

C-NEWTRAL Doctoral Training 2024

Candidate Information

Position: Marie Curie Researcher, Doctoral Candidate (C-NEWTRAL, DC3)
Hosting Institution: Universitat de Girona (UdG), Catalonia (Spain)
School/Department: Laboratory of Environmental and Chemical Engineering, Institute of Environment, PhD programme: Water Science and Technology.

Application deadline: 1 March 2024
Job Start Date: 1 September 2024
Salary: EUR 27,558 (Gross Annual Salary); Monthly Mobility Allowance EUR 444 (Gross); Monthly Family Allowance EUR 488 (Gross) if applicable.

*Please note that the figures provided above are estimates. Exact salary and allowances will be confirmed upon appointment.

JOB PURPOSE:

As a Doctoral Candidate (DC), to be an active member of a research project team assisting in the delivery of research and training activities of the C-NEWTRAL Network, working on the specific topic of *'Decision-support system (DSS) to address water scarcity with Nature-based Solutions in cities'* and required to work towards the expected results of this project (see Additional information below).

The Doctoral Candidate will undertake research in the framework of the project *"C-NEWTRAL: smart CompreheNsive training to mainstrEam neW approaches for climaTe-neutRal cities through citizen engAgement and decision-making support for innovative governance and integrated pLanning"*. The Doctoral Candidate will be funded for 36 months through the prestigious Marie Skłodowska-Curie Actions (MSCA) Doctoral Network (DN) programme; an initiative by the European Commission to train creative, entrepreneurial, innovative researchers, who are able to face current and future societal challenges, and will convert knowledge and ideas into products and services for the economic and social benefit of Europe.

C-NEWTRAL is an interdisciplinary network which concerns developing solutions, frameworks and cross-sectoral strategies for citizen engagement and city governance decision-making towards achieving climate-neutral cities in Europe.

MAJOR DUTIES:

1. Carry out the research and training activities specified by a personal career development plan (PCDP).
2. Conduct research in interdisciplinary aspects of the social acceptance of renewable energy, as set out in the additional information below.
3. Undertake mandatory training programs and secondments as required at the facilities of other consortium members (see <http://www.c-newtral.eu/>).
4. Actively participate in training activities and submit reports in fulfilment of the project requirements.
5. Participate in outreach and dissemination activities promoting the C-NEWTRAL Network project and the Marie Skłodowska-Curie Actions (MSCA) programme including the use of social media, video-diaries, newsletters, etc.
6. Prepare regular progress reports on the performed research and training activities and present the research outcomes at meetings, project workshops, and to external audiences to disseminate and publicise research findings.
7. Work closely with academic and industrial collaborators and facilitate knowledge transfer between the C-NEWTRAL consortium.
8. As a MSCA DN Ambassador carry out undergraduate supervision/demonstrating/teaching duties under supervisor direction and according to university regulations.
9. Study and follow the technical literature including academic papers, journals, and textbooks to keep abreast with the state-of-the-art in the project topical area.

10. Record, analyse and write up results of research work and contribute to the production of research reports and publications.
11. Carry out routine administrative duties as requested, e.g. arranging research programme group meetings, contribute to research programme website, contributing to organisation of C-NEWTRAL project training workshops and events.

Planning and Organising:

1. Contribute to the drafting of the PCDP and provide regular updates of this plan.
2. Manage own time and meet agreed deadlines.
3. Plan own day-to-day activity within the framework of the agreed research and training programme.
4. Contribute to the planning of research and training activities, reports, and publications.
5. Actively contribute to organisation of outreach activities events such as C-NEWTRAL workshops.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students involved with research and training.

Internal and External Relationships:

1. Liaise with research colleagues and support staff on routine matters.
2. Make internal and external contacts to develop knowledge and understanding and form relationships for future collaboration.
3. Attend and contribute to relevant meetings and training events.
4. Contribute to the project outreach programmes by establishing links with local community groups, industries etc.

ESSENTIAL CRITERIA:

1. Relevant experience in nature-based solutions for water management, specially in water scarce regions and expertise in modelling, data analysis, qualitative and quantitative methods and multicriteria analysis.
2. Sufficient breadth or depth of specialist knowledge in available strategies, techniques and technologies for investigation of water scarcity management with blue-green infrastructure.
3. Willingness to contribute to the School and project outreach activities.
4. Strong analytical and problem solving skills.
5. Ability to logically conceptualise and summarise the research findings.
6. Ability to work proactively and independently.
7. Ability to participate in knowledge transfer and demonstration.
8. Excellent verbal and writing communication skills.
9. Ability to interact with colleagues and staff.
10. Demonstrable intellectual ability.
11. Ability to communicate complex information clearly.
12. Ability to organise resources, manage time and meet deadlines.
13. Be willing and able to perform secondments or participate in training programs at the facilities of other European consortium members (see <http://www.c-newtral.eu/>)
14. Not yet have been awarded a doctorate.
15. Must not have resided or carried out their main activity in Spain for more than 12 months in the 3 years immediately prior to their selection for this post.
16. Willingness to occasionally work outside core hours, for example during data collection.

17. Be eligible and qualified for enrolment in the PhD programme at UdG.

DESIRABLE CRITERIA:

1. Masters Qualification in urban planning, environmental engineering, sustainability, environmental studies or computer sciences.
2. Specialisation in nature-based solutions, water treatment and reuse and storm water management in scarce regions or related fields.
3. Employment or other practical experience of planning, modelling, decision support, multicriteria analysis or other aspects of nature-based solutions for water management in Mediterranean cities.
4. Placements or work experience in an academic/commercial research environment relevant to decision-making support.
5. Practical experience of applying specialist skills and techniques required for the project.
6. Willingness to assist in undergraduate supervision and teaching.

ADDITIONAL INFORMATION:

C-NEWTRAL (“*C-NEWTRAL: smart CompreheNsive training to mainstrEam neW approaches for climaTe-neutRal cities through citizen engAgement and decision-making support for innovative governance and integrated pLanning*”) is a four year European Training Network funded by Marie Skłodowska-Curie Actions (MSCA) Doctoral Networks (DN).

The C-NEWTRAL Network is made up of 5 European beneficiaries from Ireland, Italy, Germany, Finland, and Spain, and an Associated Partner that will train and host Doctoral Candidates, the UK. 12 Doctoral Candidates will be overall employed to conduct research on how to advance towards achieving climate-neutral cities on different dimensions through citizen engagement and decision-making support.

C-NEWTRAL will also draw on the knowledge and resources of 22 non-academic partners in Poland, Switzerland, Germany, Ireland, the Netherlands, Denmark, Romania, Finland, Hungary, Belgium, Spain, Italy, and the UK. These partners will host DCs for secondments, provide training, and promote and support the work of C-NEWTRAL.

DC3 Project Title: Decision-support system (DSS) to address water scarcity with Nature-based Solutions in cities

Objectives: Accurate decision-making to tackle water scarcity and the differential impact on urban populations is highly needed in cities. While initiatives that support DSS development and guidance for planners have been increasing in the EU, as well as the popularity of nature-based solutions (NbS) to address environmental and societal concerns, water scarcity is a complex challenge. Furthermore, so-far DSS are yet to account for the complex interactions that NBS generate between natural systems, hydro-infrastructure in cities, and human activities. This project will therefore: 1. Integrate these emerging decision tools with data streams and expertise coming from hydroinformatics, modelling and multicriteria analysis. 2. Design/develop a DSS to help make informed decisions on the choice for i) specific NBS for water scarcity; ii) the adequate site; iii) the foreseeable impacts, taking into account social-economic, environmental and political indicators and iv) the synergies and trade-offs between these indicators and also different priorities of the planning process. 3. Employ data made available through the infrastructure for environmental data and information sharing at the European Environmental Agency (EEA) and the European Environment Information and Observation Network (EEIA), considering the developments of the Shared Environmental Information System (SEIS) and the Infrastructure for Spatial Information in Europe (INSPIRE). 4. Existing models and algorithms within the DSS will be modified or supplemented to incorporate the specific characteristics of NbS and simulate their impact on water availability, water quality, and overall water

management priorities. This can also be tested in a real case (e.g., in Girona with Mediterranean climate with hot and dry summers experiencing water scarcity, i.e. lack of available water for different uses). Different types of NbS for water treatment (in a decentralized way) as well as NbS for stormwater management will be considered. By utilizing such an DSS, cities can effectively combat water scarcity while promoting sustainable and resilient urban development.

Expected Results: 1. an analysis of existing DSS in view of defining how to integrate specific characteristics of NbS and simulate their impact on water scarcity; 2. development of DSS for urban planning that combines the existing knowledge about NbS and the available environmental data in the European databases; 3. a first test of the DSS in a real case considering data from Girona, that experiences water scarcity in a Mediterranean climate.

Planned secondment(s): Non-academic: ABUD (Mr. Reith, M15-18); *Purpose:* gain insights into the integration of NbS in urban plans in practice; **Academic:** UCD (Dr. Istrate, M18-23) - *Purpose:* integration of NbS and considering water issues in urban planning

Academic Supervision at Host Institution: Prof. Rodriguez-Roda; Prof. Comas; **Academic Secondment:** Dr. Istrate (UCD);

Application Procedure:

The candidate will be selected on the basis of the quality of the application, expertise, work experience, and qualifications. In the first instance, an expression of interest should be lodged containing the following documents (in English) consolidated **into one single PDF** and sent via the website (<http://www.c-newtral.eu/>).

- A current CV (max 2 pages)
- A short cover letter (max 300 words) explaining briefly your motivation and key research experience/achievements that demonstrate independent thinking and your ability to complete a PhD.
- A research outline (max 500 words) related to the DC topic (to suggest how you meet and can develop further the research project described in this ad). If you are applying for up to 3 PhD positions in C-NEWTRAL, you can refer to all, while prioritising your choices.
- Details of 2 referees (names, contact details) who can provide information about your qualifications
- Official Academic Record - Bachelor's and Master's Diplomas and Transcripts
- One work sample demonstrating prior achievement in research, enquiry or debate, e.g. a published paper or software, standards or policy contribution; extract of dissertation or master's thesis;

After an initial screening, shortlisted candidates will be required to attend an online or in-person interview. They may be required to furnish/present a more detailed research proposal comprising literature review, methodology, expected contribution. Only shortlisted candidates will be contacted.