

# Javier Elío

November 2019

## Personal information

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## Career Summary

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I am a Mining Engineer, with an MSc in Environmental Research, Modelling and Risk Assessment, and a PhD in Environmental Sciences. For the last years, I have been working on radon mapping at the Geology Department at Trinity College Dublin, although I have also experience in monitoring geological storage of  $CO_2$ , and in geochemical characterization of contaminated sites.

My research interests are:

- Environmental risk assessment
- Radon mapping
- Radon measurements in air, soil, and water
- Natural radioactivity, Natural Occurrence Radioactive Materials (NORM)
- Statistics, spatial data analysis, and geostatistics (R language)
- Geographic information systems

## Education

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2013	<b>Ph.D. in Environmental Science</b> , Technical University of Madrid, Spain
2009	<b>M.Sc. in Environmental Research, Modelling and Risk Assessment</b> , Technical University of Madrid, Spain
2005	<b>M.Eng. in Mining Engineering</b> , Technical University of Madrid, Spain

## Experience

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2019	<b>Assistant Professor</b> , Western Norway University of Applied Sciences, Norway
2018	<b>Visiting Research Assistant</b> , Trinity College Dublin, Ireland
2016/18	<b>Postdoctoral Research Fellow</b> , Trinity College Dublin, Ireland
2014	<b>Research Assistant</b> , Technical University of Madrid, Spain
2009/13	<b>PhD Candidate</b> , Ciudad de la Energía Foundation, Spain
2009	<b>Technician</b> , Technical University of Madrid, Spain
2007/09	<b>M.Sc. Research Assistant</b> , Technical University of Madrid, Spain
2005/07	<b>Tunnel Engineer</b> , Obrascón Huarte Lain S.A., Spain

## Professional memberships

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- 2019 - **Member of the Research Group “Applied Marine Microbiology”**, Western present Norway University of Applied Sciences, Haugesund (Norway)
- 2017 - **Member of the European Geogenic Radon Map expert group**, EU Joint Re- present search Centre, Ispra (Italy)
- 2016 - **Member of the European Radon Association**, European Radon Association present (ERA), Europe

## Professional Services

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- 2018/19 **International Atomic Energy Agency (IAEA)**, Expert missions on Radon Map- ping and National Radon Action Plans: Peru (August 2018), Cyprus (October 2018), Lithuania (July 2019).
- 2018 **European Commission, Joint Research Centre (JRC)**, Invite as an expert to the meeting -Working Group Meeting on Indoor Radon Dose- (May 2018, Ispra, Italy).

## Funding projects

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### *Awarded*

- 2017 **Geological Survey of Ireland (GSI) - Short call**, Title: An All-Ireland Geogenic Indoor Radon Map, Award amount: €24,988, duration: 8 months, Trinity College Dublin, Dublin (Ireland)
- 2015 **Irish Research Council (IRC) - Enterprise Partnership Scheme Fellowship 2015**, Title: Radon Monitoring and Hazard Prediction in Ireland, Award amount: €91,790, duration: 24 months, Trinity College Dublin, Dublin (Ireland)

### *Under assessment*

- 2019 **Norwegian Research Council - Fri prosjektstøtte (FRIPRO): Young Re- search Talents**, Duration: 4 years, Western Norway University of Applied Sciences, Haugesund (Norway)
- 2019 **Norwegian Research Council - Bedre helse og livskvalitet (BEDREHELSE)**, Duration: 4 years, Western Norway University of Applied Sciences, Haugesund (Norway)
- 2019 **NordForsk interdisciplinary research projects**, Duration: 4 years, Western Nor- way University of Applied Sciences, Haugesund (Norway)

### *Rejected*

- 2018 **Marie Skłodowska-Curie Individual Fellowships**, Duration: 4 years, total score 79.40, Western Norway University of Applied Sciences, Haugesund (Norway)
- 2018 **Norwegian Research Council, Environmental Research for a Green Transi- tion**, Duration: 3 years, overall assessment: 4 (Good), Western Norway University of Applied Sciences, Haugesund (Norway)

- 2017 **MRC-PHE Centre for Environment and Health, Early Career Research Fellowship Programme**, Duration: 3 years, overall assessment: Interviewed, Imperial College London, London (United Kingdom)
- 2017 **RS-SFI University Research Fellowships 2017, the Royal Society – Science Foundation Ireland**, Duration: 5 years, Trinity College Dublin, Dublin (Ireland)
- 2015 **Andalucía Talentia Hub, Agencia Andaluza del Conocimiento**, Duration: 2 years, overall assessment 58.47, University of Florence (UniFi), Italy, and Instituto Andaluz de Ciencias de la Tierra, IACT (CSIC-UGR), Spain, Florence (Italy)
- 2015 **Programa ComFuturo, Fundación General CSIC**, Duration: 2 years, Instituto Andaluz de Ciencias de la Tierra, IACT (CSIC-UGR), Spain, Granada (Spain)
- 2015 **Ayudas Fundación BBVA a Investigadores y Creadores Culturales (convocatoria 2015)**, Duration: 1 years, Instituto Andaluz de Ciencias de la Tierra, IACT (CSIC-UGR), Spain, Granada (Spain)
- 2014 **Becas Fundación Ramón Areces para Estudios Postdoctorales, XXVI Convocatoria de Becas para Ampliación de Estudios en el Extranjero en Ciencias de la Vida y de la Materia**, duration: 1 years, University of Florence, Italy, Florence (Italy)

## Grants

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- 2019 **Roland Schlich Early Career Scientist's Travel Support grant**, European Geosciences Union, EGU General Assembly 2019, award amount: €760, duration: 1 week, Vienna (Austria)
- 2012 **International Mobility Program Grant**, Social Council at the Technical University of Madrid, University of Florence, award amount: €3,000, duration: 3 months, Florence (Italy)
- 2009 **Doctoral Research Grant**, Ciudad de la Energía Foundation, Technical University of Madrid, award amount: €67,000, duration: 4 years, Ponferrada (Spain)

## Honours and Awards

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- 2019 **European Radon Association Award**, International award for my outstanding professional activities in the field of radon research, Europe
- 2016 **Extraordinary PhD Award - Technical University of Madrid**, Award for my outstanding research achievements during my doctoral thesis, Madrid (Spain)
- 2014 **Gómez-Pardo Foundation Award - Spanish Royal Academy of Doctors**, National award for the best doctoral thesis in the areas of Earth, Mining and Metallurgy Sciences and Materials Engineering, Madrid (Spain)

## Research Stays

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- 2013 **University of Florence**, invited by Prof. Orlando Vaselli (duration 3 months), Florence (Italy)

## Teaching Experience

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### *PhD Examiner*

- 2017 **External PhD examiner**, Thesis: “Integration of remote sensing and statistical techniques for detecting CO<sub>2</sub> leaks in geological storage areas through the study of natural analogues”, Miguel A. Rincones Salinas, Technical University of Madrid, Madrid (Spain)

## *Supervision*

- 2017 **Co-supervisor of a Master thesis in Environmental Sciences**, Assessing the contribution of Quaternary deposits to the soil radon budget in Ireland. Geology, School of Natural Sciences, Trinity College Dublin, Dublin (Ireland)
- 2017 **Co-supervisor of an Earth Science Dissertation**, Evaluating two techniques of soil gas radon detection in application, performance and against indoor radon concentrations. Geology, School of Natural Sciences, Trinity College Dublin, Dublin (Ireland)
- 2016 **Co-supervisor of a Master thesis in Environmental Sciences**, Linking radon concentrations between the natural and built environments. Geology, School of Natural Sciences, Trinity College Dublin, Dublin (Ireland)

## *Lectures/Seminars*

- 2018 **Teaching assistant**, 10 day geological residential field-school in SE Spain. Geology, School of Natural Sciences, Trinity College Dublin, Dublin (Ireland)
- 2017 **GIS module in MSc Environmental Science**, Lecture: A new indoor radon risk map of Ireland. Geology, School of Natural Sciences, Trinity College Dublin, Dublin (Ireland)
- 2016 **Michaelmas Semester 2016, Geology Seminar Series**, Modelling Indoor Radon Concentration: Towards a High-Resolution Indoor Radon Map of Ireland, Trinity College Dublin, Ireland., Dublin (Ireland)
- 2016 **Teaching assistant**, 10 day geological residential field-school in SE Spain. Geology, School of Natural Sciences, Trinity College Dublin, Dublin (Ireland)
- 2013 **Summer school in Carbon Capture and Storage**, Surface and subsurface monitoring of a CO<sub>2</sub> storage site: theory and practice, University of León, Ponferrada (León)

## **Publications**

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I have published **17** peer-reviewed journal articles, chapters or books on Environmental Science topics. I have also presented my research at 3 invited talks, and in several national and international conferences including AGU, EGU, EAGE, IGC and Goldschmidt. My metrics in **Google Scholar** are:

- Total citations: 179
- h-index: 8
- i10-index: 7

1. Elío J, Cinelli G, Bossew P, Gutiérrez-Villanueva JL, Tollefsen T, De Cort M, et al. The first

version of the Pan-European Indoor Radon Map. *Natural Hazards and Earth System Sciences*. 2019;19(11):2451–64.

2. Elío J, Crowley Q, Scanlon R, Hodgson J, Long S. Rapid radon potential classification using soil-gas radon measurements in the Cooley Peninsula, County Louth, Ireland. *Environmental Earth Sciences*. 2019;78(12):359.

3. Nisi B, Vaselli O, Elío J, Giannini L, Tassi F, Guidi M, et al. The Campo de Calatrava Volcanic Field (central Spain): Fluid geochemistry in a CO<sub>2</sub> -rich area. *Applied Geochemistry*. 2019;102:153–70.

4. Barrio-Parra F, Elío J, De Miguel E, García-González JE, Izquierdo M, Álvarez R. Environmental risk assessment of cobalt and manganese from industrial sources in an estuarine system. *Environmental Geochemistry and Health*. 2018;40(2):737–48.

5. De Miguel E, Barrio-Parra F, Elío J, Izquierdo-Díaz M, García-González JE, Mazadiego LF, et al. Applicability of radon emanometry in lithologically discontinuous sites contaminated by organic chemicals. *Environmental Science and Pollution Research*. 2018;25(20):20255–63.

6. Elío J, Crowley Q, Scanlon R, Hodgson J, Zgaga L. Estimation of residential radon exposure and definition of Radon Priority Areas based on expected lung cancer incidence. *Environment International*. 2018;114:69–76.

7. Elío J, Crowley Q, Scanlon R, Hodgson J, Long S. Logistic regression model for detecting radon prone areas in Ireland. *Science of The Total Environment*. 2017;599-600:1317–29.

8. Elío J, Ortega MF, Mazadiego LF, Nisi B, Vaselli O, Garcia-Martinez MJ. Monitoring of Soil Gases in the Characterization Stage of CO<sub>2</sub> Storage in Saline Aquifers and Possible Effects of CO<sub>2</sub> Leakages in the Groundwater System. In: *Geologic carbon sequestration*. Cham: Springer International Publishing; 2016. pp. 81–95.

9. Elío J, Ortega MF, Nisi B, Mazadiego LF, Vaselli O, Caballero J, et al. A multi-statistical approach for estimating the total output of CO<sub>2</sub> from diffuse soil degassing by the accumulation chamber method. *International Journal of Greenhouse Gas Control*. 2016;

10. Elío J, Ortega MF, Nisi B, Mazadiego LF, Vaselli O, Caballero J, et al. Evaluation of the applicability of four different radon measurement techniques for monitoring CO<sub>2</sub> storage sites. *International Journal of Greenhouse Gas Control*. 2015;41:1–10.

11. Elío J, Ortega MF, Nisi B, Mazadiego LF, Vaselli O, Caballero J, et al. CO<sub>2</sub> and Rn degassing from the natural analog of Campo de Calatrava (Spain): Implications for monitoring of CO<sub>2</sub> storage sites. *International Journal of Greenhouse Gas Control*. 2015;

12. Nisi B, Vaselli O, Tassi F, Elío J, Ortega M, Caballero J, et al. Origin of the gases released from the Acqua Passante and Ermeta wells (Mt. Amiata, central Italy) and possible environmental implications for their closure. *Annals of Geophysics*. 2014;

13. Ortega MF, Rincones M, Elío J, Del Olmo GJ, Nisi B, Mazadiego LF, et al. Gas monitoring methodology and application to CCS projects as defined by atmospheric and remote sensing survey in the natural analogue of Campo de Calatrava. *Global NEST Journal*. 2014;16(2):269–79.

14. Llamas B, Mazadiego LF, Elío J, Ortega MF, Grandia F, Rincones M. Systematic Approach for the selection of monitoring technologies in CO<sub>2</sub> geological storage projects. *Application of*

multicriteria decision making. *Global NEST Journal*. 2013;16(1):36–42.

15. Elío J, Nisi B, Ortega M, Mazadiego L, Vaselli O, Grandia F. CO<sub>2</sub> soil flux baseline at the technological development plant for CO<sub>2</sub> injection at Hontomin (Burgos, Spain). *International Journal of Greenhouse Gas Control*. 2013;18:224–36.

16. Nisi B, Vaselli O, Tassi F, Elío J, Huertas AD, Mazadiego LF, et al. Hydrogeochemistry of surface and spring waters in the surroundings of the CO<sub>2</sub> injection site at Hontomín–Huermece (Burgos, Spain). *International Journal of Greenhouse Gas Control*. 2013 May;14:151–68.

17. Elío J, Ortega MF, Chacón E, Mazadiego LF, Grandia F. Sampling strategies using the "accumulation chamber" for monitoring geological storage of CO<sub>2</sub>. *International Journal of Greenhouse Gas Control*. 2012;9:303–11.