

Raymundo Rangel Parra



ABOUT ME

As an environmental chemical engineer with a PhD in hydrology and water management, I have more than 11 years of experience working in water resources research and chemical testing in Mexico and Spain.

I am passionate about the environment, water and its relation with the society lifestyle. I seek to collaborate in the multidimensional objective of the water usage sustainability.

HARD SKILLS

- Statistics and Geostatistics.
- Laboratory chemical testing.
- Hydrological data measurement and analysis in-situ.
- Hydrologic and water resources modelling software.
- Water sampling.
- Data mining, analysis and management.
- Programming in **R** and **Python** languages.
- GIS Software (QGIS, ArcGIS).
- Processing of climate change data (Cordex project).
- Remote sensing data analysis.
- Advanced Excel.
- Life cycle analysis for products.
- Teaching and training personal.

SOFT SKILLS

- Cheerful and friendly
- Efficient
- Willingness to learn
- Can-do mentality
- Respectful
- Open-mindedness
- Adaptability
- Effective communication
- Team and independent work

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EDUCATION

PhD, in hydrology and water resources modelling (Cum Laude mention)

Universidad de Santiago de Compostela

Oct-2015 – Jul-2019, Lugo Spain.

Thesis: Determination of the amount of water resources for management at basin level by modelling.

Master of Science in environmental systems, score: 88.15/100

Instituto Tecnológico y de Estudios Superiores de Monterrey

Aug-2009 – Jun-2011, Monterrey, Mexico

Degree project: Analysis model for domestic water management.

Bachelor's in chemical engineering, score: 85.1/100

Instituto Tecnológico de Mexicali

Aug-2002 – Jun-2007, Mexicali, Mexico

Degree project: Product designed through eco-design techniques.

WORK EXPERIENCE

Environmental Risk Modeller

Company: RED Risk Engineering + Development, Pavia, LO, Italy.

May-2021 – To present.

Activities:

- Modelling environmental risk.
- Supervising/updating real-time precipitation model.
- Creating GIS maps/data as input for hydrological simulations.
- Generating rainfall frequency statistical studies/analysis.
- Writing technical reports for risk analysis projects.

Advisor in hydrology and water resources, freelancer

Company: UpWork, online platform.

July-2020 – Jan-2021.

Activities:

- Advising diverse cases of hydrology and water resources projects.
- Giving support for interpreting technical results.
- Generating GIS maps with calculated hydrological data.
- Carrying out calculation to generate data-time series of meteorological variables.

Laboratory Specialist for water and food samples

Company: Laboratorio Diseño y Asesoría Ambiental, Mexicali, Mexico.

Sep-2019 – Dec-2019.

Activities:

- Carrying out chemical analysis by spectrophotometry, distillation, mass balance, chemical digestion, neutralization, titration.
- Calibrating and tested laboratory equipment.
- Reporting analysis results.
- Giving customer service and advice for analytical results.
- Collecting water samples in-situ.

LANGUAGES

Spanish: Mother tongue
English: Fully professional (C1, certificate)
Italian: intermediate (B1-B2)

HOBBIES AND INTERESTS

Playing the guitar
Recording and editing music
Practicing mixed martial arts
Motorcycles and mechanics
Fitness, nutrition and cooking

PROFESSIONAL REFERENCES

Jorge Dafonte
Department of Agroforestry Engineering
at USC, jorge.dafonte@usc.es

Martín H. Bremer
Director at Strategic Solutions and
Sustainable Innovations,
docbremer@gmail.com

Juan A. Molina
Department of Agroforestry Engineering
at USC,
juanalberto.molina.valero@usc.es

Amalia Medina
Department of Research, ITM,
amaliamedina@itmexicali.edu.mx

Lydia Toscano
Department of Chemical Engineering,
ITM,
lydiatos@hotmail.com

Luis Enrique Galindo
Regional manager at ABC Analitic
luis.galindo@intertek.com

Researcher and laboratory supervisor in hydrology

Company: Universidad de Santiago de Compostela, Lugo, Spain.
Oct-2015 – Jul-2019.

Activities:

- Performing hydrologic and water resources modelling at basin level for research purposes.
- Measuring hydrometric data and water quality rivers, lakes and groundwater.
- Supporting students in laboratory.
- Measuring geophysical prospecting data for groundwater.
- Carrying out data mining and hydrological calculations for basins in Mexico and Spain.
- Analyzing of meteorological data, statistics and Geostatistics calculations.
- Helping in planification for projects with other associated research centers.

Safety, health and environment supervisor

Company: IEnova-Ecogas, Mexicali, B.C., Mexico.
May-2015 – Oct-2015.

Activities:

- Supervising and work-activities under the working safety standards.
- Reporting activities weekly to department manager.
- Managing feedback with external partners.
- Proposing new risk evaluation methods.
- Training new workers in security rules.

Environmental advisor and chemical analysis supervisor

Company: ABC Analitic-INAPRAMEX, Mexicali, B.C., Mexico
Jul-2011 – Dec-2014,

Activities:

- Validating water quality data from in situ samples.
- Carrying out chemical analysis by spectrophotometry, distillation, mass balance, chemical digestion, neutralization, titration.
- Giving customer support for environmental legislation and reporting.
- Coordinating meetings and agreements between laboratories and governmental stakeholders.
- Collecting in situ samples from environmental water, wastewater, food and gas emissions.
- Calibrating and tested automatic laboratories for water quality monitoring in rivers and lakes.
- Keeping the technicians and engineers updated in ISO17025 auditory.
- Planning the annual campaign for environmental monitoring in water bodies in the North-West of Mexico.

Laboratory and research assistant

Company: Tecnológico de Monterrey (ITESM), Monterrey, Mexico.
Aug-2009 – May-2011.

Activities:

- Setting up new equipment and instrumentation for environmental analysis.
- Supporting field work in the geophysics and water monitoring studies.
- Carrying out chemical testing for water samples of water treatment plant.
- Designing research projects as rain harvesting systems, domestic water reuse systems, t, biogas and solar oven.

Environmental adviser and chemical analysis engineer

Company: Bufete de Ingeniería Ecológica Industrial, Mexicali, B.C., Mexico.

Nov-2007 – Feb-2009.

Activities:

- Carrying out environmental sampling in water, soil, waste, gas emissions.
- Performing health and safety studies and reports for local industry.
- Registering chemical samples results and tracking.
- Giving customer support and advice to clients for environmental technical solution.

PUBLICATIONS AS MAIN AUTHOR

Simulation of the supply guarantee for the water demands in Mexicali, B.C.

Raymundo Rangel-Parra, Xan X. Neira, Jorge Dafonte.

Tecnología y ciencias del agua, 2022, 13(1), DOI: Pending. (Accepted)

Estimation of water budget and management using simulation models: case of the Cabe river basin

Raymundo Rangel-Parra, Xan X. Neira, Jorge Dafonte.

Tecnología y ciencias del agua, 2022, 13(1), DOI: Pending. (Accepted))

PUBLICATIONS IN CONGRESSES

Efectos del cambio climatico en los recursos hídricos del embalse de vilasouto (lugo).

Raymundo Rangel, Xan X. Neira, Jorge Dafonte.

X Congresso Ibérico de Gestão y Planificación del Agua. Sep. 6th, 2018. Coimbra, Portugal.

El conflicto por el agua en mexicali (baja california, méxico): por la gestión sostenible de los recursos hídricos.

Raymundo Rangel, Xan X. Neira, Jorge Dafonte.

X Congresso Ibérico de Gestão y Planificación del Agua. Sep. 6th, 2018. Coimbra, Portugal.

Crisis en la gestion del agua en la cuenca transfronteriza México-EUA, Río Colorado; Situación y análisis DAFO para la parte Mexicana.

Raymundo Rangel, Xan X. Neira, Jorge Dafonte.

O rural agroecológico. June, 2017. Lugo, Spain.

Uso sostenible del agua en escenarios extremos de México y España: Riego ecológico y optimización del PIB por cada metro cubico de agua utilizado en la agricultura.

Raymundo Rangel, Xan X. Neira, Jorge Dafonte.

XII Congreso SEAE. Sep. 21st, 2016. Lugo, Spain.

Trainings for the hydrological science

Mapping and Monitoring Lakes and Reservoirs with Satellite Observations.

NASA-Applied Remote Sensing (ARSET)
3 sessions taken in Feb 2021

Overview of Remote Sensing Data for River Basin Monitoring

NASA-Applied Remote Sensing (ARSET)
4 sessions taken in Mar 2019

Analysys and systems modeling of water resources with AQUATOOL software

Universitat Politècnica de València (UPV)
5 sessions taken in Jul 2018

Water resources management in extremely arid conditions

Universidad de Santiago de Compostela (USC) and the An-Najah National University (Palestine)
1 session taken in May 2017

Visual-Balan and GIS-Balan for hydrological modelling software

Universidad da Coruña (UDC)
6 sessions taken in Jun 2017

Water Evaluation And Planning System WEAP

Stockholm Environment Institute
3 session taken in Mar 2016

Programming language in R and Python

Universidad de Santiago de Compostela (USC)
20 sessions taken in Sep 2016

Advanced Excel for engineering

Tecnológico de Monterrey (ITESM)
15 sessions taken in Feb 2011

ArcGIS and Q-GIS

Tecnológico de Monterrey (ITESM)
40 sessions taken in Oct 2010

Relevant achievements in my professional career

- Determination of the amount of water resources for management at basin level by modelling in Mexico and Spain.
- Improved the ensemble of models for hydrological and water resources modelling in the hydrological plan of Galicia, Spain.
- Developed R-Studio script-codes for spatial interpolation for meteorological variables and for EuroCordex maps data extraction.
- Contributed with a research about Colorado River in order to help to clarify the uncertainty of water resources in Baja California, Mexico.
- Published scientific articles as main author and participation in international congresses.
- Developed a safety regulation for working conditions in extreme high temperatures in North-West, Mexico.
- Received the environmental expert certification from the Mexican water authority.
- Got certification for water sampling and testing under the ISO-17025 standards.
- Designed model of analysis to reduce 30-60% of domestic water consumption of urban water in Monterrey, Mexico.
- Built a device for harvesting rainwater and solar oven for experimentation.