

RECRUITMENT NOTICE / RESEARCH AND TEACHING: Junior Chair: "Digital twin of an anthropized coastline"



La Rochelle Université is launching a call for proposals for a "Junior Chair" in the framework of the ExcelLR project. This call is open to young researchers wishing to join the institution, and aims to allow them to **develop autonomously a project by giving them the opportunity to express their capacity for exploratory research and innovation.**

The objective is to recruit a young high-level scientist proposing a research project on the scientific theme of "Digital twin of an anthropized coastline".

- **Presentation of the university**

In a higher education and research landscape that has undergone profound changes for over a decade, [La Rochelle University](https://www.la-rochelle.fr) has chosen to structure its research around a signature by positioning its scientific and academic strengths on societal and environmental issues. This approach has led to the creation of a teaching and research institute named Institute Littoral Urbain Durable Intelligent (LUDI), operational since September 1, 2021. Bringing together all the laboratories, PhD students and most of the school's Masters programs, this institute aims to address the many scientific issues raised by the anthropization of the coastline by facilitating decompartmentalized and interdisciplinary approaches, supported by a proactive policy of innovation and dissemination of results, without forgetting the fundamental principles of ethics and scientific integrity. The creation of the LUDI institute is surrounded by two other structuring projects, namely the EU-CONEXUS European university, a network of European partner universities sharing a common specialty, and the CampusInnov site initiative, designed to establish a culture of innovation in both training and research.

- **Context: settlement strategy**

La Rochelle Université's approach to specialization was recognized in the PIA 4 call for Excellence projects, with the award of funding for the ExcelLR project, which will accelerate the institution's transformation process.

The [ExcelLR](https://www.excellr.fr) project aims to consolidate our new university model around four key axes, all centered on our specialist field of sustainable development in coastal areas:

Of these, Axis 1, aimed at strengthening specialization in research, occupies a central place. It focuses on increasing attractiveness and specialization by creating a talent management center and launching research initiatives via competitive calls for projects. A major objective is to set up a decision support system that will provide support based on the latest scientific developments, thus helping to strengthen the societal and territorial impact in the field of sustainable development in coastal areas. In this context,

[the Urban and Coastal Lab La Rochelle](#) (UCLR) project aims to set up a platform of data, models and digital tools from the university's research laboratories. This project, part of WP3 of Axis 1, adopts a cross-disciplinary and multidisciplinary approach. It reinforces the establishment's project by contributing to a better understanding of the territory and promoting its efficient management. It is also in line with the national plan for open science, and integrates harmoniously with the LRTZC project of the Communauté d'Agglomération de La Rochelle.

- **Research theme**

Develop a systems approach based on digital twins combined with data science for holistic modeling of anthropized coastal areas. The aim is to provide tools for decision support. This will be achieved in close collaboration with the UCLR platform, integrating digital twins for a more precise and comprehensive assessment of the proposed approaches.

This research theme is deliberately described as open and multi-disciplinary, to encourage interaction between data sciences, environmental sciences, urban planning, geography, engineering, sociology and economics

An interest in environmental issues in coastal areas is essential, as is the ability to look ahead 5 to 10 years, with a view to ultimately creating a digital twin of the coastline and decision-support mechanisms to understand and model the socio-ecosystems of coastal areas and support their sustainable development.

The candidate will work closely with the UCLR team and the La Rochelle Territoire Zéro Carbone team (TERREZE platform).

Key words: Interdisciplinarity, Modelling, Interaction, Semantic representation, Complex systems, Coastline, Environment, Anthropised coastal city

- **Job description**

The Junior Chairholder will be expected to carry out his/her research project in collaboration with the LUDI Institute and within a La Rochelle University laboratory, in a collaborative and multidisciplinary approach.

He/she will have to implement research work on digital twins with the aim of solving scientific or societal problems linked to anthropized coastal zones. This dynamic will be supported by the implementation of a tool for collecting, pooling and upgrading data, models and digital tools from La Rochelle University laboratories.

The impact of research and its openness to society must be sought, notably through the creation of cooperative networks and responses to ambitious calls for projects focusing on digital twin applications.

The Junior Chairholder will also be required to carry out 64HeTD of teaching and will be involved in a teaching department with a view to pedagogical innovation and the

internationalization of training courses.

Research missions:

- Conduct research activities using innovative methods and tools based on digital twins;
- Develop high-level research tools and methodologies;
- Write and disseminate research results in leading international conferences and major journals;
- Develop national and international cooperation networks in the field of digital twins and their applications to sustainable development in coastal areas;
- Maintain an active watch, and respond to and manage proposals for national, European and international projects.

Teaching missions:

- Participate in the development and implementation of specific teaching programs linked to the Chair within the La Rochelle University Graduate School (currently being set up);
- Design and implement teaching programs;
- Evaluate learning outcomes and participate in juries;
- Contribute to the work of the teaching team in conjunction with the parent department, promoting pedagogical innovation and the internationalization of training courses.

Cross-functional responsibilities:

- Lead collective projects focusing on the application of digital twins in the management of anthropized coastal zones;
- Participate in the management of human and administrative aspects with the support of dedicated staff.
- Participate in scientific outreach activities;
- Supervise and lead a research team of interns, PhD students and post-docs.

- **Profile description**

The candidate holds a doctorate related to the research theme and has between 2 and 5 years of research experience after the PhD, including at least 2 years outside La Rochelle Université. His/her professional career demonstrates an international dimension with significant experience of mobility abroad.

The candidate will have to bring a research dynamic based on a disciplinary richness while having a will of opening and decompartmentalising. He/she has already published a number of papers attesting to his/her scientific excellence in his/her discipline. He/she is able to respond to national, European and international calls for projects. Commitment to the supervision of trainees and PhD students will be

particularly appreciated.

The candidate has experience in setting up teaching courses. He/she will assume pedagogical or administrative responsibilities related to the courses. He/she will deliver, by developing an innovative pedagogy and by participating in the international opening of the courses.

- **Research project**

Applicants must submit an original, high-level scientific project focusing on the digital twins of anthropized coastlines. The scientific description of the project should show the extent to which it will generate new knowledge that will help to better understand and shed light on current challenges in the sustainable management of coastal areas. Research into the implementation of solutions that contribute to mastering all or part of the data chain, from sensor to decision, based on digital twins, will be highly appreciated.

Particular attention will be paid to aspects relating to open science and the dissemination and valorisation of results, in particular the transmission of knowledge to citizens through actions to disseminate scientific culture and/or the transfer of results to socio-economic players. The impact of the project may also be considered in terms of support for public policies in coastal areas.

Applications will be assessed according to the following criteria:

- Scientific background, achievements and international recognition of the applicant;
- Relevance of content to the University's scientific priorities;
- Prospects for pursuing the research topic in the medium and long term;
- Quality and scientific originality of the project;
- Dissemination of project results;
- Scientific and socio-economic spin-offs.

- **Working environment**

Type of recruitment:

The maximum duration of the Chair will be 4 years, at the end of which the Chairholder will be evaluated.

The recruitment will be made on a fixed-term contract as a Contractual Teacher-Researcher (3-year fixed-term contract, renewable for 1 year), with a teaching service of 64 hours.

Salary to be defined according to profile and experience, in compliance with the university's contractual personnel management charter. For more experienced candidates, the salary scale corresponding to a Senior Chair may be submitted for

approval to the ExcellR project management committee, to which this Chair is attached.

At the end of the Chair, the opportunity to be recruited to a permanent position may be open through the usual channels (competition for a teacher-researcher position with competition and selection by a committee, or permanent contract).

Location: La Rochelle Université - 23 avenue Albert Einstein - 17000 LA ROCHELLE and according to the laboratory of assignment.

Operation and equipment:

The position is surrounded by funding from the institution for mobility and recruitment to post-doctoral or doctoral positions.

It is strongly recommended that the application be accompanied by one or more co-financing arrangements, whether already in place, applied for or envisaged. A detailed budget with income and main expenditure items must be provided (see application file).

Funding granted by the University:

- 45,000 € for environment and mobility
- 24 months of post doc or 36 months of PhD (depending on the needs explained in the project)

- **Project selection procedure**

A selection committee will make a pre-selection and hold auditions for the pre-selected candidates. Finally, it will draw up a ranked list of successful candidates.

- **Application procedure**

Applicants are expected to contact the laboratory and department concerned with the proposed research and teaching project.

An application file must be completed with the proposed research and teaching project, written in French or English; the doctoral diploma, detailed CV and application form.

For any questions, please send an email to excellr.recherche@univ-lr.fr

Applications must be submitted on DEMATEC before 17/06/2024

- **Provisional timetable**

Opening date of the call: 17/04/2024

Closing date of the call: 17/06/2024

Evaluation and pre-selection of applications: second half of June 2024

Hearing of applicants on shortlisted projects: July 2024

Start date: September 2024 at the earliest

Contact details of the research laboratories of La Rochelle Université.

<p>CEBC (UMR7372 LRUniv-CNRS) Centre for Biological Studies of Chizé https://www.cebc.cnrs.fr/</p>	<p>Director: Charles-André BOST</p>
<p>CRHIA Research Centre for International and Atlantic History https://www.crhia.fr/</p>	<p>Director: Cécile CHANTRAINE BRAILLON</p>
<p>D2IA Asian Dynamics, Interactions, Interculturality (ACA2K) https://dzia.fr/</p>	<p>Director: David WATERMAN</p>
<p>L3i Computer, Image and Interaction Laboratory https://l3i.univ-larochelle.fr/</p>	<p>Director: Yacine GHAMRI-DOUDANE MOHAMED</p>
<p>LaSIE (UMR 7356 LRUniv - CNRS) Laboratory of Engineering Sciences for the Environment https://lasie.univ-larochelle.fr/</p>	<p>Director: Xavier FEAUGAS</p>
<p>LIENSs (UMR 7266 LRUniv - CNRS) Littoral, Environment and Societies https://lienss.univ-larochelle.fr/</p>	<p>Director: Valérie BALLU</p>
<p>LITHORAL Interdisciplinary Laboratory Territory History Organisation Regulation Law</p>	<p>Director: Guillaume DELALIEUX</p>
<p>MIA Mathematics, Image and Applications http://mia.univ-larochelle.fr/</p>	<p>Director: Catherine CHOQUET</p>
<p>NUDD Digital uses for sustainable development</p>	<p>Director: Jeanne LALLEMENT</p>
<p>PELAGIS Observatory (UAR 3462 LRUniv-CNRS) Observatory for the conservation of marine mammals and birds. https://www.observatoire-pelagis.cnrs.fr/</p>	<p>Directors : Florence CAURANT and Jérôme SPITZ</p>

Contact details of the educational departments of La Rochelle Université.

Biology Department:

Director: Gilles RADENAC

Biotechnology Department:

Director: Stéphanie BORDENAVE

Chemistry Department:

Director: Fernando PEDRAZA-DIAZ

Civil Engineering Department:

Director: Ameer HAMAMI

IT Department:

Director: Jacques MORCOS

Mathematics Department:

Director: Cyrille OSPEL

Earth Sciences Department:

Director: Vivien MATHE

Department of Applied Foreign Languages:

Director: Cécile CHANTRAINE BRAILLON

Department of Humanities:

Director: Tatiana CLAVIER

Humanities and Social Sciences Department:

Director: Pierre PRETOU

Physics Department:

Director : Philippe REFAIT

Department of Law and Political Science:

Director: Linda ARCELIN

Department of the School of Management:

Director: Jean-François BERTHEVAS / Mathieu PAQUEROT

The ExcellLR project - Excellences in all its forms - has benefited from State aid managed by the National Research Agency under **the France 2030 Plan**, bearing the reference **ANR-21-EXES-0010**



Scientific partners of the ExcellLR project



Public partners of the ExcellLR project

