Horizon MSCA Cofund
REACH-UPPA
Postdoctoral Program

Co-funded by the European Union

Guide for applicants

CALL#1
PROMOTION 1
2026-2030

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

https://www.univ-pau.fr/reach-uppa

This program has received funding from the European Union's Horizon Europe Research and Innovation programme under the Marie Skłodowska-Curie Actions (MSCA) grant agreement N° 101261720

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1 About REACH-UPPA

The REACH-UPPA programme is designed to offer a **world-class interdisciplinary research environment** while providing a gateway for researchers to access **international and/or cross-sectoral partners** to help establish a **high-level independent research profile**. REACH-UPPA Postdoctoral Researches (PDRs) will benefit from being part of an outstanding academic community, combining research excellence, strong cross-disciplinary collaborations, and significant external engagement with leading international and socio-economic partners.
UPPA is a leading research and teaching university, among the 9 universities awarded the label of excellence I-SITE at the national level, located in the beautiful, culturally rich, and highly diverse region of the Atlantic Pyrenees, in France. UPPA hosts over 514 permanent researchers in **18 research units and joint research units, 3 Associated International Laboratories (Berkeley University, Northwestern University, Indian Institute of Science - Bangalore) and 9 Joint laboratories with non-academic partners** (majors and SMEs). UPPA researchers have been awarded with different several honors and awards as 1 election as member of the French Academy of Sciences in the Chemistry section, 1 prize of the French Academy of Sciences, 3 CNRS Crystal and Bronze Medals, 2 ERC starting grants and 1 ERC consolidator grant, or 4 IUF (*Institut Universitaire de France*) positions, among others. UPPA is committed to build a diverse educational and research environment in agreement with the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

REACH-UPPA will grow on UPPA's **five interdisciplinary missions,** linked to the UN's sustainable development goals.These missions are designe to transcend traditional disciplinary boundaries, encouraging cross-fertilization and interdisciplinarity between different players and sectors to better grasp the complexity of their issues. They are structured into programs based on the specific themes addressed by the different research units. They are supported by "mission-labs", whose aim is to organize forward-looking scientific activities (incubating ideas and detecting new themes) and to renew the research-training link, by bringing together all the partners involved (socio-economic and cultural, as well as academic, at regional, national and international level), around UPPA's teams.

A key feature of the programme is that **early-career researchers can propose their own research projects**, provided these **align with UPPA's 15 priority research areas**, lined to the **five interdisciplinary missions of the UPPA**.
This year for the first call, 8 priority research areas are open for applications, so proposed projects must fall within one of these 8 areas. The second call will cover the remaining **7 research areas.**

Each project will be supported by a **scientific mentor** to help researchers reach their full potential.

The dedicated online portal, the **REACH website (**https://www.univ-pau.fr/reach-uppa**),** contains all the details about the program and the necessary information and documents related to the application process.

REACH's goals in brief:

- The REACH programme will recruit 10 outstanding postdoctoral researchers through two calls, offering them the opportunity to conduct high-impact research in a dynamic, interdisciplinary environment.
- Postdoctoral Researcher are invited to design their own original research project, aligned with the programme's thematic priorities and the five interdisciplinary missions of UPPA.
- Each researcher will receive tailored guidance from dedicated UPPA mentors, collaborate closely with an assigned PhD candidate, and benefit from a 3 to 6-month research secondment at a pre-selected partner organisation or a relevant institution of their choice.
- This programme is designed to foster innovation, international collaboration, and the development of a strong interdisciplinary research profile.

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2 Timeline of the call, deadlines for submission, and results

In alignment with the *European Charter for Researchers* and the *Code of Conduct for the Recruitment of the Researchers* and the evaluation procedures set out by Marie Skłodowska-Curie Actions, REACH-UPPA will establish 2 successive calls. The **schedule for CALL#1** is detailed in the table below (**Dates may however be subject to some variations**).

Object	Timeline (DD/MM/YYYY)
Opening of CALL#1	**23/03/2026**
Ending of CALL#1 Deadline for submission of the research proposal and deposit on the application platform	**17/05/2026**
START OF THE EVALUATION PROCESS BY THE DIFFERENT COMMITTEES - ELIGIBILITY	**18-24 /05/2026**
EXPERTS EVALUATION/SHORT LIST	**25/05/2026 - 30/06/2026**
INTERVIEWS	**July 2026**
SELECTION COMMITTEE/FINAL RANKING BY THE STEERING COMMITTEE	**End of August 2026**
PUBLICATION OF THE RESULTS	**End of August 2026**
Start of the Postdoctoral position *(if selected)*	**October 2026**

Schedule for REACH-UPPA CALL#1 for Projects 2026

At the end of **CALL#1**, **5 postdoctoral candidates** will be recruited for a duration of 48 months. The best ranked proposals will be short-listed (**up to 15)** for interviews, and applicants will be informed of the output of this step by email from the PM – See all details for applying in Section 4.

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3 Presentation of the Interdisciplinary Missions and Areas of research for application

REACH-UPPA grows on UPPA's **five interdisciplinary missions,** linked to the UN's sustainable development goals. These missions are designed to transcend traditional disciplinary boundaries, encouraging cross-fertilization and interdisciplinarity between different players and sectors to better grasp the complexity of their issues. They are structured into programs based on the specific themes addressed by the different research units. They are supported by "mission-labs", whose aim is to organize forward-looking scientific activities (incubating ideas and detecting new themes) and to renew the research-training link, by bringing together all the partners involved (socio-economic and cultural, as well as academic, at regional, national and international level), around UPPA's teams.
In order to maximise the candidates' freedom of choice of their research project, REACH-UPPA focuses on the interdisciplinary missions and give the choice among 8 different research areas (for this first call), led by scientific mentors that will guide the researchers to the top of their capacities.

The **five interdisciplinary** missions are:

1. Adapt coastal, forest and mountain ecosystems to make them more resilient

This mission englobes areas as (i) climate impact on freshwater ecosystems, (ii) impact of environmental change on coastal zones, (iii) micro- and nano-plastics in marine and coastal environments, (iv) pollutants, and contaminants, including emerging ones and (v) environmental monitoring (sensors, bio-indicators, statistical modelling).

Within this mission and for this first call, the PD candidates will be able to present their research projects within the following research priority (Please note that 1.1 and 1. 2 will open for the second call):

1.3. Interacting mechanisms of adaptation to intertwined climate-driven challenges

The fate of fish populations is challenged by many pressures, among which direct climatic change affects individual growth, survival, and reproductive success, so that the density of the population is altered, and its genetic composition also evolves as a response to natural selection, shaping phenotypic diversity alongside developmental plasticity and behavioral flexibility. Climate change causes selection on phenotypic traits, but its evolutionary response needs to be elucidated as (1) genetic variation of natural populations for functional traits could be sufficient to fuel the evolutionary response to natural selection, (2) different mechanisms of adaptation can interfere with phenotypic plasticity or behavioral flexibility possibly hampering or favoring natural selection and (3) diversity of environmental variables that are directly and indirectly affected by climate change exposes traits to selective pressures that can be spatially and temporally heterogeneous in the direction of selection, the response to which is complex to predict. The answers are key to build conservation strategies that rely on evolutionary response to climate change.

Research Unit at UPPA: ECOBIOP
Associated partners for secondments: Centre for Biological Diversity - University of St Andrews (UK), Scimabio (FR)

For further information for the research priority, please consult Annex II

2. Reconcile development, a safe environment and preserved biodiversity

This mission focuses on (i) aquaculture and nutrition, (ii) carbon capture and geological storage, (iii) eco-processes, bio-inspired materials, and (iv) food safety.

Within this mission and for this first call, the PD candidates will be able to present their research projects within the following research priorities (Please note that 2.2 will open for the second call):

2.1. From environmental to human health through advanced sustainable chemical & biological approaches

This research area aims to adopt a multidisciplinary approach, closely linking environmental systems to human and animal health, and covers some crucial scientific concerns, that will integrate innovative chemical, biological and

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computational methods to address key challenges, contributing to environmental sustainability, global health and food security. Identified key research areas to be addressed are (i) Innovative experimental methodologies and analytical approaches, (ii) Chemical mathematical modelling and discrimination of contaminants biological impacts, (iii) Microbial and nature-based method for sustainable agriculture, water management and healthcare, (iv) Advanced sustainable methods for pollution abatement and increasing societal awareness.

Research Unit at UPPA: IPREM
Associated partners for secondments: Department of Biology - University of Ottawa (CA), Applied Mathematics - University of Gdansk (PL), Consejo Superior Investigaciones Científicas (ES), University Oviedo (ES), TotalEnergies (FR), Florida State University (US)

For further information for the research priority, please consult Annex II

2.3. Durability and optimization of engineered structures The mechanics of materials and structures is a vast field that is approached at UPPA through 2 categories of applications: (1) the mechanics of geomaterials, geostructures and civil infrastructures, considered in the context of bio-inspired materials and eco-materials, and with a perspective towards the sustainability of civil infrastructures, and (2) the optimization of engineered structures with a current emblematic application in aeronautics. These challenges call on skills in applied mathematics and solid mechanics, with training in physics and chemistry. Building on such a conducive environment, two research areas are open (i) Data and physics-driven modelling geomechanics and multiphysics problems by the implementation of machine learning and data driven analyses and (ii) Optimization in the presence of uncertainties for shape optimization to avoid leading to designs that are ill-suited to the actual practical configuration.

Research Unit at UPPA: LFCR, LMAP
Associated partners for secondments: Civil and Environmental Engineering - Northwestern University (US), Mechanical Engineering dept - University of Zaragoza (ES), Computer Science Department - KU Leuven (Belgique), Sixense NECS (FR)

For further information for the research priority, please consult Annex II

3. Organise energy subsidiarity at the territorial level

The focus of this mission is on (i) energy law, (ii) energy efficiency, sobriety and energy poverty, (iii) sustainable hydrogen generation, biogas and new energies, (iv) materials for energy storage, (v) subsurface, a common good; and (v) territorialisation, mobilisation and politicisation of energy.

Within this mission and for this first call, the PD candidates will be able to present their research projects within the following research priorities (Please note that 3.2 will open for the second call):

3.1. Hydrogen production has gained significant attention as a clean energy source, with subsurface hydrogen generation and photo(electro)catalysis as promising pathways. However, efforts need to be fulfilled in understanding hydrogen production processes in subsurface environments and hydrogen generation by catalytic processes, anion exchange membrane electrolyzers, including the sustainability and social science perspectives to ensure that hydrogen production is both environmentally sustainable and socially responsible, including (i) novel materials, physicochemical processes and devices for hydrogen production, (ii) exploration and monitoring technologies and (iii) sustainability assessment.

Research Unit at UPPA: LFCR, IPREM
Associated partners for secondments: Institute of Chemical Research of Catalonia (ES), CSIRO (AU), 45-8 Energy

For further information for the research priority, please consult Annex II

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3.3. AI for Energy To accelerate the deployment of cleaner energy technologies, their development time and costs need to be considerably reduced. A key enabler for this is stronger reliance on computational fluid dynamics, to reduce time-consuming and very costly physical testing. However, current models have been highly tuned for today's technology but cannot be relied on when moving into new design spaces. This is because traditional modeling based on physical reasoning and intuition has its limits and model calibration was performed using limited amounts of data. However, recent advances in computing power and experimental diagnostics have led to the generation of vast amounts of data, and modern machine learning methods have emerged capable of identifying complex relationships between inputs (data) and outputs (models). The development of novel models that are considerably more accurate and reliable by exploiting the complementarity between advanced turbulence models and modern machine-learning is needed.

Research Unit at UPPA: LMAP
Associated partners for secondments: Computational Mechanics - Department of Mechanical Engineering - University of Melbourne (AUS)

For further information for the research priority, please consult Annex II

4. Question borders and meet the challenge of differences

This mission focuses on (i) otherness and identity, (ii) borders: representations and cooperation, (iii) hybridisation, comparison and circulation, (iv) heritage, traces and commons, (v) multilingualism and interculturality.

The PD candidates will be able to present their research projects within the following priorities (Please note that 4.2 and 4. 3 will open for the second call):

4.1. How to face Immigration: the administrative manufacture of undesirables Immigration is an ever-increasing phenomenon worldwide. Today, over 280 million people live outside their country of origin. In South America, for example, new nations have historically been lands of immigration. As such, countries have implemented essentialist policies and regulations that have manufactured 'undesirables' at the administrative level. Other countries have closed their borders selectively because of changes in the migratory flows influenced by international events (e.g. European inter-war political instability, United States' protectionist retreat). Thus, the question on how to 'sort' migrants arise: Should we welcome immigrants, and if yes to what extent? How does the 'host-country' problem differ from nation to nation? How have governments practiced political, racial, ethnic and religious selections? Finally, how have administrative practices defined 'undesirability'?

Research Unit at UPPA: ITEM
Associated partners for secondments: School of Interdisciplinary Advanced Social Studies - National University of San Martin (AR)

For further information for the research priority, please consult Annex II

5. Represent and build the territories of the future

This mission concentrates on (i) adapt regions to environmental change, (ii) low-carbon construction, (iii) autonomous housing, adapting habitats and urban environments, (iv) new collective and individual behaviours and (v) new societal and regulatory issues.
The PD candidates will be able to present their research projects within the following research priorities (Please note that 5.3 will open for the second call):

5.1. Embedded Intelligence and Digital Twins to accelerate the Digital Transition Digital technologies have huge potential to address the challenges faced by sustainable development, climate change as well as proposing innovative services for smarter territories: monitoring of ecosystems, optimizing usage of natural resources, qualifying, and quantifying the impacts of human activities and mitigation measures, increasing resilience of fragile communities, etc, to

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name a few. Two promising digital technologies of cyber-physical systems have been identified to contribute to the development of digital tools to better understand environmental ecosystems, achieve environmental targets and propose innovative services for territories: (i) *Embedded Intelligence* approach where the AI processing tasks can be realized in a smart sensing device itself, unlocking a wide range of environmental applications that often need to deploy very low-power smart sensing systems in very remote areas, (ii) *Digital Twins* accurately represent a physical object through a virtual digital model, which provides a virtualized environment to test, experiment and predict various behavior and outcomes of objects without stressing the object and its resources.

Research Unit at UPPA: LIUPPA
Associated partners for secondments: WAZIUP e.V. (DE)

For further information for the research priority, please consult Annex II

5.2. Territories and Mobility looks at ways to improve access across a territory while fighting global warming. Everyone needs access to basic things like food, post, banks, and pharmacies. Differences between territories, however, create major inequalities between citizens. Rural and mountainous areas are especially affected by a lack of mobility, including unequal access to healthcare. The EU has promised to cut greenhouse gases completely by 2050 and the freight and logistics sectors are encouraged to reduce their carbon footprint. This should not affect mobility in disadvantaged areas, however. Here, the challenge is to reduce transport emissions while maintaining productivity and meeting public expectations for mobility. For instance, hospitals and healthcare professionals, despite limited funds, are working to improve access to care and fight social inequalities in rural and mountainous areas. New ideas are being invented to improve access to health and reduce global warming (e.g. remote diagnosis through connected health devices developed by 'innovation start-ups'). Likewise, public institutions also need to create new policies to improve access and mobility in their territories.
Research Unit at UPPA: LIREM
Associated partners for secondments: University of Turin (IT)

For further information for the research priority, please consult Annex II

It should be underlined that the **research units** linked to these topics have been assessed, and internally pre-selected to host the researchers, based on their **scientific track record and publication scores, successful participation to nationally and internationally funded projects, excellent research facilities and their presence in well-established international networks and opened to interconnection**.
Research at UPPA is also characterized by systemic engagement with **non-academic partners**, as well as **international academic partners**, which will give highly relevant opportunities of **secondments** for the PDRs. As presented above, research areas have already pre-identified partners willing to host the PDRs. Through collaborative research and development projects with such partners, external engagement is conducive of greater research impact and innovation potential. Within this excellent research ecosystem, **specific and detailed plans for training and career development will be issued for each REACH-UPPA PD researcher** with the support of the mentors.

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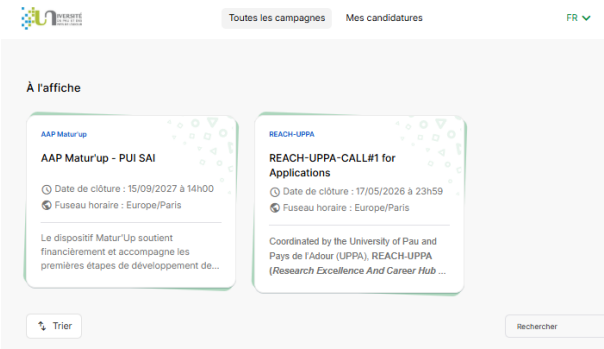
4 Application procedure

In order to apply to **CALL#1**, applicants must comply with the following requirements:

4.1 Registration on the application platform

First of all, the candidate must go to **https://aap.univ-pau.fr**, and create an account to have access to **CALL#1 for applications REACH-UPPA POSTDOCTORAL**, and register his/her profile. Once the account is created, the applicant can have access to the call and complete the form. To go further in his/her application, he/she must check that his/her application meets the **Eligibility criteria** described in 4.3.1. **If you don't speak French, don't forget to change the platform to English**.



If the applicant encounters any problem during the application process on the platform, he/she should contact reach-uppa@univ-pau.fr

4.2 Submission of a complete Application Form on the dedicated platform

Candidates must submit their Application Form and all required documents on the following dedicated online **application and evaluation platform https://aap.univ-pau.fr**: each applicant will receive an automatically generated confirmation email when the complete application document is successfully received. A Helpdesk service is available throughout the process at **reach-uppa@univ-pau.fr**.

IMPORTANT:

- **The call is open to researchers of any nationality**
- **Applicants can apply to maximum 1 research project within 1 area of research.** In **the event of multiple applications, only the latest submitted application will be considered.**
- The application must be completed **in English before the deadline** and **uploaded in PDF format**. **All required support documents must be submitted online via the call website**. Only fully completed applications will be considered.
- **Templates** are included for guidance in Annex 8; **the official downloadable versions are available exclusively via the application platform (https://aap.univ-pau.fr) and the website (https://www.univ-pau.fr/reach-uppa). All applications must use the templates provided in the call; any application not complying with these requirements will be deemed ineligible**.

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The **Application Form** must include the following **mandatory documents**:

1. **The candidate's extended CV** (**pdf format**, **Template provided on the application platform– no page limit**), containing information including **identity**, **education background (doctoral and other degrees), research activities track record** and the **name of two referees** (who will provide reference letters). **A list of the publications** as main author, accepted or published by the call deadline, must be provided.

2. **A personal statement** (**pdf format, Template provided on the application platform, maximum of 5 pages**), including: (1) **a general motivation letter** for **participation in REACH-UPPA and the chosen research area**, (2) **qualifications & achievements** and (3) **career development objectives**

3. **A research project** (**pdf format, Template provided on the application platform, maximum of 10 pages**) relevant to the chosen research area, including **state of the art**, **research objectives**, **its positioning in relation to the scientific areas** developed **within the research unit**, **scientific methodology**, and **a 48-month work program.**

   - **WARNING***: Contact with Unit Directors (DUs) is permitted **solely to obtain general information** about the laboratory. Requests regarding specific research lines, feedback on a project proposal, or opinions on an application are **strictly prohibited***

   The research areas investigated within the laboratories, together with the profiles of researchers associated with each area of interest, are presented in Section 3. This section is organized by research area corresponding to the field in which applicants intend to submit their project.

4. An **ethics self-assessment** (**Template provided on the application platform**). This document allows applicants to demonstrate their understanding of the **ethical issues** potentially involved in their **research project**. Applicants should carefully review the project description and identify any relevant ethical or security issues, explaining how these might be addressed within the project's framework.

5. **Two signed reference letters** from referees affiliated with two different institutions, written on official institutional letterhead, attesting to the applicant's previous research activities, research capacity, and work experience. The letters must be sent directly by the referees to **reach-uppa@univ-pau.fr** before the call deadline, with the following subject line:*"REACH-UPPA Programme – Reference Letter – 'Applicant's Name' – 'Referee's Name'."*
6. A **copy of the doctoral degree certificate** or **assimilated certification of completion of your doctorate**

7. **Copies of official valid English language certificates** (Cambridge FCE or equivalent for non-native English speakers). Minimum level B2.

8. **Copy of a valid ID card or passport at the call deadline** (For non-EU candidates, a valid passport is mandatory).

9. **A request for extension - seniority rule** (**pdf format, Template provided on the application platform**), **if applicable**, **with supporting documentation**

10. **A declaration on honour (Template provided on the application platform)** about the conformity of the information declared, including the mobility.

*NB: this **platform** will allow registered applicants to upload all application materials. Evaluators will be only able to access material through the online platform for the candidates they will have to evaluate. The platform will guarantee confidentiality of application material, which will only be accessible to the Steering Committee and evaluators involved in the selection process. From the call deadline to the appointment of the Postdoctoral Researcher, the website will be updated continuously and candidates will be notified of their status in the selection process as soon as a new step has been reached.*

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5 Evaluation and selection

5.1 Successive stages in the selection process

In alignment with the *European Charter for Researchers* and the *Code of Conduct for the Recruitment of the Researchers* and the evaluation procedures set out by Marie Skłodowska-Curie Actions, the candidates will be selected according to a very rigorous process, taking place in successive stages where different committees will be involved:

1. Eligibility check	An Eligibility Committee will first verify that all eligibility criteria mentioned in Section 5.2.1 are fulfilled.
2. Scientific evaluation	A Review Panel composed of **three external experts will evaluate all applications submitted within the same research area**. The evaluation will be based on the following documents: **the applicant's CV, the research project proposal, the personal statement and the reference letters**. The highest-ranked proposals (up to three times the number of available positions, i.e., up to 15 candidates) will be shortlisted for interviews. Applicants will be informed of the outcome of this stage by the REACH-UPPA team via the online platform or by email.
3. Interview stage	**Shortlisted candidates** will be invited to present their research project and profile **during half-day interviews at UPPA**. The interview process will include two steps: each candidate will be invited to visit the UPPA premises and present their research project and profile to members of the selected research unit, the four-member Interview Panel, and the Project Coordinator (PC). Following the presentation, candidates will take part in a formal interview with the Interview Panel.
4. Final selection	The top-scoring applications will be presented to the Steering Committee, which will endorse the final funding decisions. Once the final ranked list and reserve list have been established, applicants will be informed of the outcome by the REACH-UPPA team.

Selections will be made in full respect of the principles of equal opportunity and non-discrimination, regardless of gender, nationality, religion, ethnicity, or cultural background, while aiming to ensure a balanced cohort.

5.2 Description of the evaluation and selection process

For the evaluation of the candidature, 3 steps can be distinguished:

5.2.1 STEP 1: Verification of the Eligibility criteria of the candidates

In order to participate in REACH-UPPA program, the **applicants** will have to demonstrate they satisfy **the following eligibility criteria:**

Criterion	Rule
Diploma	At the closing date of the call, the candidate **MUST BE** in possession of a **PhD Degree**
Seniority	**Up to 3 years of research experience after the obtention of the doctoral degree by the call deadline.** *Researchers who have successfully defended their doctoral thesis but have not yet formally been awarded the doctoral degree are also eligible, provided they submit valid certification. Only the date of approval of doctoral degree will be taken into account.*

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	Eligibility can be extended for reasons such as maternity, paternity, or parental leave, illness, national service, clinical training, natural disasters, asylum, or for victims of gender-based violence or any other form of violence. ***Maternity leave:*** ***An 18-month flat-rate extension per child** born before or after the date of the successful defence of the PhD degree.* *If an applicant can demonstrate a longer period of leave (i.e. maternity leave or maternity leave combined with parental leave), the eligibility period will be extended by the total duration of actual leave taken.* *The extension to the eligibility period shall be calculated based either on the flat-rate or on the actual duration, whichever is longest; thus, where an extension is requested for several children, the calculation will be based either on the flat-rate or the total duration of actual leave taken* ***Paternity leave:** Extension by **the documented time of paternity leave** taken before the call deadline for each child born before or after the date of the successful defence of the PhD degree* ***Parental leave:** Extension by **the documented time of parental leave** taken before the call deadline for each child born before or after the date of the successful defence of the PhD degree* ***Long-term illness or national service**: extension by the documented amount of leave taken before the call deadline for each incident which occurred before or after the date of the successful defence of the PhD degree*
Publications	To have **at least 1 publication as main author** (**either accepted or published**) as a result of their doctoral work in an international peer-reviewed journal at the time of the call deadline
MSCA Mobility rule	**Researchers must not have resided or carried out their main** activity (work, studies, etc.) in the **country of the recruiting beneficiary (FRANCE) for more than 12 months in the 36 months preceding the date of the call deadline**. ➢ **WARNING: Copies of supporting documents for the date of entry into France and the time of residence are required on request** (ID cards, residence permits, registration documentation, lease agreement, bills, plane tickets, etc.) *Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not considered.*
Nationality	The call is open to researchers of **any nationality** *(Make sure you have a valid identity card or passport for any visa application - passport mandatory for non-EU candidates -in case of selection)*
Language	Applicants whose first language isn't **English** are required to provide official proofs of proficiency of this required language skills, at least Cambridge First Certificate or equivalent official exam *A minimum B2 level in English is required. A variety of English Language tests may be provided, such as TOEIC, TOEFL, TOEFL Internet-based Test, IELTS, CPE, PTE (Pearson Test of English), CAE. Please check to be sure your test results are still valid (some tests are valid for 2 years, whereas CPE and CAE results are valid for life)*
Number of	Each applicant may propose **only one research project in one thematic area**

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applications	
Formal proposal criteria	Application MUST BE submitted in **English before the deadline** (all required support documents must be submitted online **via the call website**) Incomplete applications won't be accepted Mandatory use of templates provided

REACH-UPPA eligibility criteria

5.2.2 STEP 2: Evaluation of the Research Proposal and the Applicant's credential

Applications that meet the **Eligibility criteria** described in 5.2.1 will be sent to a panel of three external experts for review, based on the **applicant's CV, the research project proposal, the personal statement and the reference letters**.

A score will be given according the Table below. Each criterion will be given scores between 0 (lowest) and the Max. Score (indicated below). The **total maximum score is 100**. **The threshold to reach the interview will be 70 out of 100.**

Evaluation of the proposed research project research: /30		
Evaluation	**Max. Score**	**Considerations**
Excellence	**10**	● Quality, clarity, and credibility of proposed research ● Originality of proposed research and awareness of current state-of-the-art ● Appropriateness of the research approach and methodology ● Consideration of gender and diversity aspects, if relevant
Feasibility	**10**	● Feasibility within given timeframe ● Overall coherence, effectiveness, and appropriateness of the work plan. ● Budget evaluation
Impact	**10**	● Recognition of anticipated impact of work ● Evidence of long-term vision ● Publication, dissemination and exploitation plan ● Interdisciplinary positioning of the proposed research ● Respect of the MSCA Green charter
Evaluation of the applicant's credentials: /70		
Evaluation	**Max. Score**	**Considerations**
Experience	**40**	● Career path ● Scientific track record in relation to career stage (publications, awards, dissemination, patents, other results) ● Reference letters ● Previous/current partnerships and collaborations and international experience
Leadership potential	**20**	● Capacity to carry out the research project ● Match between track record and proposed research ● Engagement with stakeholders ● Ability to forge beyond disciplinary specialisms
Career development potential	**10**	● Relevance of the programme at this career stage ● Potential impact on the career development of the researcher ● Commitment to interdisciplinary research ● Scope for new partnerships ● Potential contribution to international research community

Evaluation criteria for Application

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5.2.3 STEP 3: Criteria for interviews

After the experts' evaluations, the Management Team of REACH-UPPA will calculate the **average score** per candidate resulting in a **ranked list**, of all proposals in descending order of scores. The Management Team of REACH-UPPA will then determine which applicants will be invited for the interview based on the rank order. **The threshold to reach the interview will be 70 out of 100** and the maximum number of **applicants invited for interviews will be max. 15 per call (3 per open position)**. An **ethics screening** of all successful candidatures, including the identification of issues non-identified by the applicant will be complementary to the evaluation.

Short-listed candidates will be invited to UPPA to present and discuss their applications with a presentation of **their research project, curriculum, and motivation** in front of the research unit followed by **questions and answers** with the interview panel. At the interview stage, candidates will be assessed by the Interview Panel according to the following criteria:

Based on these criteria, a score will be generated for each interviewed candidate and a ranked list of candidates will be proposed. **The threshold to be considered for the final ranked list is 70 out of 100**. The original application review score will be considered to calculate the **final score** (mean of review and interview scores). These scores will determine the **final short and reserve lists**. In case of ex-aequo, the same criteria as those used in the step 1 - applications (In case of ex-aequo, the PC vote will count double.) will be applied. REACH-UPPA's Selection Committee will determine the final list of retained candidates, and the Management Team of REACH-UPPA will inform all interviewed candidates of the result.

Evaluation /100	Max. Score	Considerations
Excellence of the research project	**30**	● Quality, clarity, and credibility of proposed research ● Originality of proposed research and awareness of current state-of-the-art ● Appropriateness of the research approach and methodology ● Consideration of gender and diversity aspects, if relevant
Feasibility	**20**	● Feasibility within given timeframe ● Overall coherence, effectiveness, and appropriateness of the work plan ● Budget evaluation
Impact	**10**	● Recognition of anticipated impact of work ● Evidence of long-term vision ● Publication, dissemination and exploitation plan ● Adequacy with Research Unit ● Interdisciplinary positioning of the proposed research ● Respect of the MSCA Green charter
Presentation	**20**	● Scientific knowledge ● Research Vision ● Confident and clear communication
Research capability	**10**	●Experience ●Technical capability ● Previous involvements in projects ● Understanding of ethical implications
Leadership potential	**10**	●Evidence of proactivity – e.g. setting up actions such as events, partnerships, networks ● Recent outputs ● Motivation ● Ability to work independently and to take responsibility

Evaluation criteria for interviews

5.2.4 Ethics self-assessment

The REACH-UPPA program will comply with the ethical principles of Horizon Europe.

The **ethics self-assessment check-list** is part of the application form. This list must be completed to identify ethical matters relating to the research topic. Applicants are asked to describe **how the ethical requirements are considered in the PhD research topic.** Moreover, partners of the project (participating in secondments or training) will have to commit

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themselves to follow Horizon Europe ethical principles, rules and guidelines.

5.2.5 Appeal redress procedure

A **Quality Committee** will be in charge of the redress procedure that enables to examine any appeal against the output of the evaluation at any following steps: eligibility check, application review, and interview. Applicants will be able to appeal against the decisions, based on administrative or procedural arguments only. The candidates will have 10 days after the notification of the results of each selection process to appeal. The appeal procedure will have to be completed thanks to **redress request** form available on REACH-UPPA website: https://www.univ-pau.fr/reach-uppa

REACH-UPPA will ensure a truly independent, transparent, excellent and professional evaluation of all applications submitted under the different calls. The openness and transparency of the selection process of REACH-UPPA will be in line with the European Charter and the Code of Conduct for the Recruitment of the Researchers.

5.2.6 Processing of Data

UPPA will process the personal data of the applicants to manage their application in accordance with our selection processes legitimised by the consent that applicants give when applying to the call. REACH-UPPA will not transfer their data to third parties, except to the experts in charge of assessing applications, and UPPA will keep them for a maximum of two years, except in case of legal obligation.
If you wish to exercise your rights of access, rectification, opposition, deletion, limitation or processing of portability, please contact us through email (reach-uppa@univ-pau.fr).

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6 Beginning the Postdoctoral Position

6.1 Estimated time-to-contract

- **By the end of August**, after the process of evaluation has been completed, the Candidate will be informed of his/her chances of joining REACH-UPPA.
- **Selected candidates will have 10 days from the notification of the final decision to confirm their acceptance.** Then, selected candidates will be contacted by the HR Departments of the UPOA and conclude the administrative part in September
- **Indicative starting date: October 2026**

6.2 Working conditions of the Postdoctoral Researcher

Recruited Postdoctoral Researchers (PDRs) will be hired for **a 48-month Research working contract** by UPPA, in accordance with the **French regulations**. In all cases, the employment conditions will be in line with the European Charter and Code. Postdoctoral Researchers will be subject to similar employment conditions and entitlements as permanent researchers regarding working hours, paid annual leave, Health care coverage, maternity/paternity leave, pension and unemployment insurance. They will also be eligible for **family allowance depending on their individual situation**. Gender equality will be guaranteed throughout the recruitment process. Support will be also provided to researchers with disabilities and researchers holding refugee status.

REACH-UPPA Postdoctoral Researcher will benefit from the following advantages

1. The **living allowance** for REACH-UPPA PDRs will be **€3,500 gross per month**. French taxes and social security contributions apply, resulting in **an estimated net monthly salary of approximately €2,880** before income tax.
2. **Mobility allowance (managed by UPPA): up to 10 000 €** to partially cover travels, accommodation, etc. linked to **secondment**s for the project duration
3. **Travel allowance (managed by UPPA) up to 10 000 €** over the 4-year period of the position to cover expenses related to the travel for attendance or participation to conferences, workshops…
4. **Research costs (managed by UPPA)**: Research costs are allocated to each position to cover expenses related to the research activity, including computers, consumables, publications, and other research-related costs. As the use of experimental infrastructures generates significantly higher expenses than non-experimental research, the allocated budget differs accordingly. The research cost budget is set at **€30,000 for non-experimental sciences** and **€60,000 for experimental sciences**.
5. **Each PDR will be allocated a PhD position**, with a standard French PhD salary, co-supervised with a senior supervisor.
6. **Mandatory tailored training, individual support, mentoring**: postdoctoral researchers will design a **Personal Career Development Plan PCDP** at the start of their research and have access to a **wide variety of trainings and workshops**. A **mentor** will be proposed in order to guide and support him/her, in order to facilitate his/her professional integration
7. **Mandatory Secondment** of **3 to 6 months** is with the project partners

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6.3 Secondment opportunities

REACH-UPPA Postdoctoral Researchers will be required to interact with the non-academic sector and with international partners whenever possible during **a period of secondment of 3 to 6 months with a partner of UPPA** (non-academic partner or with an international academic partner). Research areas have already pre-identified partners willing to host the PDRs. The PD candidates will have the freedom to propose another hosting institution for secondments (not present in the list), the adequacy and operational capacity of the institution will be studied.

6.4 Principal benefits of the position

6.4.1 Support services

Upon acceptance into the REACH-UPPA Postdoctoral Programme, postdoctoral researchers (PDRs) may contact the International Welcome Desk for support before and after their arrival. The service provides guidance on administrative procedures (visa, residence permit), housing, university registration, health insurance, taxation, and other practical matters, with dedicated guides and online resources available (https://ri.univ-pau.fr/en/international-welcome-desk.html=)

Researchers will also be offered **free purposed language classes**, through the local language centres (CRL). UPPA works in close collaboration with local authorities to help researchers find **accommodation** (e.g. rental accommodation at the university residencies for staff first arriving in France). PDRs will have access to university restauration facilities and the administrative restaurant open to staff at UPPA. Moreover, they will have access to the cultural association at UPPA (ACLP) providing UPPA staff with preferential prices for cultural and sport activities. In addition, PDRs will have access to the sport training facilities on the UPPA premises (SUAPS). UPPA is connected to an **extensive public transportation network** providing easy access to these premises, the city centre, international airports and railway

The **PDRs will be provided with an appropriate workplace computer and access to laboratory resources.** They will have access to the existing research infrastructure in the endowment of their assigned research unit (depending on the specifics of the research field), including digital platforms within the research centres relevant to their subject area. Every PDR will also be offered access to **libraries and bibliographic services, online resources, and meeting rooms**.

6.4.2 Personalised supervision

A personalised supervision that will combine **academic supervision, peer exchanges, interaction with external partners and training through:**

- **Each PDR will be supervised by a Mentor, an experienced researcher from one of UPPA's research units**, selected according to the research area and project topic.
- **A Personal Career Development Plan (PCDP)** will be established within the first three months of the fellowship. It will define the research objectives, publication strategy, training needs, and career development activities, including both scientific and transferable skills. The PCDP will be regularly reviewed and updated through meetings between the PDR and the mentor (every two months)**.** Annual progress reports will be submitted and assessed by the Steering Committee during follow-up meetings.
- **Secondment supervisors** will provide complementary supervision and support during mobility periods.
- **Networking and peer exchange** will be promoted through participation in seminars, workshops, and international conferences.

6.4.3 Gender dimension and other diversity aspects in research

The programme promotes **gender equality and equal opportunities** by actively encouraging applications from all genders, implementing **UPPA's Gender Equality Plan**, and ensuring **gender-balanced evaluation and interview panels**.

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6.4.4 Training

The **REACH-UPPA training programme** combines individual research projects, international mobility and secondments with a tailored joint training programme designed to strengthen both scientific and transferable skills. It supports PDRs in developing expertise in their research field while enhancing their career prospects in academic and non-academic sectors. The programme is structured around **four pillars**: (1) **research excellence**, through advanced training in research methodologies and data management; (2) **transferable skills**, including ethics, gender and diversity in research, leadership, communication and research management; (3) **grant writing**, with training on funding opportunities and proposal preparation (including ERC proposals); and (4) **mentoring and teaching**, providing career guidance, supervision training and teaching opportunities.

Non-academic partners will contribute through **secondments, seminars and mentoring**, offering exposure to innovation, knowledge transfer and R&D beyond academia.

6.4.5 Career

The **REACH-UPPA programme** is a career development initiative based on scientific excellence, innovative training and international mobility, open to outstanding researchers of any nationality. It aims to support career development in both academic and non-academic sectors, foster new collaborations in a stimulating research environment, and promote transferable skills, including awareness of the gender and diversity dimension in research.

The programme provides **tailored training and mentoring**, enabling PDRs to develop independent research profiles and enhance their employability, in line with the **European Skills Agenda**. Each researcher will design a **Personal Career Development Plan** with the support of dedicated mentors, guiding their scientific progress and career development throughout the fellowship.

REACH-UPPA also benefits from UPPA's **innovation ecosystem**, including the *Sud Aquitaine Innovation* initiative, offering opportunities for interaction with industry, entrepreneurship training and exposure to innovation activities. Through collaboration with non-academic partners, PDRs will gain valuable insight into R&D beyond academia, strengthening their innovation capacity and long-term career prospects.

6.4.6 Mobility

Postdoctoral researchers will engage in international, interdisciplinary, and intersectoral collaborations. **Each PDR will undertake a 3–6 month secondment** with an international academic or non-academic partner, including REACH-UPPA associated organizations, under joint supervision. Short-term visits to other laboratories will also be encouraged, and researchers may propose alternative host institutions to maximize the impact of their projects and broaden their global network.

6.4.7 Other benefits

The **University of Pau and Pays de l'Adour** is a leading multidisciplinary university, excelling in energy and environmental research, and offering vibrant international collaboration opportunities. Located between the surf-friendly Atlantic coast and the scenic Pyrenees, with rich Basque, Béarnais, and Occitan culture, the region combines outstanding quality of life, sports, festivals, and easy access to major cities like Toulouse, Bordeaux, Bilbao, and Barcelona.

More information on moving to Pau, the gateway to the mountain range of the Pyrenees, can be obtained on the website of UPPA's International Welcome Desk: https://ri.univ-pau.fr/en/international-welcome-desk.html and on the city's website: https://www.pau.fr//accueil

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7 Contact

For any question, please contact the Management Team of REACH-UPPA:

Name	Function	Details
Isabelle BARAILLE	Project Coordinator - PC	reach-uppa@univ-pau.fr
Elisabeth TINSEAU	Project Manager - PM	reach-uppa @univ-pau.fr

For any question, please contact the Management Team of REACH-UPPA at reach-uppa@univ-pau.fr

Consult the FAQ of REACH-UPPA at https://www.univ-pau.fr/reach-uppa

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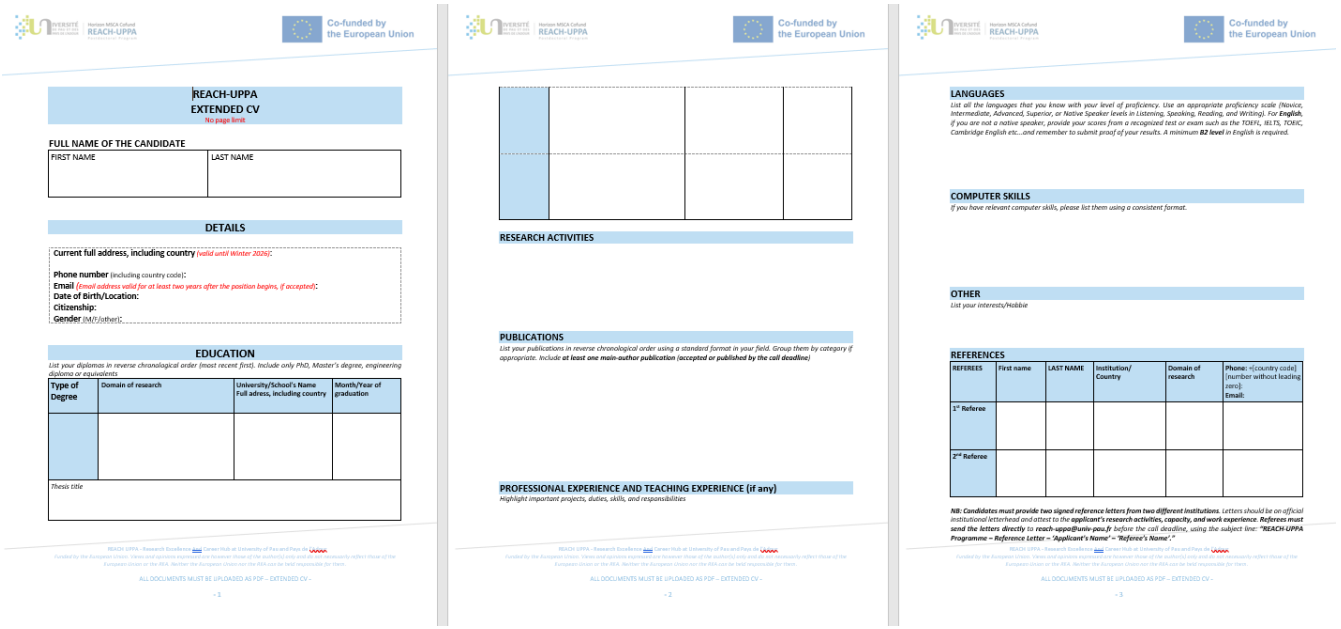
8 ANNEX I. Application form templates

To submit the Application, please use the mandatory templates downloadable from the Website: https://www.univ-pau.fr/reach-uppa or application platform : https://aap.univ-pau.fr

8.1 Candidate's extended CV



REACH-UPPA
EXTENDED CV
No page limit

FULL NAME OF THE CANDIDATE

FIRST NAME	LAST NAME

DETAILS

Current full address, including country *(valid until Winter 2026)*:

Phone number (including country code):
Email *(Email address valid for at least two years after the position begins, if accepted)*:
Date of Birth/Location:
Citizenship:
Gender (M/F/other):

EDUCATION

List your diplomas in reverse chronological order (most recent first). Include only PhD, Master's degree, engineering diploma or equivalents

Type of Degree	Domain of research	University/School's Name Full adress, including country	Month/Year of graduation
Thesis title			

RESEARCH ACTIVITIES

PUBLICATIONS

List your publications in reverse chronological order using a standard format in your field. Group them by category if appropriate. Include ***at least one main-author publication (accepted or published by the call deadline)***

PROFESSIONAL EXPERIENCE AND TEACHING EXPERIENCE (if any)

Highlight important projects, duties, skills, and responsibilities

LANGUAGES

List all the languages that you know with your level of proficiency. Use an appropriate proficiency scale (Novice, Intermediate, Advanced, Superior, or Native Speaker levels in Listening, Speaking, Reading, and Writing). For ***English****, if you are not a native speaker, provide your scores from a recognized test or exam such as the TOEFL, IELTS, TOEIC, Cambridge English etc…and remember to submit proof of your results. A minimum* ***B2 level*** *in English is required.*

COMPUTER SKILLS

If you have relevant computer skills, please list them using a consistent format.

OTHER

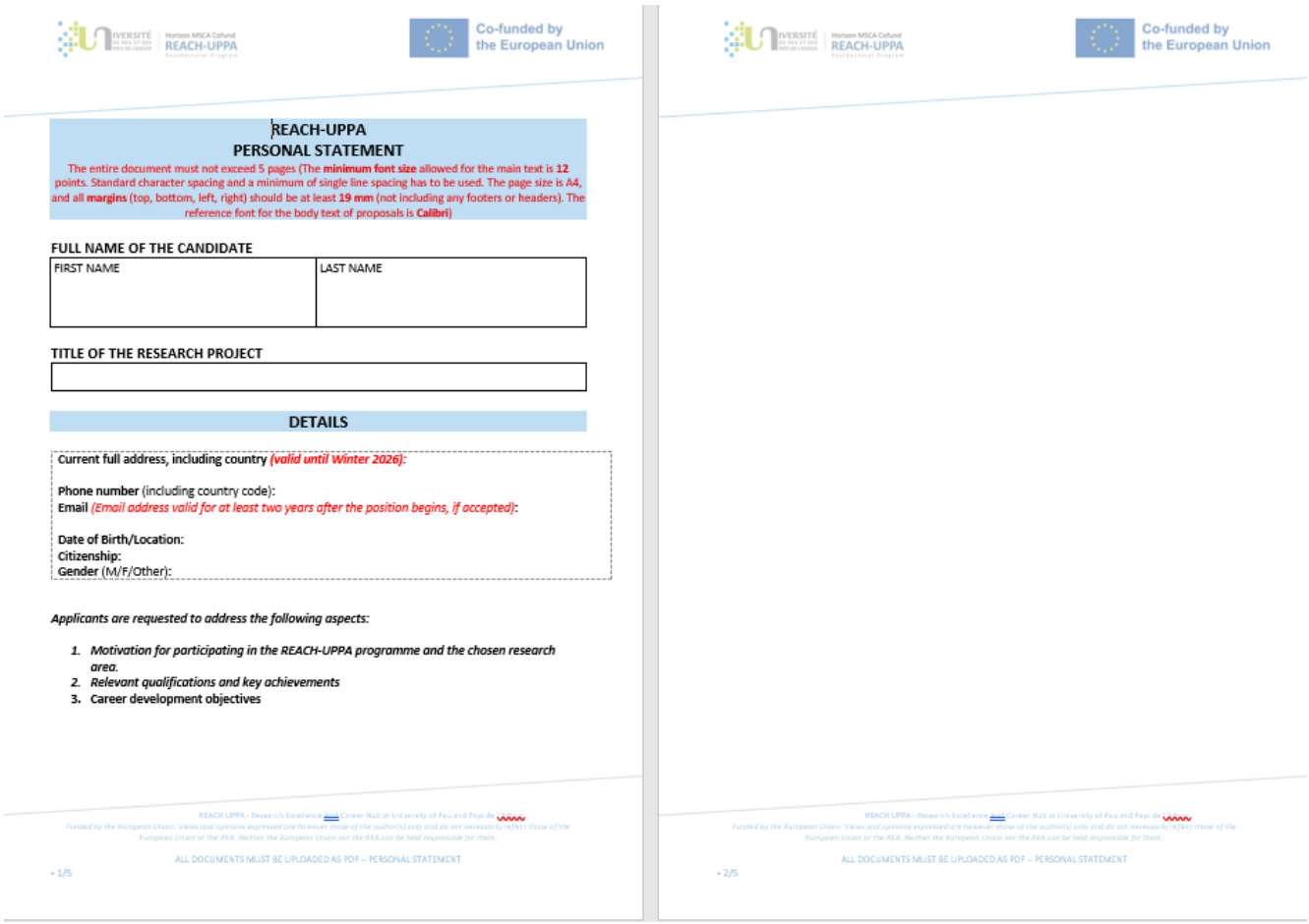
List your interests/Hobbie

REFERENCES

REFEREES	First name	LAST NAME	Institution/ Country	Domain of research	Phone: +(country code) (number without leading zero) Email:
1st Referee					
2nd Referee					

NB: Candidates must provide two signed reference letters from two different institutions*. Letters should be on official institutional letterhead and attest to the* ***applicant's research activities, capacity, and work experience. Referees must send the letters directly*** *to* ***reach-uppa@univ-pau.fr*** *before the call deadline, using the subject line: "****REACH-UPPA Programme – Reference Letter – 'Applicant's Name' – 'Referee's Name'.****"*

8.2 Personal statement



REACH-UPPA
PERSONAL STATEMENT

The entire document must not exceed 5 pages (The **minimum font size** allowed for the main text is **12** points. Standard character spacing and a minimum of single line spacing has to be used. The page size is A4, and all **margins** (top, bottom, left, right) should be at least **19 mm** (not including any footers or headers). The reference font for the body text of proposals is **Calibri**)

FULL NAME OF THE CANDIDATE

FIRST NAME	LAST NAME

TITLE OF THE RESEARCH PROJECT

DETAILS

Current full address, including country ***(valid until Winter 2026)*****:**

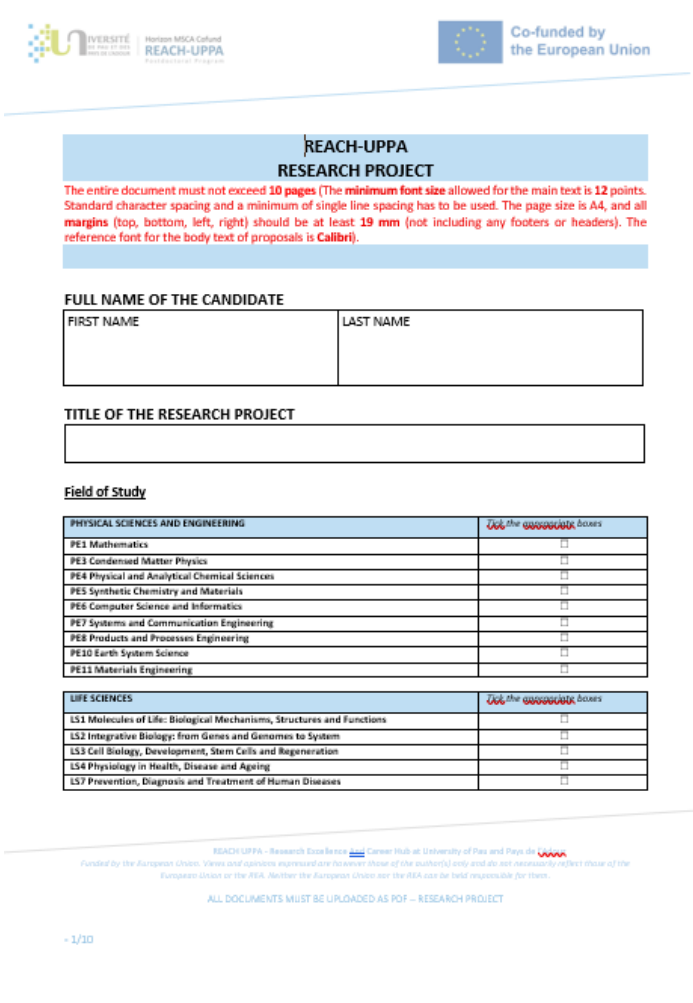
Phone number (including country code):
Email *(Email address valid for at least two years after the position begins, if accepted)*:

Date of Birth/Location:
Citizenship:
Gender (M/F/Other):

Applicants are requested to address the following aspects:

1. ***Motivation for participating in the REACH-UPPA programme and the chosen research area.***
2. ***Relevant qualifications and key achievements***
3. **Career development objectives**

8.3 Research project



REACH-UPPA
RESEARCH PROJECT

The entire document must not exceed **10 pages** (The **minimum font size** allowed for the main text is **12** points. Standard character spacing and a minimum of single line spacing has to be used. The page size is A4, and all **margins** (top, bottom, left, right) should be at least **19 mm** (not including any footers or headers). The reference font for the body text of proposals is **Calibri**).

FULL NAME OF THE CANDIDATE

FIRST NAME	LAST NAME

TITLE OF THE RESEARCH PROJECT

Field of Study

PHYSICAL SCIENCES AND ENGINEERING	Tick the appropriate boxes
PE1 Mathematics	☐
PE3 Condensed Matter Physics	☐
PE4 Physical and Analytical Chemical Sciences	☐
PE5 Synthetic Chemistry and Materials	☐
PE6 Computer Science and Informatics	☐
PE7 Systems and Communication Engineering	☐
PE8 Products and Processes Engineering	☐
PE10 Earth System Science	☐
PE11 Materials Engineering	☐

LIFE SCIENCES	Tick the appropriate boxes
LS1 Molecules of Life: Biological Mechanisms, Structures and Functions	☐
LS2 Integrative Biology: from Genes and Genomes to System	☐
LS3 Cell Biology, Development, Stem Cells and Regeneration	☐
LS4 Physiology in Health, Disease and Ageing	☐
LS7 Prevention, Diagnosis and Treatment of Human Diseases	☐

ALL DOCUMENTS MUST BE UPLOADED AS PDF – RESEARCH PROJECT

LS8 Environmental Biology, Ecology and Evolution	☐
LS9 Biotechnology and Biosystems Engineering	☐

SOCIAL SCIENCES & HUMANITIES	Tick the appropriate boxes
SH1 Individuals, Markets and Organisations	☐
SH2 Institutions, Governance and Legal Systems	☐
SH3 The Social World and Its Interactions	☐
SH4 The Human Mind and Its Complexity	☐
SH5 Texts and Concept	☐
SH6 The Study of the Human Past	☐
SH7 Human Mobility, Environment, and Space	☐
SH8 Studies of Cultures and Arts	☐

STATE OF THE ART

RESEARCH OBJECTIVES

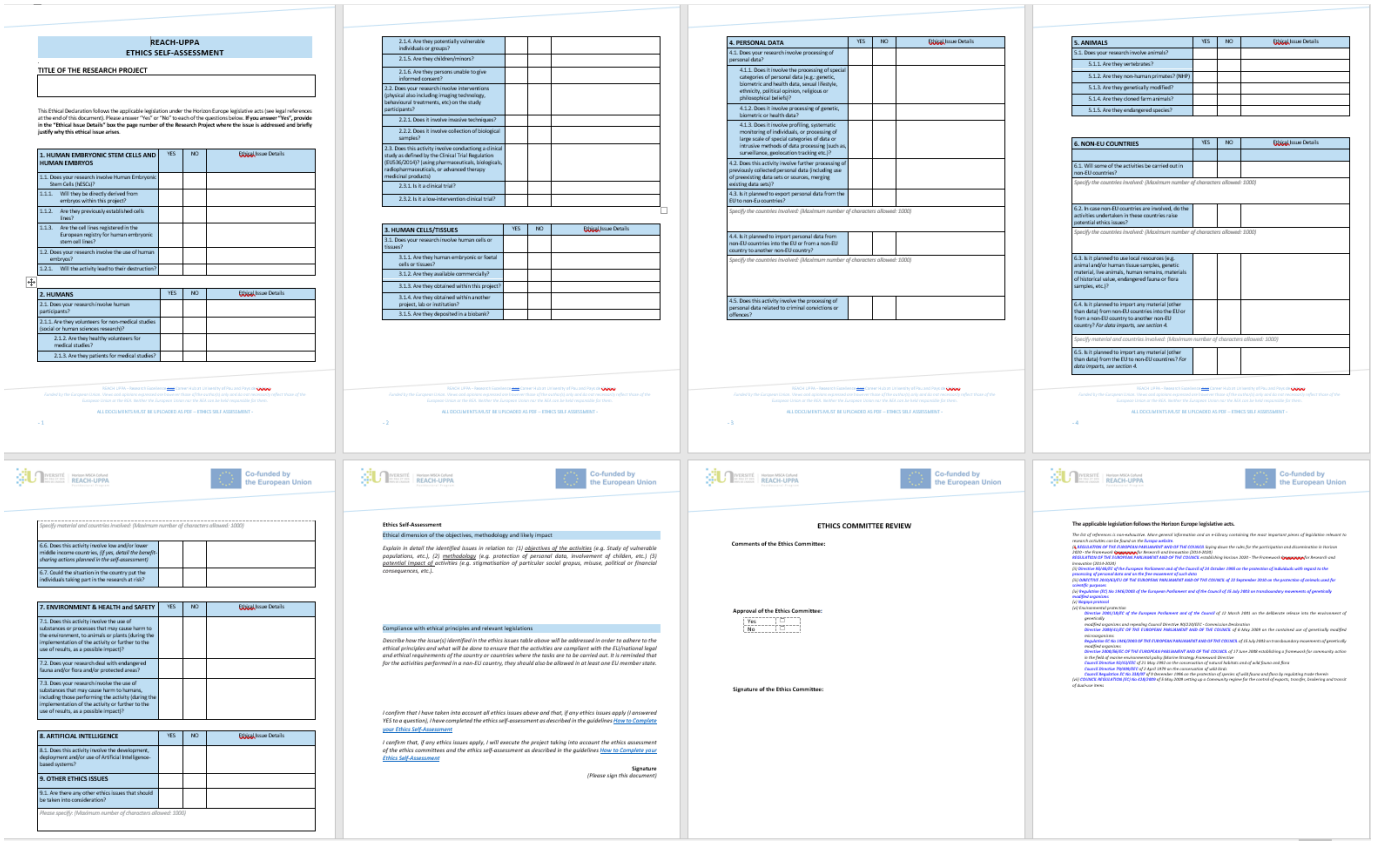
POSITIONING IN RELATION TO THE SCIENTIFIC AREAS DEVELOPED WITHIN THE RESEARCH UNIT(S)

SCIENTIFIC METHODOLOGY

48-MONTH WORK PLAN AND BUDGET

ALL DOCUMENTS MUST BE UPLOADED AS PDF – RESEARCH PROJECT

8.4 Ethics self-assessment



REACH-UPPA
ETHICS SELF-ASSESSMENT

TITLE OF THE RESEARCH PROJECT

This Ethical Declaration follows the applicable legislation under the Horizon Europe legislative acts (see legal references at the end of this document). Please answer "Yes" or "No" to each of the questions below. **If you answer "Yes", provide in the "Ethical Issue Details" box the page number of the Research Project where the issue is addressed and briefly justify why this ethical issue arises.**

1. HUMAN EMBRYONIC STEM CELLS AND HUMAN EMBRYOS	YES	NO	Ethical Issue Details
1.1. Does your research involve Human Embryonic Stem Cells (hESCs)?			
1.1.1. Will they be directly derived from embryos within this project?			
1.1.2. Are they previously established cells lines?			
1.1.3. Are the cell lines registered in the European registry for human embryonic stem cell lines?			
1.2. Does your research involve the use of human embryos?			
1.2.1. Will the activity lead to their destruction?			

2. HUMANS	YES	NO	Ethical Issue Details
2.1. Does your research involve human participants?			
2.1.1. Are they volunteers for non-medical studies (social or human sciences research)?			
2.1.2. Are they healthy volunteers for medical studies?			
2.1.3. Are they patients for medical studies?			
2.1.4. Are they potentially vulnerable individuals or groups?			
2.1.5. Are they children/minors?			
2.1.6. Are they persons unable to give informed consent?			
2.2. Does your research involve interventions (physical also including imaging technology, behavioural treatments, etc.) on the study participants?			
2.2.1. Does it involve invasive techniques?			
2.2.2. Does it involve collection of biological samples?			
2.3. Does this activity involve conducting a clinical study as defined by the Clinical Trial Regulation (EU)536/2014? (using pharmaceuticals, biologicals, radiopharmaceuticals, or advanced therapy medicinal products)			
2.3.1. Is it a clinical trial?			
2.3.2. Is it a low-intervention clinical trial?			

3. HUMAN CELLS/TISSUES	YES	NO	Ethical Issue Details
3.1. Does your research involve human cells or tissues?			
3.1.1. Are they human embryonic or foetal cells or tissues?			
3.1.2. Are they available commercially?			
3.1.3. Are they obtained within this project?			
3.1.4. Are they obtained within another project, lab or institution?			
3.1.5. Are they deposited in a biobank?			

4. PERSONAL DATA	YES	NO	Ethical Issue Details
4.1. Does your research involve processing of personal data?			
4.1.1. Does it involve the processing of special categories of personal data (e.g. genetic, biometric and health data, sexual lifestyle, ethnicity, political opinion, religious or philosophical beliefs)?			
4.1.2. Does it involve processing of genetic, biometric or health data?			
4.1.3. Does it involve profiling, systematic monitoring of individuals, or processing of large scale of special categories of data or intrusive methods of data processing (such as, surveillance, geolocation tracking etc.)?			
4.2. Does this activity involve further processing of previously collected personal data (including use of preexisting data sets or sources, merging existing data sets)?			
4.3. Is it planned to export personal data from the EU to non-EU countries?			
Specify the countries involved: (Maximum number of characters allowed: 1000)			
4.4. Is it planned to import personal data from non-EU countries into the EU or from a non-EU country to another non-EU country?			
Specify the countries involved: (Maximum number of characters allowed: 1000)			
4.5. Does this activity involve the processing of personal data related to criminal convictions or offences?			

5. ANIMALS	YES	NO	Ethical Issue Details
5.1. Does your research involve animals?			
5.1.1. Are they vertebrates?			
5.1.2. Are they non-human primates? (NHP)			
5.1.3. Are they genetically modified?			
5.1.4. Are they cloned farm animals?			
5.1.5. Are they endangered species?			

6. NON-EU COUNTRIES	YES	NO	Ethical Issue Details
6.1. Will some of the activities be carried out in non-EU countries?			
Specify the countries involved: (Maximum number of characters allowed: 1000)			
6.2. In case non-EU countries are involved, do the activities undertaken in these countries raise potential ethics issues?			
Specify the countries involved: (Maximum number of characters allowed: 1000)			
6.3. Is it planned to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?			
6.4. Is it planned to import any material (other than data) from non-EU countries into the EU or from a non-EU country to another non-EU country? *For data imports, see section 4.*			
Specify material and countries involved: (Maximum number of characters allowed: 1000)			
6.5. Is it planned to import any material (other than data) from the EU to non-EU countries? For data imports, see section 4			

7. ENVIRONMENT & HEALTH and SAFETY	YES	NO	Ethical Issue Details
7.1. Does this activity involve the use of substances or processes that may cause harm to the environment, to animals or plants during the implementation of the activity or further to the use of results, as a possible impact?			
7.2. Does your research deal with endangered fauna and/or flora and/or protected areas?			
7.3. Does your research involve the use of substances that may cause harm to humans, including those performing the activity (during the implementation of the activity or further to the use of results, as a possible impact)?			

8. ARTIFICIAL INTELLIGENCE	YES	NO	Ethical Issue Details
8.1. Does this activity involve the development, deployment and/or use of Artificial Intelligence-based systems?			
9. OTHER ETHICS ISSUES			
9.1. Are there any other ethics issues that should be taken into consideration?			
Please specify: (Maximum number of characters allowed: 1000)			

Ethics Self-Assessment

Ethical dimension of the objectives, methodology and likely impact

Explain in detail the identified issues in relation to: (1) objectives of the activities (e.g. Study of vulnerable populations, etc.), (2) methodology (e.g. protection of personal data, involvement of children, etc.) (3) potential impact of activities (e.g. stigmatisation of particular social groups, misuse, political or financial consequences, etc.).

Compliance with ethical principles and relevant legislations

Describe how the issue(s) identified in the ethics issues table above will be addressed in order to adhere to the ethical principles and what will be done to ensure that the activities are compliant with the EU/national legal and ethical requirements of the country or countries where the tasks are to be carried out. It is reminded that for the activities performed in a non-EU country, they should also be allowed in at least one EU member state.

I confirm that I have taken into account all ethics issues above and that, if any ethics issues apply (I answered YES to a question), I have completed the ethics self-assessment as described in the guidelines How to Complete your Ethics Self-Assessment

I confirm that, if any ethics issues apply, I will execute the project taking into account the ethics assessment of the ethics committees and the ethics self-assessment as described in the guidelines How to Complete your Ethics Self-Assessment

Signature
(Please sign this document)

ETHICS COMMITTEE REVIEW

Comments of the Ethics Committee:

Approval of the Ethics Committee:

Yes	
No	

Signature of the Ethics Committee:

The applicable legislation follows the Horizon Europe legislative acts.

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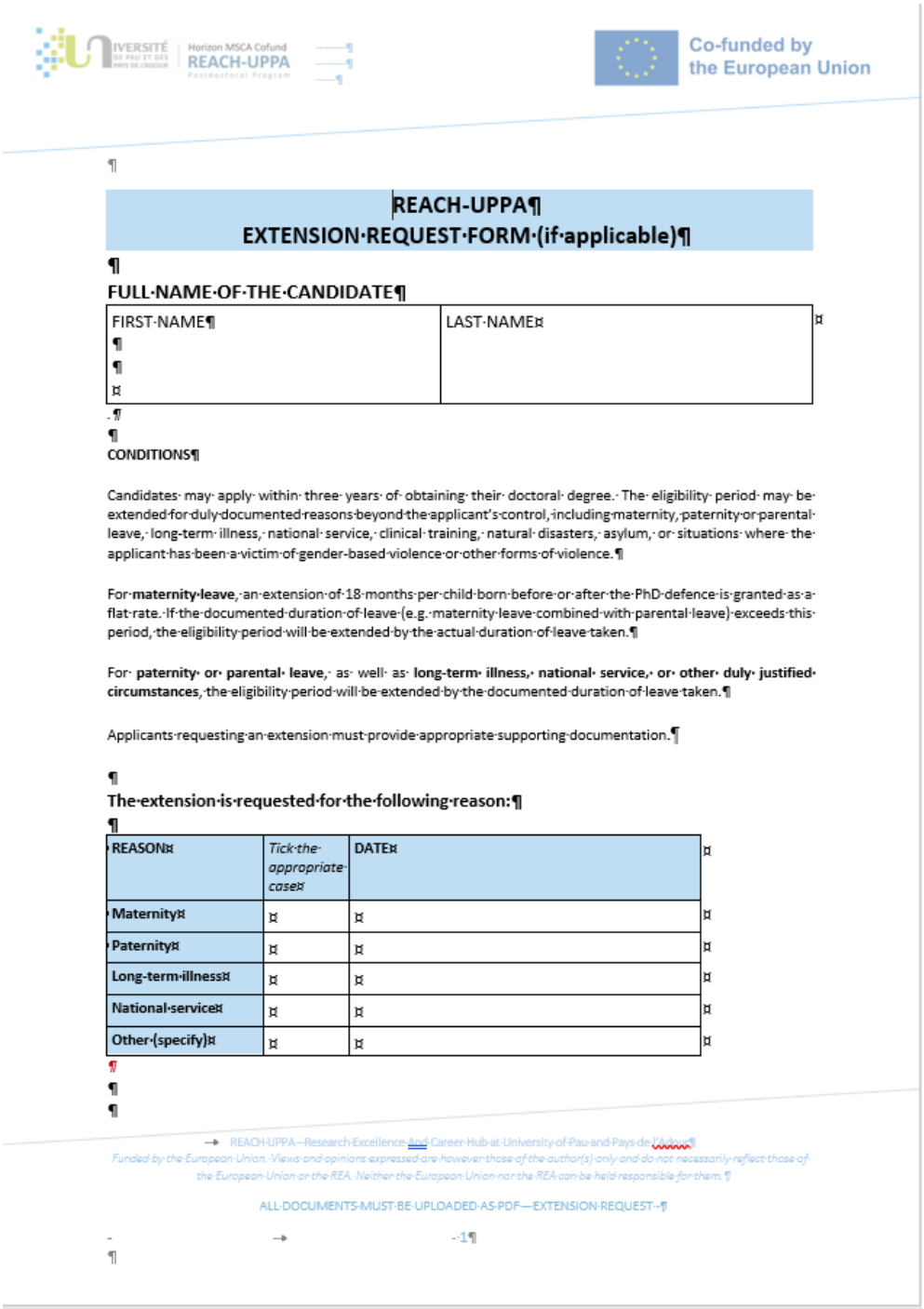
8.5 Request for extension - seniority rule – *if applicable*



REACH-UPPA
EXTENSION REQUEST FORM (if applicable)

FULL NAME OF THE CANDIDATE

FIRST NAME	LAST NAME

CONDITIONS

Candidates may apply within three years of obtaining their doctoral degree. The eligibility period may be extended for duly documented reasons beyond the applicant's control, including maternity, paternity or parental leave, long-term illness, national service, clinical training, natural disasters, asylum, or situations where the applicant has been a victim of gender-based violence or other forms of violence.

For **maternity leave**, an extension of 18 months per child born before or after the PhD defence is granted as a flat rate. If the documented duration of leave (e.g. maternity leave combined with parental leave) exceeds this period, the eligibility period will be extended by the actual duration of leave taken.

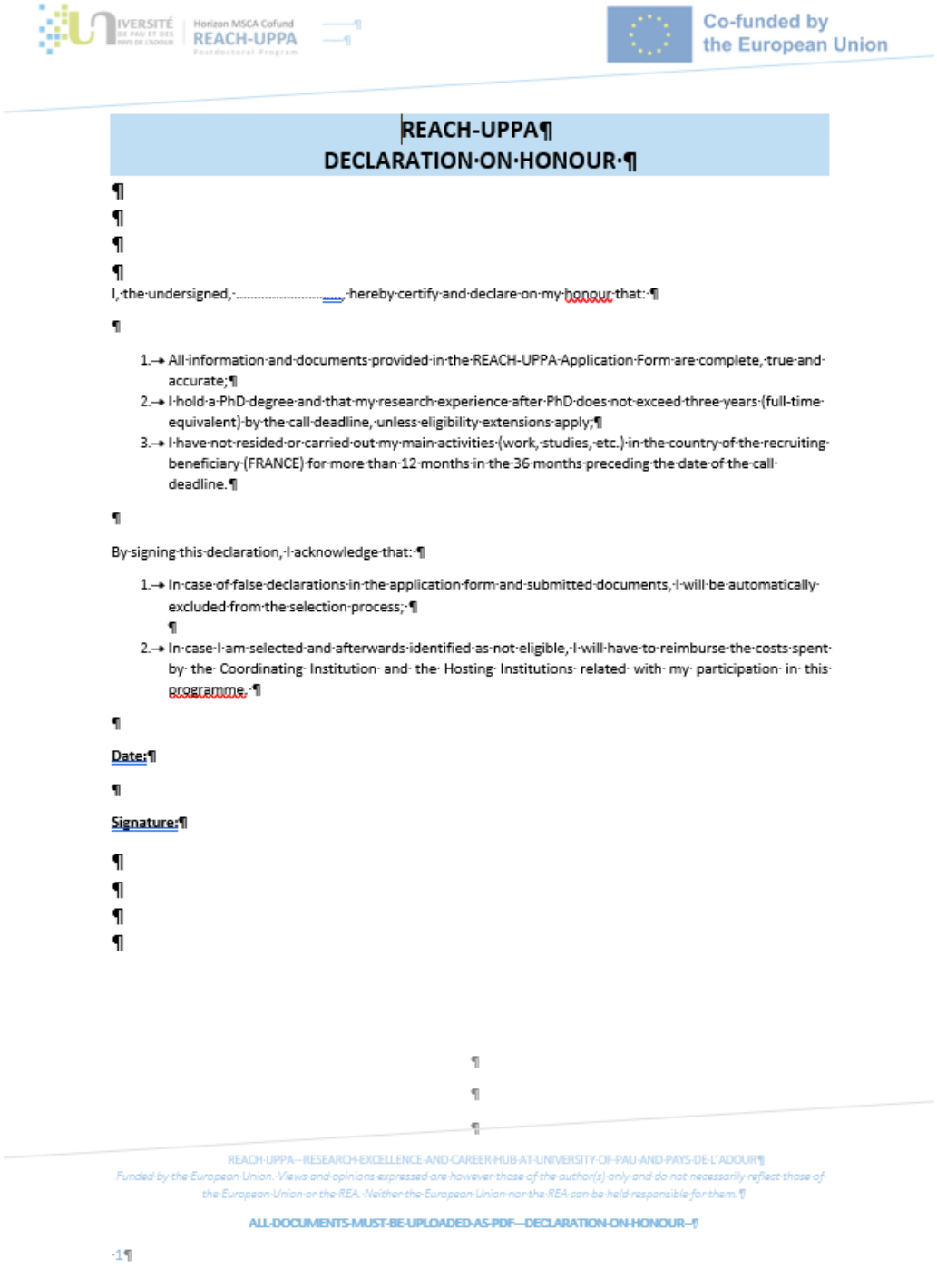
For **paternity or parental leave**, as well as **long-term illness, national service, or other duly justified circumstances**, the eligibility period will be extended by the documented duration of leave taken.

Applicants requesting an extension must provide appropriate supporting documentation.

The extension is requested for the following reason:

REASON	*Tick the appropriate case*	DATE
Maternity		
Paternity		
Long-term illness		
National service		
Other (specify)		

8.6 Declaration on honour



REACH-UPPA
DECLARATION ON HONOUR

I, the undersigned, ..., hereby certify and declare on my honour that:

1. All information and documents provided in the REACH-UPPA Application Form are complete, true and accurate;
2. I hold a PhD degree and that my research experience after PhD does not exceed three years (full-time equivalent) by the call deadline, unless eligibility extensions apply;
3. I have not resided or carried out my main activities (work, studies, etc.) in the country of the recruiting beneficiary (FRANCE) for more than 12 months in the 36 months preceding the date of the call deadline.

By signing this declaration, I acknowledge that:

1. In case of false declarations in the application form and submitted documents, I will be automatically excluded from the selection process;
2. In case I am selected and afterwards identified as not eligible, I will have to reimburse the costs spent by the Coordinating Institution and the Hosting Institutions related with my participation in this programme.

Date:

Signature:

REACH-UPPA – RESEARCH EXCELLENCE AND CAREER HUB AT UNIVERSITY OF PAU AND PAYS DE L'ADOUR
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ALL DOCUMENTS MUST BE UPLOADED AS PDF – DECLARATION ON HONOUR

1

9 ANNEX II. Detailed description of research areas

INTERDISCIPLINARY MISSION 1. Adapt coastal, forest and mountain ecosystems to make them more resilient

RESEARCH AREA	1.3 Interacting mechanisms of adaptation to intertwined climate-driven challenges

Detailed description of the research area

The fate of fish populations is challenged by many pressures, among which climate change poses itself multiple threats. Direct climatic manifestations include increase of both average and variance in temperature, and extreme hydraulic events (droughts and floods) that are becoming more frequent, more intense, longer, and less predictable. This can affect individual growth, survival and reproductive success in a selective manner, so that not only the density of the population is altered but its genetic composition also evolves as a response to natural selection, shaping phenotypic diversity alongside developmental plasticity and behavioral flexibility. Whether these adaptive processes can keep up the pace of environmental alteration determines the resistance and resilience of natural populations to climate change, and is crucial to build conservation strategies that rely on evolutionary response to climate change.

Although it is clear that climate change can cause selection on phenotypic traits, the question of evolutionary response to this selection is still open, for three main reasons. First, we need to know if the genetic variation of natural populations for functional traits is sufficient to fuel the evolutionary response to natural selection. Second, different mechanisms of adaptation can interfere, with phenotypic plasticity or behavioral flexibility possibly hampering or favoring natural selection. Third, the diversity of environmental variables that are directly and indirectly affected by climate change exposes traits to selective pressures that can be spatially and temporally heterogeneous in the direction of selection, the response to which is complex to predict. In sexually-reproducing species, sexual selection must also be accounted for when tackling all these questions because it can both favor traits that are not necessarily adaptive, and fluctuate in direction or intensity under the action of climate change, thereby possibly boosting or hindering adaptation.

Knowledge and competencies required

The successful candidate should be able to conduct experiments driven by theory in evolutionary ecology, in order to test hypotheses on the interactions between multiple selective pressures and multiple adaptive mechanisms. The candidate must justify training in evolutionary ecology, and experience in experimental design, genotypic and phenotypic measurements, statistical analysis of complex data. Ability to synthetize empirical results in theoretical models is a plus

Presentation of the research group and contact persons

ECOBIOP - Joint Research Unit Behavioral Ecology and Fish Population Biology (UMR INRAE/UPPA 1224)
https://aquapole.bordeaux-aquitaine.hub.inrae.fr/umr-ecobiop https://ecobiop.com/
The UMR ECOBIOP is a joint unit of INRAE and UPPA, based at the site in Saint-Pée sur Nivelle and the Montaury campus on the Basque coast in Anglet.
The research undertaken at UMR ECOBIOP (Behavioural Ecology and Fish Population Biology) is aimed towards understanding, predicting and advising managers on the demographic and evolutionary trajectories of fish populations facing anthropogenic alteration of their environment. The research group gathers disciplines like physiology, behavioral ecology, population dynamics, genetics and evolutionary ecology, combined in long-term monitoring, experiments in controlled systems and modelling approaches. The research facilities, collections and staff expertise include mesocosms for controlled experiments in behavior and ecology, population and habitat survey in the field (electrofishing, telemetry, physico-chemistry...), individual phenotyping (video analysis, metabolism, sclerochronology), genetic diversity (local lab and access to national platforms).

Research Unit Referent:

- **Jacques Labonne** is the head of the lab. He develops research in demogenetics, behavioural and evolutionary

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ecology. j.labonne@univ-pau.fr
Presentation of the secondments/short stay opportunities
• *Centre for Biological Diversity - University of St Andrews (UK) https://www.st-andrews.ac.uk/biology/* • *MacLife International lab (with University of the Basque Country, Spain, and University of California Berkeley, USA) https://liamaclife.org/* • *Scimabio-Interface (FR): https://www.scimabio-interface.fr/*

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INTERDISCIPLINARY MISSION 2. Reconcile development, a safe environment and preserved biodiversity

RESEARCH AREA	2.1 From environmental to human health through advanced sustainable chemical & biological approaches

Detailed description of the research area

This thematic area focuses on the adoption of a multidisciplinary approach, closely linking environmental systems to human and animal health. It also aims to integrate innovative chemical, biological and computational methods to address key challenges, contributing to environmental sustainability, global health and food security.
The PD candidates must propose a research project with a multidisciplinary approach to cover at least one of the key research topics described below:

- ***Innovative experimental methodologies and analytical approaches***: A key focus is to improve both environmental sustainability of terrestrial and aquatic ecosystems and food security by developing experimental and analytical methodologies that can accurately determine the occurrence and fate of key chemical and biological contaminants in environmental samples, as well as degradation and metabolic products of those contaminants. The topic addresses both priority and emerging contaminants, such as endocrine disruptors (pharmaceuticals, PFAS, …), and technology-critical elements. State of the art molecular and speciation techniques will examine their occurrence in environmental systems to understand their fate and degradation. Some biological contaminants are also emerging, such as, toxin-producing microorganisms and antibiotic-resistant microorganisms. These contaminants are found in all environmental compartments and may ultimately enter the food chain, thus potentially affecting the health of organisms and humans. Application of advanced techniques like isotopic composition analysis allows to enhance environmental traceability and quality, that have further implications for sustainable practices and food security. These scientific insights will be crucial for environmental sciences but also policy development.
- ***Chemical modelling and discrimination of contaminants biological impacts:*** In response to regulatory requirements like the European Commission's REACH and Water Framework directives, which focus on the ecotoxicology of chemicals and on aquatic ecosystem quality, the topic incorporates advanced computational methods to address knowledge gaps on contaminant persistence and cumulative effects in the environment. Quantitative Structure-Activity Relationships (QSAR) is a key approach, correlating chemical structure with biological activity or chemical reactivity. To overcome the challenges in such complex modeling, this topic employs machine learning methods and deep neural networks, that can construct direct mappings between molecular descriptors and quantities of interest without a priori structural equations. The research utilizes various machine learning algorithms, including Support Vector Machines, Random Forests, Artificial Neural Networks, Deep Learning, and Gradient Boosting Machines. However, recognizing the limitations of using these methods as "black boxes," the topic aims to screen potential environmental issues and to identify new experimental or analytical approaches to be performed.
- ***Microbial and nature-based methods for sustainable agriculture, water management and healthcare*:** With the objective of reaching a more sustainable agriculture, this topic will aim to improve plant health using the power of the microbiome (from soil or from plants directly). This approach of nature-based solutions will provide solutions with less impacts of the environment (including human and animal health) but also have the possibility of designing new solutions for emergent diseases and strategies for pollutants attenuation. Similarly, the topic aims to investigate biological responses for early detection of ecosystem health status, enabling rapid remediation approaches and prevention of disorders in animals and humans. The research results must tackle some implication for human exposome, exploring new chemical and biological indicators, including molecular or isotopic tracers, for early disease detection in humans, thus improving healthcare and prevention strategies
- ***Advanced sustainable methods for pollution abatement and increasing societal awareness:*** Environmental sustainability is a key component of this topic, and this interdisciplinary approach, including green and environmental chemistry, and molecular biology and environmental microbiology, aims to reduce pollution, preserve biodiversity, and promote sustainable practices. To better constrain or even reduce these pollutions and their impact on living systems, the

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topic proposes to investigate sustainable approaches, such as ecological-friendly photocatalysis and bioremediation, to degrade and transform harmful substances in water and soil into less toxic products. The pollutants and degradation products will be studied through the development of advanced experimental and analytical methodologies, while both their toxicity should be followed through experiment or modelling approaches. The main results should also be used to promote public outreach and education to environmental sustainability, which are critical components of the topic. Initiatives should aim at raising awareness about chemical issues and promoting responsible practices, ensuring that scientific advancements translate into tangible societal benefits.

Knowledge and competencies required

The successful candidate will be young researcher experienced in environmental chemistry, environmental microbiologist, analytical chemistry and/or a physical chemistry to make a link between the different scientific knowledge hosted at IPREM.
For the computational approach, a PhD degree in Mathematics, with strong skills in coding/programming and interest for chemistry is recommended.

Presentation of the research groups and contact persons

Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM) - Joint Research Unit CNRS / UPPA (UMR 5254) https://iprem.univ-pau.fr/en/index.html
IPREM gathers 300 members around the development of fundamental knowledge in physico-chemistry, analytical chemistry and microbiology, in relation to applications concerning the structure of the living, the management of the environment and the functional properties of different classes of materials.
Their skills are based on analytical strategies, modeling, physico-chemical approaches, fine studies of structures and reactivity, development, characterization and implementation at different scales. They make it possible to display an original position in the field of applications in many industrial sectors both at national and international level.
Laboratory of Mathematics and its Applications of Pau (LMAP) – Joint Research Unit CNRS / UPPA (UMR 5142) https://lma-umr5142.univ-pau.fr/en/home.html
LMAP is specializing in both fundamental and applied mathematics. Its scientific activity is structured around four major areas: probability & statistics, algebra & geometry, analysis of partial differential equations, and numerical simulation. The laboratory develops advanced methods in stochastic modeling, statistical inference, algebraic geometry, nonlinear PDEs, and high-performance numerical schemes. The LMAP is part of the IPRA federation Its expertise supports domains such as environmental modeling and data-driven decision processes.
Research Unit Referent:

- **Dr. Jean-Marc Sotiropoulos** is IPREM's Director – jeanmarc.soritopoulos@univ-pau.fr
- **Dr. Cecile Courrèges** is IPREM's deputy director - cecile.courreges@univ-pau.fr
- **Prof. Philippe Poncet** is LMAP's Director - philippe.poncet@univ-pau.fr
- **Prof. Gilles Carbou** is LMAP's deputy director – gilles.carbou@univ-pau.fr

Presentation of the secondments/short stay opportunities (

- *University of Ottawa - Department of Biology (CA) https://www.uottawa.ca/faculty-science/biology*
- *University of Gdansk - Applied Mathematics (PL) https://ftims.pg.edu.pl/en/institute-appmath*
- *Consejo Superior Investigaciones Científicas - IDAEA (ES) https://www.idaea.csic.es*
- *University Oviedo (ES) https://www.uniovi.es/en/investiga/nuestrainvestigacion/centros*
- *TotalEnergies One Tech - TRTG (TotalEnergies Research & Technology Gonfreville) (FR) https://totalenergies.com/company/strength/innovation-rd*
- *Florida State University - National High Magnetic Field Laboratory (US) https://nationalmaglab.org*

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RESEARCH AREA	2.3 Durability and optimization of engineered structures

Detailed description of the research area

The mechanics of materials and structures is a vast field that is approached at UPPA through 2 categories of applications: (i) the mechanics of geomaterials, geostructures and civil infrastructures, considered in the context of bio-inspired materials and eco-materials, and with a perspective towards the sustainability of civil infrastructures, and (ii) the optimization of engineered structures with a current emblematic application in aeronautics. These challenges call on skills in applied mathematics and solid mechanics, with training in physics and chemistry. Building on such a conducive environment, two research areas are open:

(i) Data and physics-driven modelling geomechanics and multiphysics problems by the implementation of machine learning and data driven analyses. Historically, modelling the mechanical response of materials has been the cornerstone on which focused many research efforts on the solid mechanics community. With few experimental data, rational, physics-based, modelling provided robust extrapolations. At the same time computational methods were developed for a better prediction of structural responses under more and more extreme conditions coupling environmental effects to mechanical effects. This picture changed drastically over the past two decades with the advent of field measurement techniques and the systematic use of tomography. Today, experiments generate enormous amount of data. Still, theoretical models are calibrated on “as small as possible” sets of data, and in most cases only parts of the data are used for validation purposes also.

IA-based tools opened the path for a broader use of large experimental data bases and combining modelling principles with data stands today at the center of most research efforts (see e.g., Thermodynamics consistent neural networks or data driven computational schemes). The implementation of machine learning and data driven analyses in mechanics and multiphysics is no longer an emerging subject. It is a must and the upfront challenge is to apply this methodology to severely non-linear and coupled multiphysics problems.

Research groups at UPPA have acquired a solid international reputation in physics-based modelling of geomaterials subjected to coupled multiphysics problems. Combined with the experimental (e.g. X-ray and Neutron Tomography, optical and acoustic techniques) and theoretical expertises (e.g., on lattice modelling and data driven nonlinear computational mechanics) available within at UPPA, decisive advances in geomechanics are expected.

In this context, the proposed research project should focus on the mechanics of geomaterials, geostructures and civil infrastructures, considered possibly in the context of next construction materials (e.g., bio-inspired or eco-materials) and with a perspective towards the sustainability of civil infrastructures.

(ii) Optimization in the presence of uncertainties for shape optimization to avoid leading to designs that are ill-suited to the actual practical configuration. Uncertainty is everywhere in an application context: it relates to a parameter (loading, shape itself, etc.). Not taking it into account can lead to designs that are ill-suited to the actual configuration. So, it's crucial to be aware of it, and to integrate it right from the design stage. Mathematically, it is described by a random variable. Several points of view are possible and have been explored at LMAP.

The most naïve is to optimize for the worst possible case. In practice, it is often too pessimistic, and its mathematical analysis and numerical implementation are very difficult. Another natural approach is to optimize for each realization and try to describe the behavior of the minimizer as a random variable. This is very costly in terms of computing time and the conclusions are limited: while the notion of random set exists (there are even several distinct notions), that of variance is unclear and there are no concentration results. A second approach consists in integrating the random aspect into a deterministic optimization criterion: typically, the expectation of a criterion, more generally its moments and the probabilities of overruns. In the field of shape optimization, these issues have not been explored. In an industrial context, the cost of this calculation must be compared with the expected gain.

In this context, the project should focus on the use and development of mathematical methods for shape optimization in a setting where the problem parameters are uncertain and should include a numerical implementation component with controlled computational cost to address questions arising from industry or other disciplines (physics, biology, etc.).

Knowledge and competencies required

Depending on the focus of his project, the successful candidate should have either:

(i) A background in computational geomechanics and interest in machine learning analyses in solid mechanics.

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(ii) Applicants must have core competencies in infinite-dimensional optimisation and the numerical analysis of partial differential equations (PDEs), as well as knowledge of mechanics, programming and uncertainty quantification. Ideally, applicants will have a PhD in shape optimisation.

Presentation of the research groups and contact persons

Laboratory of Complex Fluids and their Reservoirs (LFCR) – Industrial Joint Research Unit CNRS / UPPA (UMR 5150) https://lfc.univ-pau.fr/en/organisation/presentation.html
Created in 2003, LFCR brings together approximately 120 people across four research teams and two transversal research axes, supported by several industrial and academic chairs. Its scientific scope spans multiple spatial and temporal scales - from the nanometer to hundreds of kilometers and from the nanosecond to the million-year scale - covering the physics and chemistry of interfaces, thermodynamics of fluids under flow, reservoir geology, geomechanics, and geophysics. Positioned at the crossroads of energy, environment, and georesources, LFCR develops innovative research on subsurface systems, including reservoir characterization, CO_2 storage, fluid‑rock interactions, the behavior of complex fluids in confined or porous media, and multi-physics analyses of subsurface and infrastructure materials. This broad, multidisciplinary expertise makes the LFCR a key national and international actor in subsurface sciences and geomechanics at large.

Laboratory of Mathematics and its Applications of Pau (LMAP) - CNRS/UPPA joint research unit (UMR 5142) https://team.inria.fr/cagire/ https://lma-umr5142.univ-pau.fr/en/home.html
LMAP is specializing in both fundamental and applied mathematics. Its scientific activity is structured around major areas such as: **analysis of partial differential equations**, **numerical simulation, optimization, probability, statistics**, **algebra** and **geometry**. The laboratory develops advanced methods in stochastic modeling, nonlinear PDEs, optimization and high-performance numerical schemes, statistical inference, algebraic geometry. It is strongly connected to applications in, **shape optimization**, **inverse problems, porous media**, **waves, fluid mechanics, turbulence**. Its expertise supports domains such as aerothermodynamics, environmental modeling, geo-engineering, and data-driven decision processes.

Research Units Referents:

- **Dr. Jean-Paul Callot** is LFCR's director – jean-paul.callot@univ-pau.fr
- **Dr. Daniel Brito** is LFCR's geosciences team leader – daniel.brito@univ-pau.fr
- ***Prof. Philippe Poncet*** is LMAP's Director - philippe.poncet@univ-pau.fr
- ***Prof. Gilles Carbou*** is LMAP's deputy director – gilles.carbou@univ-pau.fr

Presentation of the secondments/short stay opportunities

- *Civil and Environmental Engineering - Northwestern University (US) https://www.mccormick.northwestern.edu/civil-environmental/*
- *Mechanical Engineering dept - University of Zaragoza (ES) https://ingenieriamecanica.unizar.es*
- *Computer Science Department - KU Leuven (Belgique) https://wms.cs.kuleuven.be/cs/english*
- *Sixense NECS (FR) - https://www.necs.fr/?lang=en*

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INTERDISCIPLINARY MISSION 3. Organise energy subsidiarity at the territorial level

RESEARCH AREA	3.1 Hydrogen production

Detailed description of the research area

Hydrogen production has gained significant attention as a clean energy source, with subsurface hydrogen generation and photo(electro)catalysis emerging as promising avenues.

For the natural approach, so called white hydrogen, current research has focused largely on the geochemical and physical processes that govern hydrogen production and storage in subsurface environments. Recent advancements have been made in understanding the basic mechanisms of hydrogen generation through various types of mineral-water interactions (oxidation process of deep mantle rocks, nuclear radiolysis of water, organic matter oxidation), the H_2-prone domains for exploration, and the role of microbial activity. Additionally, exploration and monitoring technologies, including geochemical ones, have evolved, allowing for more precise data collection and analysis of subsurface hydrogen dynamics. This includes building of novel devices for gas monitoring, determination of the physical and thermodynamical properties of H_2 in subsurface settings, and parametrization of simulation software used to predict the thermal, pressure and fluid composition of the reservoirs in subsurface.

For the catalytic approach, so called green hydrogen, the need to design more sustainable and efficient organic materials or co-reactants is a keystone for developing the hydrogen generation from renewable energies sources such as sun or wind. Recent advancements have demonstrated the large interest to use either carbonaceous synthetic or abundant bio-based materials or side-products of industry, i.e. paper/wood, to generate green H_2. On the one hand, the photocatalytic splitting of water has been shown by a life cycle analysis, that a colloidal system, where the photocatalysts are dispersed as nanoparticles in water would be the cheapest technology for H_2 production. In that case, novel pi-conjugated materials especially designed for photocatalysis are required as sustainable catalysts avoiding platinum. On the other hand, methanol is one of the commercially viable hydrogen carriers that can overcome the infrastructure challenges associated with the storage and transportation of hydrogen. As a sustainable hydrogen carrier, methanol should be reformed to hydrogen prior to the point of usage by photocatalytic procedure.

However, efforts need to be fulfilled in understanding hydrogen production processes in subsurface environments and hydrogen generation by catalytic processes, anion exchange membrane electrolyzers, including the sustainability and social science perspectives to ensure that hydrogen production is both environmentally sustainable and socially responsible, including (i) novel materials, physicochemical processes and devices for green hydrogen production, (ii) exploration and monitoring technologies for natural hydrogen assessment and (iii) sustainability assessment.

Project proposals should include at least one of the following topics:

(i) Subsurface Processes, Novel Materials and Devices for Sustainable Hydrogen Production (a) investigate the mineral-water interactions and other subsurface physicochemical processes that contribute to hydrogen generation. Analyze the behavior of hydrogen migration in geological formations, focusing on their dynamics and the factors influencing their migration and storage, or (b) develop novel materials or/and catalytic procedures for H_2 evolution directly exploiting solar energy or sustainable electric energy, from either water or methanol and understand the underlying mechanisms for process optimization by experimental and theoretical approaches.

(ii) Exploration and Monitoring Technologies: Develop and deploy advanced monitoring systems for real-time data acquisition and analysis of hydrogen production in subsurface environments. Integrate monitoring data with predictive models to better understand and optimize hydrogen resources assessment, and production processes. Develop concept regarding the geological characteristics of natural hydrogen systems looking for exploration.

(iii) Sustainability Assessment: Conduct a comprehensive evaluation of the environmental impacts of subsurface hydrogen production, including life cycle analysis (LCA) of carbon footprint, water usage, and ecosystem effects. Develop strategies and best practices for mitigating potential environmental impacts associated with hydrogen production.

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Knowledge and competencies required
Depending on the topic, the successful candidate for this post-doctoral research position will have a different background of expertise. For the scientific and applied aspects of hydrogen production in subsurface environments, the candidate should possess a Ph.D. in Geosciences, Geochemistry, Chemical Engineering, Environmental Science, or a closely related field as well as experience in evaluating the sustainability of energy production systems. For the hydrogen generation aspects, either from water splitting or methanol reforming, the candidate should possess a PhD in Chemistry, with a strong background in material sciences (organic and polymer materials). Knowledges/skills either in catalytic or electrochemistry will be a plus. The candidate abilities to collaborate with social scientists and contribute to interdisciplinary research that addresses the social implications of hydrogen production will be a crucial point.
Presentation of the research groups and contact persons
Laboratory of Complex Fluids and their Reservoirs (LFCR) –Joint Research Unit CNRS / UPPA (UMR 5150) https://lfc.univ-pau.fr/en/organisation/presentation.html Created in 2003, LFCR brings together approximately 100 people across four research teams, supported by several industrial and academic chairs. Its scientific scope spans multiple spatial and temporal scales - from the nanometer to hundreds of kilometers and from the nanosecond to the million-year scale - covering the physics and chemistry of interfaces, thermodynamics of fluids under flow, reservoir geomechanics, geochemistry, geophysics and geology. Positioned at the crossroads of energy, environment, and georesources, LFCR develops innovative research on subsurface systems, including reservoir characterization, fluid–rock interactions, and the behavior of complex fluids in confined or porous media applied to georesources assessment, production and monitoring, and storage of gases (H_2, CO_2). This broad, multidisciplinary expertise makes the LFCR a key national and international actor in subsurface science. **Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM) -** Joint Research Unit CNRS / UPPA (UMR 5254) https://iprem.univ-pau.fr/en/index.html IPREM gathers 300 members around the development of fundamental knowledge in physico-chemistry, analytical chemistry and microbiology, in relation to applications concerning the structure of the living, the management of the environment and the functional properties of different classes of materials. Their skills are based on analytical strategies, modeling, physico-chemical approaches, fine studies of structures and reactivity, development, characterization and implementation at different scales. IPREM develops works on organic colloidal strategies to photo-generate green hydrogen and original approaches for CO_2 reduction into solar fuels. IPREM has an original position in the field of applications in many industrial sectors both at national and international level. ***Research Unit Referents:*** • **Dr. Jean-Paul Callot** is LFCR's director – jean-paul.callot@univ-pau.fr • **Dr. Daniel Brito** is LFCR's geosciences team leader – daniel.brito@univ-pau.fr • **Dr. Jean-Marc Sotiropoulos** is IPREM's Director -jean-marc.sotiropoulos@univ-pau.fr • **Dr. Cecile Courrèges** is IPREM's deputy director - cecile.courreges@univ-pau.fr
Presentation of the secondments/short stay opportunities
• *Institute of Chemical Research of Catalonia (ES) https://iciq.org/* • *CSIRO (AU) https://www.csiro.au/* • *45-8 Energy https://458energy.com/*

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RESEARCH AREA	3.3 AI for Energy

Detailed description of the research area

To accelerate the deployment of cleaner energy technologies, their development time and costs need to be considerably reduced. A key enabler for this is stronger reliance on computational fluid dynamics (CFD), to reduce time-consuming and very costly physical testing. However, current models have been highly tuned for today's technology but cannot be relied on when moving into new design spaces. This is because traditional modeling based on physical reasoning and intuition has its limits and model calibration was performed using limited amounts of data. Nevertheless, recent advances in computing power and experimental diagnostics have led to the generation of vast amounts of data, and modern machine learning (ML) methods have emerged capable of identifying complex relationships between inputs (data) and outputs (models). In this topic, it is therefore aimed to develop novel models that are considerably more accurate and reliable by exploiting the complementarity between advanced turbulence models and modern machine-learning, based on the development of full Reynolds stress models (RSM), their numerical implementation, hybridization with LES and utilization for industrially relevant applications, venturing into the realm of data-driven model development so far.
Most of the machine-learning based approaches currently developed are based on simple turbulence models, trying to get rid of their numerous limitations by a local adaptation of the coefficients by use of a neural network or symbolic regression approaches. The CAGIRE team is internationally recognized as a leading expert in advanced turbulence models, based on the transport of the Reynolds stress, which makes possible a reach representation of the physics. Without sacrificing this richness, it is now possible to couple this physically sound approach to machine learning to still enrich the models by making the coefficients function of the various invariants of the flow, aiming at a greater generality of the models.
Another novelty is the use of machine-learning in a multi-fidelity approach, which will make it possible to switch locally and automatically to the most appropriate approach for local flow conditions. While mixture-of-experts approaches have already been proposed for switching from one EVM model to another, an original and more general approach consists in developing approaches that can transition from an EVM model to an RSM model, and possibly to an LES model, by changing the scales driving the partitions of partly-resolved and partly-unresolved physical variables.

The PDR should propose a project covering at least one of the following subjects:

- Develop next generation of industry-ready design tools by integrating the Machine Learning framework with Reynolds-stress models.
- Develop a new paradigm of self-adaptive multi-fidelity approach based on machine-learning capable of achieving the appropriate trade-off between robustness, cost and accuracy required by industrial applications

It is expected that the model developments will be carried out using open-source software, such that this significant step forward in modeling capabilities will help spread the new paradigm of data-driven models in industry. In the long term, these advanced tools will provide the basis for accelerating development of new energy technologies that will help energy transition.

Knowledge and competencies required

Since the CAGIRE group is specialized in advanced turbulence models and in particular Reynolds-stress models, the successful candidate is expected to bring an expertise in machine-learning for physical models. Ideally, the PDR has a PhD on the topic of machine-learning based turbulence modelling, whatever the type of turbulence models.

Presentation of the research group and contact persons

Laboratory of Mathematics and its Applications of Pau (LMAP) - CNRS/UPPA joint research unit (UMR 5142) https://team.inria.fr/cagire/ https://lma-umr5142.univ-pau.fr/en/home.html
LMAP is specializing in both fundamental and applied mathematics. Its scientific activity is structured around major areas such as: **analysis of partial differential equations**, **numerical simulation, optimization, probability, statistics**, **algebra** and **geometry**. The laboratory develops advanced methods in stochastic modeling, nonlinear PDEs, optimization and high-performance numerical schemes, statistical inference, algebraic geometry. It is strongly connected to applications in, **shape optimization**, **inverse problems, porous media**, **waves, fluid mechanics, turbulence**. Its expertise supports domains such as aerothermodynamics, environmental modeling, geo-engineering, and data-driven decision processes.

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The CAGIRE team brings together researchers from different backgrounds (physical modeling, applied mathematics, experimentation) who have gradually developed a common vision of what should be the CFD tools of the future, in terms of modelling and numerical resolution approaches. This objective is based on the strong motivation to be useful to industrial actors from different fields. The targeted applications may involve many important phenomena, such as turbulence; shocks; couplings of low-Mach-number aerodynamics with acoustic waves; multiphase flows; variable density; conjugate heat transfer; etc. Among these complex phenomena, turbulence plays a central role insofar as it is a dimensioning constraint for CFD in most industrial configurations. It is indeed the comparison of the requirements in terms of scale of description, numerical accuracy and computational cost that guides the choice of physical models and numerical methods. Our multidisciplinary approach allows us to study our application fields, mainly related to aeronautical and automotive propulsion, energy production and the reduction of their environmental impacts, from three different angles (experimentation/physical analysis, modeling, simulation).

Research Unit Referents:

- **Prof. Philippe Poncet** is LMAP's Director - philippe.poncet@univ-pau.fr
- **Prof. Gilles Carbou** is LMAP's deputy director – gilles.carbou@univ-pau.fr

Presentation of the secondments/short stay opportunities

- *University of Melbourne - Computational Mechanics - Department of Mechanical Engineering (AU)*
  https://mechanical.eng.unimelb.edu.au/research/computational-mechanics

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INTERDISCIPLINARY MISSION 4. Question borders and meet the challenge of differences

RESEARCH AREA	4.1 How to face Immigration: the administrative manufacture of undesirables

Detailed description of the research area

Immigration is an ever-increasing phenomenon worldwide. Today, over 280 million people live outside their country of origin. In South America, for example, new nations have historically been lands of immigration. As such, countries have implemented essentialist policies and regulations that have manufactured 'undesirables' at the administrative level. Other countries have closed their borders selectively because of changes in the migratory flows influenced by international events (e.g. European inter-war political instability, United States' protectionist retreat). Thus, the question on how to 'sort' migrants arise: Should we welcome immigrants, and if yes to what extent? How does the 'host-country' problem differ from nation to nation? How have governments practiced political, racial, ethnic and religious selections? Finally, how have administrative practices defined 'undesirability'?

The new countries of the southern part of the American continent - known since the 1960s as the Southern Cone - have historically been lands of immigration. As Juan Bautista Alberdi proclaimed in Argentina, and Benjamín Vicuña Mackenna in his wake in Chile, "to govern is to populate": the issue of immigration is consubstantial with the formation of new nation states. In the second half of the 19th century, in all these countries, it was the subject of essential state regulation, as demonstrated in Argentina by the 1853 constitution - which encouraged immigration - or the 1876 law on immigration and colonisation. Everywhere, until the Uruguayan Constitution of 1917, the rights of foreigners were constitutionally guaranteed and gradually extended, even though, since the mid-nineteenth century, there had been regular debates on the "defense of the race" and the protection of national labour (Expulsion Act, Argentina, 1902).
However, the First World War marked a break in several respects. Firstly, it put an end to the great migratory flows that had fed the American continent for decades. Secondly, it was followed, firstly in the United States, by a major protectionist retreat (quotas) which led to fears in the countries of the Southern Cone of a massive influx of "bad" migrants to add to the war-wounded. Lastly, Europe was entering a period of great political instability: the Bolshevik Revolution, the fascist upsurges in Italy and Germany and the Spanish Civil War were sending tens of thousands of people, perceived as dangerous agitators, into exile.

From then on, even though their constitutions made it very difficult, if not impossible, to explicitly combat undesirables of any kind, the countries of the Southern Cone endeavored to selectively close their borders (Chile, 1918; Argentina, 1919). The 1929 crisis exacerbated the effects of these restrictive policies, which became widespread across the subcontinent throughout the 1930s. This crisis also exacerbated nationalist sentiments, which in turn reinforced eugenic principles. In the name of "protecting the nation's sociobiological heritage", all the countries of the Americas enacted migration laws aimed at preventing the arrival of immigrants who, because of their nationality, "racial" group, or physical and intellectual make-up, were judged to be dangerous subjects. Everywhere, the question of how to sort immigrants arose: should we welcome - and to what extent - anti-fascist militants, Jews fleeing persecution and Spanish republicans? Do the answers vary from one country to another?

The project proposal should analyse how, in the countries of the Southern Cone and for the period between the two world wars, a 'counter policy' was implemented for foreigners applying to immigrate. How, within well-established legislative and even constitutional frameworks, did governments seek to practise political, racial, ethnic and religious selection? How, ultimately, have administrative practices defined the contours of undesirability?
The project proposal should tackle around this central question. While the issue of migrant selection has already been studied for the United States and some European countries, this is not the case for the countries under consideration here. The comparative approach will focus mainly on the Southern Cone (Argentina, Chile, Uruguay and even Brazil) but will also include comparisons with administrative practices in France and above all with Spain, a major emigration basin

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to America and a major part of the Atlantic migratory system. This will make it possible to analyse migratory flows and the circulation of standards and practices simultaneously. Eventually, the project may be extended to other European countries.

The project proposal should be structured around the central theme of the administrative construction of undesirability: logically, the first task will be to draw up an inventory of the measures aimed at regulating immigration between the two wars, and to understand the political and administrative process involved. It is also likely that this intense regulatory activity was accompanied by major political debates, fueled by experts (jurists, demographers, economists, publicists) who formed autonomous fields at the time, but who also came together in learned institutions, congresses and so on. The press is obviously a valuable source for understanding the political impact of attempts to regulate immigration administratively. The question of the transnational circulation of these practices (and their justification) will then have to be raised, which could ultimately give rise to cross-cutting analyses of undesirability in relation to the classic modes of rejecting the other (xenophobia, anti-Semitism, racism).

Knowledge and competencies required

The suitable candidate should be an expert in the history of migration, with a perfect command of Spanish, English and, if possible, French.

Presentation of the research group and contact persons

Identities, Territories, Expressions, Mobilities (ITEM) - UPPA research unit (UR 3002)
https://item.univ-pau.fr/fr/accueil.html
ITEM brings together specialists in history, art history, archaeology, anthropology, and Spanish civilization. Its identity lies in a strongly multidisciplinary approach applied across a wide chronological span, from the Middle Ages to the present. The laboratory focuses on the Pyrenean area, whose cross-border dynamics, population movements, and global connections (including the Americas and Africa) shape its research themes. This territorial anchoring is combined with broad comparative perspectives on long-term human processes, governance, and cultural interactions. Research addresses issues such as territorial construction, heritage processes, human–nature relations, identity transformations, and artistic production.

Research Unit Referent:

- **Prof. Laurent Jalabert** is ITEM's Director – laurent.jalabert@univ-pau.fr
- **Prof. Véronique Lamazou-Duplan** is ITEM's deputy director - veronique.lamazou-duplan@univ-pau.fr

Presentation of the secondments/short stay opportunities (hosting institution, duration)

- *School of Interdisciplinary Advanced Social Studies - National University of San Martin (AR)*
  https://www.unsam.edu.ar/escuelas/eidaes/

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INTERDISCIPLINARY MISSION 5. Represent and build the territories of the future

RESEARCH AREA	5.1 Embedded Intelligence and Digital Twins to accelerate the Digital Transition

Detailed description of the research area

Digital technologies have huge potential to address the challenges faced by sustainable development, climate change as well as proposing innovative services for smarter territories: monitoring of ecosystems, optimizing usage of natural resources, qualifying and quantifying the impacts of human activities and mitigation measures, increasing resilience of fragile communities, etc, to name a few. This research area investigates 2 promising digital technologies of cyber-physical systems to contribute to the development of digital tools to better understand environmental ecosystems, achieve environmental targets and propose innovative services for territories.

(i) Embedded Intelligence: The maturity of Artificial Intelligence (AI) methods and associated software libraries coupled with the increased processing power of microcontroller boards used for building cost-effective Internet-of-Things (IoT) sensing devices enable the so-called "Embedded Intelligence" approach where the AI processing tasks can be realized in the sensing device itself. Not relying on high bandwidth transmission systems and heavy Internet servers for complex AI processing unlock a wide range of environmental applications that often need to deploy very low-power smart sensing systems in very remote areas. For instance, many environmental surveillance applications aim at monitoring and quantifying biodiversity which in turn often need advanced image analysis and identification for specific indicators. Deploying smart sensing systems with Embedded Intelligence can typically provide a solution for these applications.

(ii) Digital Twins (DT) is an approach to accurately represent a physical object through a virtual digital model. The DT model provides a virtualized environment to test, experiment and predict various behavior and outcomes of objects without stressing the object and its resources. For instance, an environmental ecosystem with all deployed sensors could be represented by a DT, along with an accurate energy model, to study/predict the entire system lifespan capability for implementing a remote environmental surveillance application. Avoiding running expensive experiments in remote environments, or to encounter a shorter battery lifespan due to unexpected environmental conditions, provides helpful insights to properly scale the deployment and to make tradeoffs accordingly.

These 2 digital technologies are linked together in many real-world applications: advanced sensing systems with Embedded Intelligence collect real-time data that can be used for smart modeling and optimisation capabilities but also by providing data fusion from multiple sources and integrated into DT models to make optimized solutions easier to use for stakeholders and easier to exploit by decision-making processes. By addressing "Sustainable Development" challenges with these 2 digital technologies, we are actually addressing in a holistic manner how to efficiently collect relevant data and how to efficiently exploit these data.

The research proposal may address challenges related to Embedded Intelligence or Digital Twins independently, or explore their combined use by tackling Embedded Intelligence challenges within a Digital Twin context.

Knowledge and competencies required

PhD in Computer Science, related to one or more of the following domains:

- Distributed Systems
- Application of Artificial Intelligence methods to Distributed Systems
- Digital Twins
- Internet-of-Things
- Wireless Sensor Networks

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- Communication Protocols
Presentation of the research unit and contact persons
Computer Science Research Laboratory of UPPA (LIUPPA) - UPPA research unit (UR 3000) https://liuppa.univ-pau.fr/en/home.html LIUPPA is a research laboratory in digital sciences at UPPA, specializing in computer science, information systems, and digital technologies. Its work focuses on software engineering, data management, human–machine interaction, web technologies, and intelligent systems. The unit develops methods, models, and tools to support digital transformation in areas such as smart territories, cybersecurity, and digital services. Research topics include semantic web, data interoperability, distributed architectures, multimedia processing, and user-centred design. LIUPPA combines strong theoretical foundations with applied research carried out in collaboration with industrial, institutional, and academic partners. ***Research Unit Referent:*** • **Prof. Philippe Roose** is LIUPPA's Director – philippe.roose@univ-pau.fr • **Prof. Ernesto Exposito** is LIUPPA's deputy director - Ernesto.Exposito-garcia@univ-pau.fr • **Dr. Sebastien Laborie** is LIUPPA's deputy director - Sebastien.Laborie@univ-pau.fr
Presentation of the secondments/short stay opportunities
• *WAZIUP e.V. (DE) https://www.waziup.org/*

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RESEARCH AREA	5.2 Territories and Mobility

Detailed description of the research area

Territory and Mobilities looks at ways to improve access across a territory while fighting global warming. This research area is divided into two subtopics:

(i) *Territories, Mobility and Health* A first sub-topic focuses on the relationship between mobility and access to health services in rural and mountainous areas which are particularly affected, across most European countries, by population ageing and a more limited provision of health services. Mobility constraints therefore constitute a key driver of delayed and foregone care in these areas. Grounded in management and organizational studies, while drawing on related disciplines such as geography, economics, and sociology, this research aims to identify innovative mobility solutions that combine technological and organizational dimensions (e.g., adapted transport systems, territorial coordination mechanisms, and hybrid arrangements integrating physical mobility and e-health). The objective is to design concrete and innovative solutions to improve access to health services in these areas. A comparative European perspective will further enrich the analysis by examining territories facing similar challenges. Ultimately, the project seeks to inform the development of public policies that promote more equitable and effective access to health services.

(ii) *Territories, Mobility and Digitalization:* This sub-topic addresses key societal challenges related to decarbonization, data-driven governance and the transformation of mobility systems. It focuses on understanding and optimizing passenger and freight flows across diverse territorial contexts (regional, national or international) through interdisciplinary approaches combining management, engineering and data science. Particular attention is given to multi-actor coordination, data sharing and the development of decision-support tools for public policies. Projects such as Mobiscore exemplify this ambition by developing integrated, data-driven indicators to assess and pilot territorial mobility performance (e.g. modal shift scenarios, logistics optimization, CO_2 impact). The objective is to design scalable socio-technical solutions that enhance the sustainability, efficiency and resilience of mobility systems.

The research project proposal should tackle one of these two sub-topics:

(i) *Territories, Mobility and Health:* the project proposed should clearly outline the theoretical and methodological approaches proposed for conducting the research, as well as the socio-economic partners in different countries on which the research will rely.

(ii) *Territories, Mobility and Digitalization* *the methodological approach of the proposed project should be based on an interdisciplinary and mixed-methods design combining qualitative, quantitative techniques. It should rely on action research and real-world experimentation in collaboration with public and private stakeholders (possible collaboration with active research programme of the LIREM and the regional research consortium R3MOB) to co-produce knowledge and test solutions in operational contexts.*

Knowledge and competencies required

(i) Concerning sub-topic 1, the PDR is expected to hold a PhD in Management sciences. He or she should be able to use a range of research methodologies, either quantitative, qualitative, or mixed methods. A strong understanding of healthcare issues and of the general organization of healthcare systems across different national contexts is required. Finally, the PDR should demonstrate a strong interest in approaches that combine organizational and technological perspectives to address major societal challenges.

(ii) Concerning sub-topic 2, the candidate is expected to have a strong interdisciplinary background at the intersection of mobility, digitalization and territorial systems. A PhD in management sciences or transport economics or engineering field is required. The candidate should demonstrate solid knowledge of sustainable mobility, logistics or transport systems, as well as an understanding of multi-actor governance and public policy challenges.

Presentation of the research group and contact persons

Research Laboratory in Management (LIREM) - UPPA research unit (UR 4580) https://lirem.univ-pau.fr/fr/index.html
LIREM is UPPA's Research Laboratory in Management, bringing together specialists in human resources, marketing, finance, accounting, auditing, strategy, logistics, and entrepreneurship. Its scientific focus is on developing management approaches that support sustainable and resilient organizations across private companies, public bodies, associations, and healthcare institutions. The unit studies workplace well-being, motivation, organizational culture, and the prevention of burnout, incivility, and other forms of dysfunctional behaviour. Research also addresses long-term strategic

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decision-making, impact investing, corporate social responsibility, and tools for steering sustainable transformation. LIREM contributes to environmental sustainability through work on supply-chain optimization, waste management, circular economy models, and digital solutions for smart and accessible territories.

Research Unit Referent:

- ***Prof. Emmanuelle Cargnello-Charles*** is LIREM's Director - emmanuelle.cargnello@univ-pau.fr

Presentation of the secondments/short stay opportunities

- *University of Turin (IT) - Department of Law https://www.law.unito.it/do/home.pl*

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