



Call for NUMEV Flagship Projects 2021

GENERAL INFORMATION

The LabEx NUMEV promotes the connections between mathematical, computer, physical and engineering sciences, and life and environmental sciences, in line with the priorities of the I-SITE MUSE project led by the University of Montpellier. NUMEV aims to make a substantial contribution in response to scientific and societal challenges with priorities in healthcare, demographic change, welfare, nutrition, food security, sustainable agriculture and environmental protection, in direct interaction with the other strengths of the site in agronomy, environment, life and health. Embedded in the regional scientific context, NUMEV also supports the regional socio-economic innovation strategy, aiming for national and international impact.

NUMEV thus intends to enable the emergence of an internationally visible, interdisciplinary scientific cluster in Montpellier, developing training and support for the scientists of tomorrow, and allowing them to tackle complex, multidimensional problems.

Four major interdisciplinary challenges related to life and the environment define the scientific objectives of the LabEx NUMEV: (1) observing, characterizing and modeling natural systems, (2) extracting and representing data, (3) developing computational/algorithmic methods for large data sets, and (4) designing computational and mathematical representations of natural and man-made systems. The NUMEV research-training-transfer dynamic thus contributes to major scientific, technical and economic developments.

Since the creation of the LabEx NUMEV in 2011, more than 200 projects have been supported, fostering the creation and strengthening of links between the scientific communities involved. The results obtained have been acknowledged by the renewal of the LabEx for 5 years (until 2024), and clearly demonstrate that these objectives have been achieved.

To further strengthen this action and to promote its community and research at the national and international levels, the LabEx NUMEV launches its second call for **two Flagship projects** (in French "Projets Etendard") for a total funding of 0,6 M€. With this call, NUMEV intends to select a limited number of scientific projects with high potential in terms of research, training and development, and with a long lifespan (until the end of 2024). These projects should have a strong ambition to structure the site's scientific community, within the scope of the LabEx NUMEV. They will take place within the framework of a clear and structured partnership with actors in the fields of the environment and/or life sciences, and may include regional, national and/or international partners interested in this research dynamic. If they involve international collaborations, the projects may be labelled "International Research Team - IRT".

The Flagship projects will therefore contribute to the major scientific, technical and economic developments at the interfaces of the MIPS (mathematics, computer science, physics and systems) and agronomy - environment - life and health domains. The projects must fall into the scientific objectives of one of the four generic axes and/or the four integrated projects of the LabEx NUMEV, with a national and international scope. At the end of this document you can find a summary of the scientific scope of the LabEx NUMEV with contacts for its Generic Directions and Integrated Projects.

For projects to be eligible, the project holder(s) must be affiliated to one of the **LabEx NUMEV member units** (EUROMOV, IES, IMAG, LIRMM, LMGC, LUPM, L2C, MISTEA, INRIA teams: Camin, Graphik, Lemon, Zenith). We remind you that a Flagship project must emerge from the NUMEV community, therefore it is highly desirable that the project be led by one or more members of this community.



Flagship projects must meet the following conditions:

- have a structuring effect:
 - o at the scale of the Montpellier site (multi-partner), by targeting the scientific scope of the LabEx NUMEV, and proposing an innovative, federative research project on the long term,
 - o paving the way for long-term and structuring collaborations with national and international partners;
- have a positive impact on national and international outreach and visibility, including dynamic links with leading research centres;
- have a transforming effect ("before and after") aiming to position these research activities as essential, at the national and international levels;
- have a clear and measurable impact on teaching and training;
- have a potential for valorisation or service, in particular through interactions with socio-economic players.

Proposals will be evaluated through a process involving external referees and according to the following criteria:

- *Scientific quality*: coherence and quality of the scientific proposal, scientific ambitions and/or technological limitations to be lifted, positioning in relation to the state of the art, innovative methodology developed to achieve the objectives.
- *Positioning and perspectives of the project*: strategic nature of the project in relation to the scientific scope of the LabEx NUMEV, originality and innovation, transforming power of the project, national and international attractiveness and visibility.
- *Quality of the consortium*: complementarity of the consortium, involvement of competences to achieve the scientific objectives, scientific expertise of the project holder and capacity to lead a flagship project (we recommend that the project holder and/or co-holder be qualified to lead research - HDR), degree of implication of national and/or international partners (including co-funding for the project).
- *Impact on teaching and training*: training programs potentially involved, implementation of training programs for the site, potential impact at the national and international levels.
- *Valorisation*: capacity to mobilize socio-economic partners or to initiate actions of valorisation and services, dissemination actions such as publications, data management, patents, prototypes, or partnership developments.
- *Budget*: adequacy of the budget with the scientific objectives, leverage effect to attract additional funding.

The selected Flagship projects will be regularly monitored by the CPS ("Conseil Pédagogique et Scientifique") of the LabEx NUMEV according to these criteria. We recommend that the project holders indicate as precisely as possible the associated milestones and deliverables.

We would like to remind that, according to the terms of reference approved by the LabEx legal and financial authorities and the ANR, the resources made available for this call will allow to finance 100% of expenses such as:

- doctoral contracts (starting before 31/12/2021), contracts for postdocs and research engineers,
- compensation for visiting researchers,
- operational costs (e.g. small equipment, internships, missions, publication costs, calculation and data storage on the Meso@LR platform - *so far on no other platform of the University of Montpellier*),
- equipment,
- scientific events and activities to increase international visibility,
- actions related to teaching and training: new courses, specific seminars for students, student projects, other expenses related to training (student mission, specific equipment, operational costs).

The timeline for the 2021 Flagship call is as follows:

- **15/02**: Call opening
- **15/03**: Deadline for submission of letters of intent (compulsory) - see attached template
- **31/05**: Deadline for submission of full proposals - see attached template
- **Mid-July**: Pre-selection of projects
- **Early September**: Audition of pre-selected projects

Letters of intent and project proposals, in English only and in the formats provided, must be sent to the LabEx NUMEV at numev-propositions@umontpellier.fr by **March 15, 2021** for the letters of intent and **May 31, 2021** for the full proposals.

For any question please contact numev-direction@umontpellier.fr

Scientific scope of the LabEx NUMEV

Submitted project proposals must fall within the scientific scope of LabEx NUMEV, i.e. the projects must aim to strengthen:

A. The core knowledge required in the medium/long term to deal with issues related to the environment and living organisms. The four generic directions (GD) are: (1) Sensors and Vectors, (2) Modelling, (3) Data, Algorithms and Computations, and (4) Experimental Models and Measurements.

B. The site's capacity in targeted scientific areas, related to technological and societal applications. The four Integrated Projects (IP) are: (1) Surgical Assistance, (2) Movement, (3) Ocean and Coastline, and (4) Genomes.

In addition, projects must involve a strong partnership with partners in the environmental and/or life sciences (E-V) fields. Research projects must therefore involve at least one research unit member of the LabEx NUMEV (see above), and at least one E-V team/unit (locally or abroad).

More information about GD's and IP's is available at <https://numev.edu.umontpellier.fr/presentation/>

Directors	Andrea PARMEGGIANI andrea.parmeggiani@umontpellier.fr	Emmanuel LE CLÉZIO emmanuel.leclezio@umontpellier.fr	Nabil ZEMITI cherif-nabil.zemiti@umontpellier.fr
GD Sensors and Vectors	Jérémie TORRES jeremie.torres@umontpellier.fr	Sébastien DRUON sebastien.druon@umontpellier.fr	
GD Modeling	Franck JOURDAN franck.jourdan@umontpellier.fr	John PALMERI john.palmeri@umontpellier.fr	
GD Data, Algorithms and Computations	Pascal PONCELET pascal.poncelet@umontpellier.fr	Nadine HILGERT nadine.hilgert@inrae.fr	
GD Experimental Models and Measurements	Christian LIGOURE christian.Ligoure@umontpellier.fr	Benoît CHARLOT benoit.charlot@umontpellier.fr	
IP Surgical Assistance	Nabil ZEMITI cherif-nabil.zemiti@umontpellier.fr	Simon LE FLOCH simon.le-floch@umontpellier.fr	
IP Ocean and Coastline	Serge BERNARD serge.bernard@umontpellier.fr	Pascale FABRE pascale.fabre@umontpellier.fr	
IP Movement	Julien LAGARDE julien.lagarde@umontpellier.fr	Sofiane RAMDANI sofiane.ramdani@umontpellier.fr	
IP Genomes	Fabio PARDI fabio.pardi@lirmm.fr	Gilles DIDIER gilles.didier@umontpellier.fr	
Training	Andrea PARMEGGIANI andrea.parmeggiani@umontpellier.fr	Emmanuel LE CLÉZIO emmanuel.le-clezio@umontpellier.fr	