>Health-Related Water Microbiology</i>• <i>IWA Young Water Professionals</i>
2010-present	Iranian Association of Environmental Health (IAEH)

PUBLICATIONS

ARTICLES (*ones as corresponding author):

Microbial Risk Assessment & Analysis

Aminabad MS, **Hadi M***, Mirbagheri SZ, Mesdaghinia A, Bakhtiari R, Alebouyeh M, Nazmara S. Effect of dilution factor on the isolation of *Helicobacter pylori* from municipal wastewater using culture technique. *Iranian Journal of Microbiology*. 2022 Dec 1;14(6).

Hashemi SY, Shahmahmoodi S, **Hadi M**, Nodehi RN, Alimohammadi M, Nejati A, Mesdaghinia A. Quantitative microbial risk assessment of enteroviruses in raw-eatable vegetables irrigated by wastewater: examining different scenarios of washing. *Journal of Environmental Health Science and Engineering*. 2022 Dec;20(2):629-40.

Abuzerr S, **Hadi M**, Zinszer K, Nasser S, Yunesian M, Mahvi AH, Nabizadeh R, Quantitative microbial risk assessment to estimate annual infection risk and disease burden attributable to *Escherichia coli* O157:H7 in drinking water in the Gaza Strip: a prospective study, *The Lancet*, 2022, [https://doi.org/10.1016/S0140-6736\(22\)01139-4](https://doi.org/10.1016/S0140-6736(22)01139-4)

Sadeghi S, Nikaeen M, Mohammadi F, Nafez AH, Gholipour S, Shamsizadeh Z, **Hadi M**. Microbial characteristics of municipal solid waste compost: Occupational and public health risks from surface applied compost. *Waste Management*. 2022 May 1;144:98-105.

Farhadkhani M, Nikaeen M, **Hadi M**, Nikaein H, Alum A, Abbaszadegan M. cryptosporidium's burden of disease attributable to consumption of wastewater-irrigated raw vegetables. *Microbial Risk Analysis*. 2022 Apr 27:100218.

Gholipour S, Hosseini M, Nikaeen M, **Hadi M**, Sarmadi M, Saderi H, Hassanzadeh A. Quantification of human adenovirus in irrigation water-soil-crop continuum: are consumers of wastewater-irrigated vegetables at risk?. *Environmental Science and Pollution Research*. 2022 Mar 18:1-0.

Nasser S, Yavarian J, Baghani AN, Azad TM, Nejati A, Nabizadeh R, **Hadi M**, Jandaghi NZ, Vakili B, Vaghefi SK, Baghban M. The presence of SARS-CoV-2 in raw and treated wastewater in 3 cities of Iran: Tehran, Qom and Anzali during coronavirus disease 2019 (COVID-19) outbreak. *Journal of Environmental Health Science and Engineering*. 2021 Feb 24:1-2.

Talepour N, **Hadi M**, Nasser S, Fard NJ, Mesdaghinia A, Borji SH. Isolation, identification and reviewing the health effect of HPC bacteria in household point-of-use (PoU) water treatment devices: a case study, Ahvaz, Iran. *Journal of Environmental Health Science and Engineering*. 2021 Feb 16:1-1.

Farhadkhani M, Nikaeen M, **Hadi M**, Gholipour S, Yadegarfar G. *Campylobacter* risk for the consumers of wastewater-irrigated vegetables based on field experiments. *Chemosphere*. 2020 Jul 1;251:126408.

Sheikhi R, Mahvi AH, Baghani AN, **Hadi M**, Sorooshian A, Delikhoon M, Golbaz S, Dalvand A, Johar F, Ghalhari MR. Reducing free residual chlorine using four simple physical methods in drinking water: effect of different parameters, monitoring microbial regrowth of culturable heterotrophic bacteria, and kinetic and thermodynamic studies. *Toxin Reviews*. 2020 Feb 18:1-4.

Abuzerr S, **Hadi M**, Zinszer K, Nasser S, Yunesian M, Mahvi AH, Nabizadeh R, Hussien Mohammed S. Comprehensive Risk Assessment of Health-Related Hazardous Events in the Drinking Water Supply System from Source to Tap in Gaza Strip, Palestine. *Journal of environmental and public health*. 2020 Jan 29;2020.

Hadi, Mahdi, Alireza Mesdaghinia, Masud Yunesian, Simin Nasser, Ramin Nabizadeh Nodehi, Patrick WMH Smeets, Jack Schijven, Hamidreza Tashauoei, and Esfandiar Jalilzadeh. "Optimizing the performance of conventional water treatment system using quantitative microbial risk assessment, Tehran, Iran." *Water research*, 162, 394-408 (2019).

Moazeni M, Nikaeen M, **Hadi M**, Moghim S, Mouhebat L, Hatamzadeh M, Hassanzadeh A. Estimation of health risks caused by exposure to enteroviruses from agricultural application of wastewater effluents. *Water Research*. 2017 Nov 15;125:104-13.

Hadi M, Mesdaghinia A, Yunesian M, Nasser S, Nodehi RN, Tashauoei H, Jalilzadeh E, Zarinnejad R. Contribution of environmental media to cryptosporidiosis and giardiasis prevalence in Tehran: a focus on surface waters. *Environmental Science and Pollution Research*. 2016 Oct 1;23(19):19317-29.

Chemical Risk Assessment

Karimyana K, Alimohammadia M, Malekid A, Yunesiana M, Nodehia RN, Foroushanig AR, **Hadi M**. Spatial distribution and potential health risks of heavy metal (loid) s present in drinking water resources of Iran. *DESALINATION AND WATER TREATMENT*. 2020 Mar 1;179:223-41.

Ravanbakhsh M, Javid AZ, **Hadi M**, Fard NJ. Heavy metals risk assessment in fish species (*Johnius Belangerii* (C) and *Cynoglossus Arel*) in Musa Estuary, Persian Gulf. *Environmental Research*. 2020 Sep 1;188:109560.

Shokoohi R, Ghobadi N, Godini K, **Hadi M**, Atashzaban Z. Antibiotic detection in a hospital wastewater and comparison of their removal rate by activated sludge and earthworm-based vermifiltration: Environmental risk assessment. *Process Safety and Environmental Protection*. 2020 Feb 1;134:169-77.

Alimohammadi M, Younesian M, Madihi-Bidgoli S, Nabizadeh Nodehi R, Jahed Khaniki GR, **Hadi M**, Ghanbari F. Heavy metal (oid) s concentration in Tehran supermarket vegetables: carcinogenic and non-carcinogenic health risk assessment. *Toxin Reviews*. 2020 Jul 2;39(3):303-10.

Madanipour S, Alimohammadi M, Rezaie S, Nabizadeh R, Khaniki GJ, **Hadi M**, Yousefi M, Bidgoli SM, Yousefzadeh S. Influence of postharvest application of chitosan combined with ethanolic extract of liquorice on shelflife of apple fruit. *Journal of Environmental Health Science and Engineering*. 2019 Jun 1;17(1):331-6.

Radfard, M., Yunesian, M., Nabizadeh, R., Biglari, H., Nazmara, S., **Hadi, M.**, Yousefi, N., Yousefi, M., Abbasnia, A. and Mahvi, A.H., 2018. Drinking water quality and arsenic health risk assessment in Sistan and Baluchestan, Southeastern Province, Iran. *Human and Ecological Risk Assessment: An International Journal*, 2019, pp.1-17.

Mirzabeygi M, Abbasnia A, Yunesian M, Nodehi RN, Yousefi N, **Hadi M**, Mahvi AH. Heavy metal contamination and health risk assessment in drinking water of Sistan and Baluchistan, Southeastern Iran. *Human and Ecological Risk Assessment: An International Journal*. 2017 Nov 17;23(8):1893-905.

Mesdaghinia AR, Nasser S, **Hadi M***. Assessment of Carcinogenic Risk and Non-Carcinogenic Hazard Quotient of Chromium in Bottled Drinking Waters in Iran. *Iranian Journal of Health and Environment*. 2016 Dec 15;9(3):347-58.

Statistical Modeling

Dargahi P, Nasser S, **Hadi M***, Nodehi RN, Mahvi AH. Prediction models for groundwater quality parameters using a multiple linear regression (MLR): a case study of Kermanshah, Iran. *Journal of Environmental Health Science and Engineering*. 2022 Dec 23:1-9.

Afshin Maleki, Simin Nasser, Mehri Solaimany Aminabad, **Mahdi Hadi***, Comparison of ARIMA and NNAR Models for Forecasting Water Treatment Plant's Influent Characteristics, *KSCE Journal of Civil Engineering*, In Press.

Hossein Jafari Mansoorian, Mostafa Karimaee, **Mahdi Hadi**, Elaheh Jame Porazmey, Farzan Barati, Mansour Baziar, Feed Forward Artificial Neural Network Model to Estimate the TPH Removal Efficiency in Soil Washing Process, *Arch Hyg Sci*, 2017, 6(1), 96-104

Khodadadi M, Mesdaghinia A, Nasser S, Ghaneian MT, Ehrampoush MH, **Hadi M***. Prediction of the waste stabilization pond performance using linear multiple regression and multi-layer perceptron neural network: a case study of Birjand, Iran. *Environmental Health Engineering and Management Journal*. 2016 Jun 10.

Solaimany-Aminabad M, Maleki A, **Hadi M***. Application of artificial neural network (ANN) for the prediction of water treatment plant influent characteristics. *Journal of Advances in Environmental Health Research*. 2014 Jan 26;1(2):89-100.

Mesdaghinia A, Nasser S, Mahvi AH, Tashauoei HR, **Hadi M***. The estimation of per capita loadings of domestic wastewater in Tehran. *Journal of Environmental Health Science and Engineering*. 2015 Mar 24;13(1):1.

Water Sanitation and Hygiene (WASH)

Soleimani Z, Mosadeghrad AM, AbbasabadiArab M, Safari M, Moradi M, **Hadi M**, Asgari M, Taherkhani A, Mesdaghinia A. Paramedical staff's knowledge, attitude, and performance about nosocomial infection controls at hospitals: A cross-sectional survey in Iran. *Journal of Environmental Health Science and Engineering*. 2021 Jul 14:1-9.

Abuzerr S, Nasser S, Yunesian M, **Hadi M**, Zinszer K, Mahvi AH, Nabizadeh R, Abu Mustafa A, Mohammed SH. Water, sanitation, and hygiene risk factors of acute diarrhoea among children under five years in the Gaza Strip. *Journal of Water, Sanitation and Hygiene for Development*. 2020 Mar 1;10(1):111-23.

Abolli S, Alimohammadi M, Zamanzadeh M, Yaghmaeian K, Yunesian M, **Hadi M**, Soliemani Z. The Situation of water treatment devices in the public distribution network under the control of the water safety plan. *Iranian Journal of Health and Environment*. 2019 Dec 10;12(3):477-88.

Abuzerr S, Nasser S, Yunesian M, **Hadi M**, Mahvi AH, Nabizadeh R, Mustafa AA. Prevalence of diarrheal illness and healthcare-seeking behaviour by age-group and sex among the population of Gaza strip: a community-based cross-sectional study. *BMC public health*. 2019 Dec;19(1):704

Abuzerr, Samer, Simin Nasser, Masud Yunesian, **Mahdi Hadi**, Amir Hossein Mavi, Ramin Nabizadeh, and Ayman Abu Mustafa. "Household drinking water safety among the population of Gaza Strip, Palestine: knowledge, attitudes, practices, and satisfaction." *Journal of Water, Sanitation and Hygiene for Development* (2019).

Bakir H, **Hadi M**, Jurdi M. Towards a renewed public health regulatory and surveillance role in water, sanitation and hygiene. Eastern Mediterranean Health Journal. 2017 Aug 1;23(8):525-7.

Review And Meta-Analysis

Ravanipour, M., **Hadi M**, Rastkari, N., Borji, S.H. and Nasser, S., 2021. Presence of heavy metals in drinking water resources of Iran: a systematic review and meta-analysis. Environmental Science and Pollution Research, pp.1-29.

Abuzerr S, Nasser S, Yunesian M, Yassin S, **Hadi M**, Mahvi AH, Nabizadeh R, Al Agha M, Sarsour A, Darwish M. Microbiological quality of drinking water and prevalence of waterborne diseases in the Gaza strip, Palestine: a narrative review. Journal of Geoscience and Environment Protection. 2019 Apr 23;7(04):122.

Water & Wastewater Treatment

Rasulia L, Nasser S, **Hadi M**. Performance of surfactant-modified forms of clinoptilolite and pumice in nitrate removal from aqueous solution. DESALINATION AND WATER TREATMENT. 2020 Mar 1;180:227-36.

Hadi M, Solaimany Aminabad, M., Amiri, M. and Arjipour, M., 2018. Optimization of UV/H₂O₂/TiO₂ process for the treatment of hospital effluent. Iranian Journal of Health and Environment, 11(3), pp.293-306.

Akbari, A., Sadani, M., Amin, M.M., Teimouri, F., Khajeh, M., Mahdavi, M. and **Hadi M**, 2018. Managing sulfate ions produced by sulfate radical-advanced oxidation process using sulfate-reducing bacteria for the subsequent biological treatment. Journal of environmental chemical engineering, 6(5), pp.5929-5937.

Berizi Z, Hashemi SY, **Hadi M**, Azari A, Mahvi AH. The study of non-linear kinetics and adsorption isotherm models for Acid Red 18 from aqueous solutions by magnetite nanoparticles and magnetite nanoparticles modified by sodium alginate. Water Science and Technology. 2016 Sep 19;74(5):1235-42.

Mirzaei N, **Hadi M**, Gholami M, Fard RF, Aminabad MS. Sorption of acid dye by surfactant modified natural zeolites. Journal of the Taiwan Institute of Chemical Engineers. 2016 Feb 29;59:186-94.

Samarghandi MR, **Hadi M***, McKay G. Breakthrough Curve Analysis for Fixed-Bed Adsorption of Azo Dyes Using Novel Pine Cone—Derived Active Carbon. Adsorption Science & Technology. 2014 Dec 1;32(10):791-806.

McKay G, Mesdaghinia A, Nasser S, **Hadi M***, Aminabad MS. Optimum isotherms of dyes sorption by activated carbon: fractional theoretical capacity & error analysis. Chemical engineering journal. 2014 Sep 1;251:236-47.

Kiyani H, Shamohammadi S, **Hadi M**. Study of breakthrough curves for column of bed to remove manganese from aqueous solution by the windy sand of sisthan plain. Journal of Environmental Studies. 2013;1(39):21-30.

Samarghandi, M. R., **M. Hadi***, S. Azizian, and Aminabad M. Solaimany. behavioral parameters of pinecone derived activated carbon column for dye adsorption from aqueous solutions. Journal of Environmental Studies. 2012: 117-128.

Hadi M*, McKay G, Samarghandi MR, Maleki A, Solaimany Aminabad M. Prediction of optimum adsorption isotherm: comparison of chi-square and Log-likelihood statistics. *Desalination and water treatment*. 2012 Nov 1;49(1-3):81-94.

Hadi M*, Samarghandi MR, Azizian SA, Samadi MT, Shokoohi RE, Rahmani AL. Using Thomas model to evaluate dye removal from aqueous solutions in fixed-bed columns of activated carbon. *Journal of Water and wastewater*. 2011 Jan 1;22(77):23-34.

McKay G, **Hadi M***, Samadi MT, Rahmani AR, Aminabad MS, Nazemi F. Adsorption of reactive dye from aqueous solutions by compost. *Desalination and water treatment*. 2011 Apr 1;28(1-3):164-73.

Hadi M*, Shokoohi R, Ebrahimzadeh Namvar AM, Karimi M, Solaimany Aminabad M. Antibiotic resistance of isolated bacteria from urban and hospital wastewaters in Hamadan City. *Iranian Journal of Health and Environment*. 2011 May 15;4(1):105-14.

Hadi M*, Samarghandi MR, McKay G. Simplified fixed bed design models for the adsorption of acid dyes on novel pine cone derived activated carbon. *Water, Air, & Soil Pollution*. 2011 Jun 1;218(1-4):197-212.

Hadi M*, Samarghandi MR, McKay G. Equilibrium two-parameter isotherms of acid dyes sorption by activated carbons: study of residual errors. *Chemical Engineering Journal*. 2010 Jun 1;160(2):408-16.

Samadi MT, Saghi MH, Ghadiri K, **Hadi M**, Beikmohammadi M. Performance of Simple Nano Zeolite Y and Modified Nano Zeolite Y in Phosphor Removal from Aqueous Solutions. *Iranian Journal of Health and Environment*. 2010 Apr 15;3(1):27-36.

Shokoohi R, Saghi M, Ghafari H, **Hadi M**. Biosorption of iron from aqueous solution by dried biomass of activated sludge. *Journal of Environmental Health Science & Engineering*. 2009;6(2):107-14.

Samarghandi MR, **Hadi M***, Moayedi S, Barjasteh Askari F. Two-parameter isotherms of methyl orange sorption by pinecone derived activated carbon. 2009; 6(4): 285-294.

Water Stability Analysis

Hadi, M. *, Aboosaedi, Z. and Pasalari, H., 2019. Corrosion or scaling tendency and trend for water resources in rural areas of Kashan, Iran. *Iranian Journal of Health and Environment*, 12(1), pp.113-128.

Nabizadeh Nodehi R, Mesdaghinia AR, Nasser S, **Hadi M***, Soleimani H, Bahmani P. Analysis of Water Corrosion Tendency in Water Supply System Using Qualitative Indices and Calcium Carbonate Precipitation Potential index. *Iranian Journal of Health and Environment*. 2017 Mar 15;9(4):457-70.

Mesdaghinia A, Nabizadeh Nodehi R, Nasser S, Imran SA, Samadi MT, **Hadi M*** Potential for iron release in drinking water distribution system: a case study of Hamedan city, Iran. *Desalination and Water Treatment*. 2016 Jul 2;57(31):14461-72.

Scientometric

Hadi M*, Mesdaghinia A, Nasser S, Irvani E. A bibliometric analysis on scientific productions of the Institute of Environmental Research of Tehran University of Medical Sciences. *Iranian Journal of Health and Environment*.: *Iranian Journal of Health and Environment*, 2021

Mesdaghinia A, Younesian M, Nasser S, Nodehi RN, **Hadi M***. A Bibliometric and Trend Analysis on the Water-Related Risk Assessment Studies for *Cryptosporidium* Pathogen. Iranian journal of parasitology. 2015 Jul;10(3):338.

Mesdaghinia A, Younesian M, Nasser S, Nodehi RN, **Hadi M***. Analysis of the microbial risk assessment studies from 1973 to 2015: a bibliometric case study. Scientometrics. 2015 Oct 1;105(1):691-707.

Mesdaghinia A, Mahvi AH, Nasser S, Nodehi RN, **Hadi M***. A bibliometric analysis on the solid waste-related research from 1982 to 2013 in Iran. International Journal of Recycling of Organic Waste in Agriculture. 2015 Sep 1;4(3):185-95.

BOOK CHAPTER:

Ardalan, A., Rad, M.K. and **Hadi, M.**, 2019. Urban Water Issues in the Megacity of Tehran. In Urban Drought (pp. 263-288). Springer, Singapore.

TRAINING COURSE CERTIFICATES

- Short course for decentralised water supply and sanitation-IHE Delft Institute for Water Education – 4 July 2022/ 22 July **2022** – The Netherlands
- Regional training workshop on sanitation safety planning (SSP)-WHO regional office for Eastern Mediterranean-Jordan 24-27 July **2017**

INTERNATIONAL CONFERENCE ATTENDING

Analysis of water treatment performance for Giardia parasite by Quantitative Microbial Risk Assessment, 9th IWA Young Water Professionals, Hungary – Budapest, 2017 (**Oral presentation**)

COURSE TEACHING EXPERIENCE

2018-present	R programming language Ph.D students, Tehran University of Medical Sciences
2018-present	Water Quality Management M.Sc students, Tehran University of Medical Sciences
2017- present	Modeling techniques in Environmental Health Engineering Ph.D students, Kerman University of Medical Sciences
2016-present	Advanced Technologies for Water Treatment Ph.D students, Tehran University of Medical Sciences
2010-2012	Engineering methods for vector control M.Sc. students, Kurdistan University of Medical Sciences
2010-2012	Environmental Chemistry M.Sc. students, Kurdistan University of Medical Sciences
2010-2012	Processes for Water and Wastewater Treatment M.Sc. students, Kurdistan University of Medical Sciences
2010-2012	Water treatment

2010-2012 M.Sc. students, Kurdistan University of Medical Sciences
Hydraulic laboratory
M.Sc. students, Kurdistan University of Medical Sciences

Lectured Workshops

2023 **Programming in R**
IER, Tehran University of Medical Sciences

2023 **Sanitation Safety Planning**
IER, Tehran University of Medical Sciences

2023 **Water Safety Plan and application of QMRA in water treatment plants**
IER, Tehran University of Medical Sciences

2019 **R Programming Language (intermediate level)**
IER, Tehran University of Medical Sciences

2017 **Sanitation/Wastewater Reuse Safety Planning**
IER, Tehran University of Medical Sciences, Ministry of Health

2016 **R Programming Language (intermediate level)**
IER, Tehran University of Medical Sciences

2016 **Design of experiments (How to work with Design Expert software)**
IER, Tehran University of Medical Sciences

2016 **Principles of sustainable remediation bio-degradable pollutants in soils**
IER, Tehran University of Medical Sciences

2015 **R Programming Language (elementary level)**
IER, Tehran University of Medical Sciences

2010 **Environmental pollution control for pipelines of petroleum products**
For operators of the National Petroleum Company

2009 **Working with EndNote**
For MSc students, Hamedan University of Medical Sciences

2008 **Principals of scientific writing**
For MSc students, Hamedan University of Medical Sciences

2008 **Principals of scientific research**
For MSc students, Hamedan University of Medical Sciences

SCIENTIFIC WORKSHOPS TRAINING CERTIFICATES

2017 **Regional Training workshop on Sanitation/Wastewater Reuse Safety Planning**
WHO, Amman, Jordan

2016 **Systematic Review & Meta-Analysis (2)**
IER, Tehran University of Medical Sciences

2016 **Questionnaire design**
IER, Tehran University of Medical Sciences

2015 **Workshop on climate change**
IER, Tehran University of Medical Sciences

2015 **Molecular techniques: PCR and DNA and RNA extraction**
Tehran University of Medical Sciences

2015 **Elsevier workshop on "How to write an international article"**

	Tehran University of Medical Sciences
2014	Computing for data analysis
	Online workshop by John-Hopkins University
2014	Remote Sensing and Arc GIS
	IER, Tehran University of Medical Sciences
2013	Springer workshop for scientific writing
	Tehran University of Medical Sciences
2013	Systematic Review & Meta-Analysis (1)
	IER, Tehran University of Medical Sciences
2011	Developing an educational program
	Kurdistan University of Medical Sciences
2009	Working with End-Note
	Hamadan University of Medical Sciences
2009	Research Methodology
	Hamadan University of Medical Sciences

AWARDS AND HONORS

- 2019** Best manuscript (Optimizing the performance of conventional water treatment system using quantitative microbial risk assessment, Tehran, Iran) selected by the Iranian Association of Environmental Health (IAEH), 11th Festival on Environmental Health
- 2017** Best Ph.D. thesis (Quantitative Microbial Risk Assessment of *Cryptosporidium* and *Giardia* in Drinking Water produced from Jalaliyeh and Tehranpars Water Treatment Plants in Tehran, Iran) selected by Iranian Association of Environmental Health (IAEH), 8th Festival on Environmental Health
- 2009** The selected best researcher of the Faculty of Health of the Hamedan University of Medical Sciences

PI OR CO-PI IN RESEARCH PROJECTS

- 2023 **Investigating the amount of nitrate and nitrite in drinking water and food and its relationship with chronic diseases in the Persian cohort population of Dehgolan, Kurdistan, Iran**
Co-Principal Investigator, Kurdistan University of Medical Sciences, Iran
- 2021 **Design a web-based tool for the collection of social mixing data and the feasibility of its use in a pilot scale**
Principal Investigator, IER, Tehran University of Medical Sciences, Iran
- 2021 **Quantification of SARS-CoV-2 and the performance of wastewater treatment plants in Tehran**
Principal Investigator, IER, Tehran University of Medical Sciences, Iran

- 2021 **Analysis of the relationship between the level of Water, Sanitation and Hygiene (WASH) services and neonatal and under-five mortalities at an international scale**
Principal Investigator, IER, Tehran University of Medical Sciences
- 2020 **The presence of SARS-CoV-2 in raw and treated wastewater in 3 cities of Iran: Tehran, Qom and Anzali during the coronavirus disease 2019 (COVID-19) outbreak**
Principal Investigator, IER, Tehran University of Medical Sciences
- 2020 **Developing an interactive dashboard for visualising, analysing and making a report for global data on COVID-19**
Principal Investigator, IER, Tehran University of Medical Sciences
- 2019 **Estimation the burden of disease attributed to enteroviruses in raw vegetables produces irrigated with treated wastewater in the south of Tehran**
Adviser of Ph.D thesis, IER, Tehran University of Medical Sciences
- 2019 **Forecasting the amount of municipal solid waste generation using artificial neural network and zoning the predicted values using geographical information system (GIS) for Tehran metropolitan area by regions**
Supervisor of M.Sc. thesis, IER, Tehran University of Medical Sciences
- 2019 **Microbiological risk assessment and estimation of the burden of diarrheal diseases in Gaza Strip's water supply system, Palestine**
Adviser of Ph.D thesis, IER, Tehran University of Medical Sciences
- 2018 **Identify hazard events in the drinking water supply system of Faramarzan area (Bastak) based on WHO's Water Safety Plan**
Adviser of M.Sc. thesis, Tehran University of Medical Sciences
- 2018 **Piloting the In-depth Reporting on Safely Managed Drinking Water and Sanitation Services**
WHO Regional Office/CEHA, Tehran University of Medical Sciences
- 2018 **An ecological analysis of the relationship between the number and type of industries and some socio-economic components with the incidence of cancer in Iran**
Principal Investigator, Tehran University of Medical Sciences
- 2017 **Identification of isolated heterotrophic plate count bacteria in drinking water treated by household treatment systems using DNA sequencing analysis**
Co-Principal Investigator, National Institute for Medical Research Development (NIMAD)
- 2016 **Quantitative Microbial Risk Assessment of Cryptosporidium and Giardia in Drinking Water Produced from Jalaliyeh and Tehranpars Water Treatment Plants in Tehran, Iran**
Principal Investigator, IER, Tehran University of Medical Sciences; Tehran Water and Wastewater Company
- 2015 **Estimation of Water poverty index in provincial scale and for Iran**
Principal Investigator, IER, Tehran University of Medical Sciences

- 2015 **Application Monte Carlo simulations to reduce the uncertainty of corrosion indices for water corrosion tendency assessment**
Principal Investigator, IER, Tehran University of Medical Sciences
- 2015 **Forecasting Air Quality Index (AQI) in Kermanshah using artificial neural network modeling**
Co-Principal Investigator , IER, Tehran University of Medical Sciences, Iran
- 2015 **Estimation of Per-Capita Wastewater Parameters and Treatment Plants Performance in Tehran**
Co-Principal Investigator, IER, Tehran University of Medical Sciences, Iran
- 2014 **The formulation of a national program and adaptation of quality and safety of water and water born diseases with climate change**
Co-Principal Investigator, IER, Tehran University of Medical Sciences, Iran
- 2014 **Predicting the influent water properties of water treatment plant in Sanandaj using artificial neural network and auto-regressive moving average models**
Co-Principal Investigator, Kurdistan University of Medical Sciences, Iran
- 2013 **Chromium removal from aqueous solutions in fixed-bed column by natural and modified sawdust**
Co-Principal Investigator, Zabol University, Iran
- 2013 **The fixed-bed column to remove manganese from the water using sand plains of Sistan**
Co-Principal Investigator, Zabol University, Iran
- 2012 **Development software for water quality and corrosion analyzing and correlation analysis of corrosion indices with non-specific indices (TOC, DOC, UV254 and SUVA) and iron in the water distribution network**
Principal Investigator, Kurdistan University of Medical Sciences, Iran
- 2012 **Comparing the performance of nanoparticles of titanium dioxide (TiO₂) and zinc oxide (ZnO) in photo-catalytic removal of cyanide (-CN) and bivalent lead from the aquatic environment in the presence of UV: equilibrium and kinetics study**
Co-Principal Investigator, Kurdistan University of Medical Sciences, Iran
- 2012 **Application of UV irradiation, hydrogen peroxide and titanium dioxide (UV/H₂O₂/TiO₂) for the oxidation of organic compounds in hospital waste**
Principal Investigator, Kurdistan University of Medical Sciences, Iran
- 2011 **Analysis of corrosion tendency in the water distribution system in Hamadan using calcium carbonate precipitation potential index**
Principal Investigator, Hamadan University of Medical Sciences, Iran
- 2011 **Antibiotic resistance of Pseudomonas aeruginosa, Klebsiella pneumonia and Escherichia coli in hospital wastewaters of Hamedan**
Principal Investigator, Hamadan University of Medical Sciences, Iran
- 2010 **Kinetic models of dye removal from aqueous solutions using Pine Cone and compost-derived activated carbons**

Supervising and Advising Experiences

Title	Student	Role	Program	Status
Forecasting the amount of urban solid waste in Tehran by region, using artificial neural network tools and zoning the predicted values using geographical information system.	Boshra Ojaghi	Supervisor	M.Sc.	completed
Characterization of hazardous events in the water supply system of Faramarzan (Bastak) region using WHO's WSP principals and recommendations for risk management approaches	Esmail Harasi	Adviser	M.Sc.	completed
Analysing the level of WASH services in rural areas of Swadkoh, Mazandaran	Maryam Lasemi	Supervisor	M.Sc.	completed
Developing statistical models for predicting quality parameters of underground water in Kermanshah	Parisa Dargahi	Supervisor	M.Sc.	completed
Microbial Risk Assessment to Estimate the Burden of Communicable Diseases of Drinking Water in Gaza Strip, Palestine	Samer Abouzer	Adviser	Ph.D.	completed
A feasibility study to develop models for the prediction of car exhaust quality parameters (CO, HC, CO ₂ , O ₂) using technical control data of light cars in Tehran.	Mohammad Raeesi	Supervisor	M.Sc.	completed
Designing a consumer water footprint questionnaire and the feasibility of using it to estimate consumer water footprint in Iran.	Rezvaneh Barzegar	Supervisor	M.Sc.	In progress
Spatial-temporal variations of ambient air O ₃ and NO ₂ concentrations in Tehran and effects of meteorological parameters on their concentration over a period of 2017 to 2021	Moazam Rezaee	Adviser	M.Sc.	In progress
A systematic review of the investigation of optimal operating conditions of the reverse osmosis process in nitrate removal from drinking water	Fateme Zirrahi	Adviser	M.Sc.	In progress
Investigating the presence of detergents in the drinking water resources of Hamedan city and investigating the risk in correcting Shahid Beheshti House in Hamedan	Seyd Amirhossain Zaolfagharifar	Adviser	Ph.D.	In progress
Arsenic intake assessment through drinking water and most used vegetables among a population of	Leila Kazemizad	Adviser	Ph.D.	In progress

adults in the city of Qom and investigation of its relationship to arsenic urinary concentration and carcinogenic risk estimation in different scenarios

Evaluation of the disease burden attributed to enteroviruses in raw edible vegetables irrigated with wastewater from the South Tehran treatment plant due to different exposure scenarios.	Seyd Yaser Hashemi	Adviser	Ph.D.	completed
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Predicting groundwater quality parameters using statistical models in Kashan province in Iran	Aysan Morovati Razmabad	Supervisor	M.Sc.	In progress
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LABORATORY ANALYTICAL SKILLS

- Protozoan parasites in water (1623.1 EPA Method)
- Commonly conducted water chemical quality tests
- Commonly conducted water microbial quality tests (culturing techniques and Kits)
- Commonly conducted wastewater quality characteristics tests (including BOD, COD,...)
- TOC/DOC measurement using a TOC analyser
- PCR technique (identification of HPC bacterial species in drinking water)

EPIDEMIOLOGICAL ANALYSIS SKILLS

- Measuring Disease Occurrence (Incidence, Prevalence, Odds)
- Measuring Associations Between Exposures and Outcomes (Cohort Study, Cross-Sectional Studies: Point Prevalence Rate Ratio, Case-Control Studies, Strength of Associations)
- Understanding Lack of Validity: Bias (Selection Bias, Information Bias)
- Identifying Noncausal Associations (Assessing the Presence of Confounding)
- Assessing Heterogeneity of Effects (Interaction)

STATISTICAL AND EPIDEMIOLOGICAL ANALYSIS SKILLS

- **stats** (t.test, wilcox.test, prop.test, chisq.test, fisher.test, kruskal.test,mcnemar.test, lm, friedman.test, glm, cor, cor.test, manova),
- **stats** (glm): Simple logistic regression, Factorial logistic regression, Multiple logistic regression,
- **lavaan** (confirmatory factor analysis, structural equation modeling and latent growth curve models)
- **stats** (aov): Analysis of covariance,
- **car**(Anova),
- **lme4**(glmer): linear and generalized linear mixed-effects models, Repeated measures logistic regression,
- **MASS**(polr): Ordered logistic regression,
- **MASS**(lda): Discriminant analysis,
- **CCA**(cc): Canonical correlation,
- **psych**(fa): Factor analysis,
- **keras, reticulate, tensorflow**: Machine learning

- **Brodgar** GUI (statistical modelling)
- **epicalc**: Epidemiological calculator

SOFTWARE SKILLS

- **Rstudio**
- **Shiny** (We-based application development)
- **Brodgar** GUI (statistical modelling with R)
- **Amos** (structural equation modeling)
- **QMRAspot** (a tool for Quantitative Microbial Risk Assessment)
- **Oracle Crystal Ball** (risk assessment stochastic modelling)
- **QGIS** (*Organics* plugin, *ENVIFATE* plugin)
- **SPSS** (statistical data analysis)
- **Origin Pro** (statistical data analysis)
- **Minitab** (statistical data analysis)
- **VOSviewer** (for visualizing bibliometric results)

DEVELOPED WEB-BASED APP (using R Shiny+ HTML + JavaScript + CSS)

- **COVID-19 REPORTER**: A shiny app for visualizing and modelling COVID-19 data available at [Coronavirus \(shinyapps.io\)](https://shinyapps.io/coronavirus/).
- **SOCIAL MIXING DATA COLLECTOR**: A Shiny app for the collection of social mixing data using standard diary forms for analyzing population contacts in different age categories and places. (<https://github.com/mehdihadi/social-mixing-data-collector>)
- **Excess Mortality APP**: One app for estimation of excess mortality for COVID-19 and other environmental or natural crises (adapted for Iran)
- **MCQ exam**: A web-based tool for making and taking MCQs exams. It is a flexible app that teachers can use to set a schedule for MCQs exam. Each exam will be marked automatically and the final marks for all students will be sent to the teacher's phone number by SMS. (<https://github.com/mehdihadi/MCQs-app>)
- **Iran's groundwater dashboard (irGWater)**: irGWater is a web-based application for visualizing the basic information of groundwater resources (Wells) of Iran available at [irGWater \(shinyapps.io\)](https://shinyapps.io/irGWater/).
- **Tracking faculty dissertations**: a web-based application for monitoring the progress of TUMS Faculty of Health student dissertations. As each academic member has a maximum capacity as a supervisor, this tool visualizes the information of each faculty member. (<https://github.com/mehdihadi/thesis>)

OTHER APPLICATION DEVELOPMENT (using Visual Basic)

- **WATER CORROSION INDEX CALCULATOR**: A VB windows-based software developed to calculate 9 important water corrosion indices: Langelier, Ryznar, Pockorius, Driving force, Momentary excess, Saturation level, Larson-Scold and Aggressiveness and CCPP indices.

- **MPN CALCULATOR:** A VB windows-based software for the estimation of coliform densities based on the MPN method.