



Lizeth Cardoza-Pedroza

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I am a detail-orientated person with passion about Environmental Engineering and Water. I am deeply interested in the mechanisms and pathways that microplastics have, to get into the environment and then to reach the groundwater level. At the same time, I have a passion for science communication and teaching, especially interested on the equal access to information from Latin America.

Education

MSc Eng. Water, Waste and Environmental Engineering GPA 3.53 | University College Dublin (UCD) 2021-2022 | *Global Excellence Scholarship* 2021-2022

BSc Nanotechnology Engineering GPA 9.68/10.00 | Instituto Tecnológico y de Estudios Superiores de Occidente (ITESO) 2015-2019 | *Fundación Telmex Merit Scholarship for Academic Excellence* 2017-2019

Teaching and Science Communication Experience

We live in a (micro) plastic world | September 2022- October 2022 | Science Club International

- Mentorship to students from 17 to 25 years of age at the start of their science careers.
- Design of syllabus and program of a monthly science club talking about microplastics in water.
Podcast Host | October 2020- January 2021 | Nanopod | Mexico
- Host of podcast episodes, script writing and design of promotional content of the 24th most listened-to science podcast in Mexico in 2020.

Research Experience

Understanding of Transport Pathways of Microplastics | September 2021- August 2022

University College Dublin | Dublin, Ireland

Supervisor: Dr John O'Sullivan

- Assess the mobility of microplastics without the presence of a macropore in the soil matrix.
- Replicate an earthworm burrow in a soil column.
- Evaluate the difference in the vertical movement of different-sized MPs in soil columns with the presence of a simulated macropore.
- Compare the movement generated by different drop sizes in three different size categories of microplastics.
- Compare the difference in the vertical transportation between two microplastic polymers with similar sizes.

Modified organic materials for environmental purposes | January 2019- December 2019

Universidad de Guadalajara | Zapopan, Mexico

Supervisor: Dr. Ricardo Manriquez

- Extraction and purification of the polysaccharide of *Opuntia ficus Indica*.
- Characterisation of the polysaccharide by HPLC techniques.
- Modification of starch with zwitterionic compounds as a model of *Opuntia ficus Indica* polysaccharide.
- Characterisation of the modified materials by FTIR and ninhydrin tests.
- Participation in the Nuclear Magnetic Resonance (NMR) pre-symposium 2019

Green Synthesis of silver nanoparticles | Summer 2018

CICESE | Baja California, Mexico

Supervisor: Dr. Ernestina Castro

- Production of *Brassica Nigra* and *Sinapis Alba* seed extract.
- Developing a protocol for the AgNps synthesis with the seeds extract as a component for a bottom-up approach.
- Measuring and comparing the antibiotic effect of the Green synthesised Np's with Np's synthesised with conventional methods.

Work Experience

Geographical Information System Technician | December 2022-Present

Mallon Technology | Dublin, Ireland

Currently working on projects with the Irish Department of Agriculture, Food and the Marine related to land use and ecology programs.

- Data capture of spatial and attribute information
- Interpretation of high-resolution orthophotography and pan-sharpened satellite imagery to determine variations in land cover.

Technical Assistant | August 2018- February 2019

Un Salto de Vida | El Salto, Mexico

Determined that the water samples did not have heavy metals. Additionally, it was assessed that E.Coli levels were above the ones established by the Mexican norm.

- Assisting with the development of community laboratory programs.
- Analysing tap water from rural communities to determine the effectiveness of previously installed filters.

Volunteering Experience

Education Assistant | March 2023-Present

Dublin Zoo | Dublin, Ireland

- Currently working on weekend activities to promote the zoo conservation education program.

Resident Assistant | August 2021-September 2022

YWCA Ireland | Dublin, Ireland

- Contribute to and participate in YWCA Ireland's national programmes and activities focused on gender equality, human rights, and women's leadership.
- Participation in the design and development of integration activities.

Environmental Justice Volunteer | August 2015- December 2019

Centro Universitario Ignaciano ITESO | Zapopan, Mexico

- Organization of educational activities with environmental topics.
- Creation of communication strategies outside of the university.
- Participation in the inter-volunteering group.
- Peer support to new students.

Certificates

- Ecosystem Services: A Method for Sustainable Development. *University of Geneva* (2023)
- Creating Materials for Online and Offline Classes *AMCO* (2021)
- Certification Python Programming for Everybody. *University of Michigan* (2020)
- Exploring the Optics World. *Clubes de Ciencia Mexico* (2017)

Technical skills

- SEM (48 hours)
- AFM (40 hours)
- XPS (50 hours)
- Optical microscope
- Sputtering
- FTIR
- UV-VIS spectroscopy
- Good laboratory practices
- Nanoparticle Synthesis

Programming skills

- Matlab (medium)
- Python (medium)

Software Management

- Microsoft Office
- Gsuit
- Casa XPS
- Aalyzer
- WEKA
- ArcGis

Soft skills

- Problem-Solving
- Initiative-taking
- Leadership
- Critical thinking
- Teamwork
- Communication

Languages

- Spanish- Native
- English- C1 IELTS