In 2010, the French government designated the General Investment Commission (CGI - Commissariat Général à l'Investissement) to deploy an Investments for the Future Program (PIA - Programme d'Investissements d'Avenir) in several phases: PIA 1, PIA 2, and, in early 2017, PIA 3. The PIA program includes a major focus on Higher Education and Research, representing tens of billions of euros, organized through a variety of tools (Labex, Equipex, infrastructure, IDEX/I-SITE, and more) for which competitive calls-for-projects are open.

The fundamental characteristic of IDEX/I-SITE call-for-projects is that they seek to promote the emergence of a limited number of research universities at sites benefiting from remarkable scientific potential and with the ability to create synergies between local universities, schools, and other entities. The long-term goal is to create universities that can compete internationally with their foreign counterparts in terms of exposure, attractiveness, and impact at the forefront of knowledge and on society.

More particularly, the selected I-SITE projects are characterized by the capacity of their leaders to develop close and effective cooperation with the business world in recognized fields of excellence, and to carry out innovative actions for partnership-based research, entrepreneurial development, and initial and continuing professional education.

This evolution must be considered over a relatively long period of time, as an establishment’s reputation can only be built progressively. The long-term ambition is therefore to ensure that the reputation and attractiveness of universities with the IDEX/I-SITE label are recognized internationally to everyone’s benefit.

All selected IDEX/I-SITE projects are subject to one or more probationary periods. Following those periods, an international jury performs an assessment that states whether the certification and associated funding are maintained or terminated.
"The community gathered around University of Montpellier is leading the effort to build an internationally-recognized university, leveraging the tremendous pedagogical and scientific potential of a large consortium.

11 research organizations, 4 schools, and 3 health facilities are committed alongside University of Montpellier in a two-fold challenge to:

- Increase our impact and exposure by engaging all disciplines, particularly in the fields of food safety, sustainable management of natural resources and ecosystems, improvement of human health,
- Transform the university by including all partners with the evolution.

This involves highlighting three major societal challenges: “feed, protect, and care”. This does not necessarily imply specializing exclusively in these areas, but rather leveraging them to build an identity that...

leverages already-established recognition and launches us strongly into the next century, where these issues will concern everyone at every level: searching for fundamental knowledge, confronting research with concrete questions, innovating teaching methods, opening to socio-economic stakeholders. All of this must be pursued with an open mind to society in France and throughout the world. This is a truly dynamic opportunity to achieve historical cooperation at the site level.

By building the project around powerful and differentiating thematic issues, we are seeking to build momentum with the entire scientific community, creating unprecedented ties between disciplines in all their diversity. Together we are building a world-class university, with a broad range of top-quality skills and expertise, and equipped with a distinctive identity.

MUSE is a global and ambitious tool for transforming the university in all its academic dimensions, relations with companies, insertion into the worldwide scientific community, as well as in its increasing close ties with schools, research organizations, and health establishments.

As you read this report, which highlights the actions carried out throughout this first year of collective effort, I sincerely hope that you will be able to understand the boost being given to building the university of tomorrow.”

Prof. Philippe Augé
President, University of Montpellier
MONTPELLIER UNIVERSITÉ D’EXCELLENCE

50,000 students

19 partners

550 M€ capital endowment yielding 17 M€/year

6,000 scientists

120 research laboratories

5 founding companies

4,000 administrative & technical staff members

4 international partner universities

180 supporting start-ups
Building a university recognized internationally, notably for its impact in the fields of agriculture, environment, and health

Governance, education, research, innovation, international aspects, student life... the MUSE academic and scientific community joins forces to meet three major and interdependent societal challenges inspired by the United Nations sustainable development agenda for 2030, at the crossroads of all scientific fields covered by the consortium.

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**FEED**
Promoting ecologically innovative agriculture to contribute to food security and environmental quality

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**PROTECT**
Encouraging the transition towards a society that manages its resources and environments sustainably

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**CARE**
Improving human health in changing environments

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The vision of a planet with unlimited resources is nearing an end and the world must now manage its limited natural resources.

The continuously growing population increases the need to produce goods and services that run the risk of altering most ecosystems and generating food security problems for the most vulnerable populations. In parallel, the population is faced with new health problems, some of which may be related to the environment or lifestyles, such as vector-borne diseases and chronic illnesses.

The world must face numerous challenges, including the loss of biodiversity, climate change, disturbances in the water cycle, changes in ground use (urbanization, deforestation, intensive farming), food and nutritional hazards, and an increase in the overall number of toxic agents. These challenges call on research efforts to find sustainable solutions for the resulting problems, such as: emerging diseases affecting humans, plants, and animals; changes in human health; heightened pressure on ecosystems and the environment; non-sustainable resource management due to farming, woodland, and forest systems; issues related to fishing; and more.

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A European portal for scientific cooperation and higher education for – and with – the Mediterranean region and southern countries.

Presumably unique in Europe, MUSE represents an opportunity for all scientists in the consortium to open up to a network already densely organized by IRD, Cirad, and CNRS abroad, especially in countries in the southern hemisphere, around the scientific questions raised by the challenges in Mediterranean and inter-tropical areas.
Action revolving around all academic fields and open towards society

**GOVERNANCE**
Manage a 19-member consortium led by University of Montpellier
Build an integrative university revolving around 5 research clusters, 1 Doctoral College
1 graduate school and 9 major educational areas (collegiums)

**RESEARCH**
Manage the University of Montpellier Doctoral College for training and professional integration of PhD students
Create links with other scientific disciplines and societal questions
Encourage research and knowledge production at the crossroads of the “Feed-Care-Protect” concepts
Supporting technology platforms

**TRAINING**
Bring about pedagogical and technological innovations and rise to international standards
Create a Support Center for Pedagogical Innovation to support novel initiatives put forth by educational leaders

**INTERNATIONAL**
Increase international exposure and encourage international mobility for students and staff
Create an Institute of Advanced Knowledge founded on ongoing dialog between life sciences and social sciences to build thinking and partnerships between academic stakeholders in temperate, Mediterranean, and tropical regions

**TERRITORIES & SOCIETIES**
Develop partnerships with a supporting platform
Bring research, education, and socio-economic worlds into synergy with companies through MUSE Key Initiatives
Create showrooms for promoting results to companies
Host companies on campuses

**STUDENT LIFE**
Create a site identity and build a sense of belonging
Support student initiatives with a dedicated call-for-projects open to all the students in the consortium
ANNUAL BUDGET

550 M€
capital endowment
= 17 M€ / year

6.5 M€

Student Life 0.25 M€
Steering, Communication 0.45 M€
International 1.1 M€
Companies, Society 1.1 M€

5.2 M€

Education 2.4 M€

Research & Attractiveness
LabEX
The **MUSE CONSORTIUM** is led by University of Montpellier. Partners include the following:

### 4 other higher education establishments
- Alès Mines School of Engineering and Applied Science IMT Mines ALÈS
- Montpellier National Superior School of Chemistry ENSCM
- Montpellier National Superior School of Architecture ENSAM
- Montpellier SupAgro MSA

### 11 public-sector research organizations
- Office for French Geological survey BRGM
- Alternative Energies and Atomic Energy Commission CEA
- Agricultural Research Centre for International Development CIRAD
- Int’l Center for Advanced Agronomic Studies / Mediterranean Agronomic Institute of Montpellier CIHEAM-IAMM
- National Center for Scientific Research CNRS
- French Research Institute for Sea Exploration IFREMER
- National Institute for Agronomic Research INRA
- French Institute for Research in Computer Science and Automation INRIA
- National Institute for Health and Medical Research INSERM
- Development Research Institute RD
- National Science and Technology Institute for Environmental and Agricultural Research IRSTEA

### 3 health facilities
- Montpellier University Hospital Center CHU Montpellier
- Nîmes University Hospital Center CHU Nîmes
- Montpellier Cancer Institute ICM

### MUSE BOARD

In place since May 2017, the MUSE Board meets at least once a month. The Board is the steering body for the MUSE I-SITE. In addition to the University of Montpellier President, the MUSE I-SITE Board comprises representatives from the CEA, Cirad, CNRS, INRA, INSERM, IRD, and UM; the MSA, ENSCM, ENSAM, EMA, and CIHEAM-IAMM partner pact; the CHU-M, CHU-N, and ICM partner pact; and the BRGM, IFREMER, INRIA, and IRSTEA partner pact.

Here are some examples of decisions made by the Board in 2017-2018:

- Joint signature policy for scientific publications
- Approval for the scopes of 5 future research clusters
- Finalization of the list of 58 laureates of the 2017 research support program (following consultation with the scientific community)
- International strategy (following consultation with an ad hoc working group)
- Finalization of the list of the first 24 international scientific events supported by MUSE (based on proposals by establishment directors)
- Approval of the thematic scope of the 6 MUSE Key Initiatives (assigned to 6 groups of scientists)

The Board leverages an executive team led by François Pierrot, Executive Director of the MUSE I-SITE. The main thematic fields are coordinated by:

- Jacques Mercier, representative for Research
- Jean-Patrick Respaut, representative for Education and Student Life
- Patrick Caron, representative for International Affairs
- Gaspard Lépine, representative for Companies
**THE UNIVERSITY OF MONTPPELLIER’S MUSE FOUNDATION** was created in May 2017 to handle implementation of the I-SITE, until the target university is created. Led by Philippe Augé, President of the University of Montpellier, the Foundation includes the following founding members: University of Montpellier, HORIBA ABX SAS, Banque Populaire du Sud, Merck Sharp & Dohme (MSD), Groupe BRL, and InViVo. The choice of creating a university foundation is justified by a desire to steer the project from within University of Montpellier, in accordance with the intention of the I-SITE call-for-projects, without creating a new and distinct legal entity for the project. Its governance mode is simple and efficient, seeking to associate all project partners.

The university foundation may also lead and develop actions on behalf of all or some of its members. A program describing the activities and means implemented to reach the foundation’s objectives is determined every year by the Board and approved by the Management Council. The Foundation’s strategic orientations and annual activity report are presented to the University of Montpellier Board of Directors for approval.

**MUSE FOUNDATION MANAGEMENT COUNCIL**

**ESTABLISHMENT COLLEGE**

**COLLEGE OF QUALIFIED INDIVIDUALS**

Anne-Lucie WACK  
General Director  
Montpellier SupAgro  
Vice-President,  
MUSE Foundation

Jacques CAVAILLÉ  
Regional delegate  
INSELM

Michel EDDI  
Chief Executive Officer  
CIRAD

Laurent BRUCKLER  
President  
INRA (Montpellier)

Sylvain LABBE  
Regional Director  
IRSTEA

Michael LECOMTE  
Scientific Assistant  
CEA Marcoule

Jérôme VITRE  
Regional delegate  
CNRS

**FOUNDER COLLEGE**

Anne-Emmanuelle ROUSSEAU  
Legal and Societal  
Responsibility Director  
BRL  
Secretary,  
MUSE Foundation

Pierre-Laurent BERNE  
Director of Compliance and Risk  
Banque Populaire du Sud

Dominique BLAZY  
Medical Director  
Merck Sharp & Dohme, France

Jai HAKHU  
CEO, Doctor  
HORIBA ABX SAS

Carole SORREAU  
Director, Institutional  
Relations  
INVIVO

ESTABLISHMENT COLLEGE

ESTABLISHMENT COLLEGE

ESTABLISHMENT COLLEGE
SEPTEMBER
- Official MUSE launch
- Launch of first call-for-projects: 2017 Research Support Program
- Executive team organization

JUNE
- Creation of the Montpellier University of Excellence Foundation (MUSE)

JULY
- Creation of University of Montpellier Doctoral College

FEBRUARY
- Official certification of Montpellier University of Excellence I-SITE at Elysée Palace, Paris

OCTOBER
- Joint signature policy for scientific publications
- Logo and muse.umontpellier.fr website
- #heritage
- Inauguration of the new Faculty of Medicine in the presence of Frédérique Vidal, French Minister of Higher Education and Research
- #partnerships #innovation
- Official launch of the “Mas Numérique” (digital farm), demonstration site for innovative digital technologies for viticulture and an original training tool for students and professionals in the sector
- #debate
- Radio conference with Pierre Rabhi: “Can we feed the planet in the XXIst century thanks to agroecology?” recorded at the Faculty of Science before an audience of 800 students, researchers, and general public
- #scientific culture
- Science Festival in Occitanie

NOVEMBER
- Approval for scopes of 5 future research clusters
- Joint signature policy for scientific publications
- Logo and muse.umontpellier.fr website

DECEMBER
- Announcement of results for Research Support Program call-for-projects
- Two laureate projects for program: Make our Planet Great Again
- #DoctoralSchool
- Launch of registration on “Ma Thèse” (My Thesis) in 180 seconds
- #DoctoralSchool
- Sebastien Lacube, INRA-LEPSE PhD student, obtains 1st prize in “From PhD to Business” competition organized by the UM Doctoral School and the Federal University of Toulouse
**JANUARY**

Approval of international strategy and list of target countries and partners

Launch of laureate projects from call-for-projects

2017 Research Support Program (5.8 M€)

Call-for-projects for Research Support Program 2018 (3.6 M€)

Creation of MUSE Support Center for Pedagogical Innovation

**FEBRUARY**

Launch of TAKE-OFF call-for-projects dedicated to pedagogical innovations (1 M€)

Launch of EXPLORE call-for-projects dedicated to international mobility (0.54 M€)

University of Montpellier joins Agropolis Foundation as a founding member

**MARCH**

CONNECT call-for-projects dedicated to student initiatives (0.1 M€)

Signature of framework agreement with Wageningen University and Research (The Netherlands), strategic MUSE partner

Launch of MUSE Key Initiatives

WATERS (WATer, Environment, Resources, Society)

Production of 1st MUSE video clip: “Keeping water while preserving life”

**2018**

- Formal start of University of Montpellier Doctoral College
- HORIBA Medical and Montpellier research unite efforts to fight against arbovirus
- Launch of Digital Startup Challenge as part of Disrupt Campus PIA #DoctoralSchool
- Two PhD students from UM win regional final of MT180 and People’s Choice award
- Signature of framework agreement with Gamal Abdel Nasser University of Conakry (Guinea), and inauguration of training room for the Development of Research and Training Centers in Infectiology to prevent and fight against the Ebola virus in Guinea.
ENLIGHTENING

RESEARCH AND ATTRACTIVENESS

CREATING LINKS BETWEEN SCIENTIFIC DISCIPLINES AND SOCIETAL QUESTIONS THROUGH AMBITIOUS AND CROSS-FUNCTIONAL SCIENTIFIC CALLS-FOR-PROJECTS INVOLVING MUSE ISSUES, ALONG WITH REINFORCED ASSISTANCE FOR RESEARCHERS
THE DESIRE EXPRESSED BY ALL STAKEHOLDERS TO CREATE A WORLD-CLASS UNIVERSITY AND, TO THAT END, STRENGTHEN THE REPUTATION AND PRESENCE OF OUR SCIENTIFIC COMMUNITY, IS REFLECTED IN THE ADOPTION OF A POLICY TO JOINTLY CO-SIGN SCIENTIFIC PUBLICATIONS.

With a community comprising over 6,000 senior scientists directly involved with scientific production, all members of the MUSE consortium already benefit from a high level of impact on a global scale, particularly in the fields of Agronomics, Environment, Biodiversity, Ecology (second-ranked worldwide in Shanghai 2017 ranking), Biology-Health, and Chemistry.

It was decided that the name of the “common brand” to be presented would be that of the managing establishment: “Université de Montpellier” (University of Montpellier officially shown in French), followed by the laboratory’s supervising entities in alphabetical order.

Map of MUSE international co-publications around the world, focus on selected and targeted universities
MUSE welcomes two high-level researchers to develop a project as part of the Make Our Planet Great Again initiative, #MoPGA

JOINT LABORATORIES DIADE (IRD, UM) AND CEFE (CNRS, UM, UPVM3, INRA, IRD, MONTPELLIER SUPAGRO, ÉCOLE PRATIQUE DES HAUTES ÉTUDES) ARE RESPECTIVELY HOSTING VINCENT VADEZ (INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS, ANDHRA PRADESH, INDIA) AND DELPHINE RENARD (UNIVERSITY OF CALIFORNIA, SANTA BARBARA, USA) AS PART OF THE HIGH-PRIORITY RESEARCH PROGRAM IN THE FIGHT AGAINST GLOBAL WARMING. In addition to support offered by the supervising establishments for the two research teams involved with the project, and support from the Occitanie Region – providing an equivalent of 50% of government funding – MUSE I-SITE will fund recruitment for either a PhD student or two years for a post-doctoral researcher.

VINCENT VADEZ: IRCISAT, India >>> UMR DIADE (IRD-UM), Montpellier, France

ICARUS – Improving crops in arid regions with respect to climate change: using hydraulic-lift plants, roots, and architecture to secure the food supply in the Sahel region.

Vincent Vadez elaborated his research project at the joint laboratory UMR DIADE (IRD-UM) to find answers to the two-fold problem of drought and climate change regarding plants, particularly cereal crops, and to understand how they can be managed to better regulate water loss. Vincent Vadez, specialist in modeling and vegetation ecophysiology, has worked for over 13 years in India at an international research center focusing on cereal crops in arid zones.

DELPHINE RENARD: University of California, USA >>> UMR CEFE (CNRS-UM), Montpellier, France

ASSET – Agrobiodiversity

Delphine Renard is working to shine light on the contributions of agrobiodiversity in reducing the impact of agricultural production on climate instability and disruption. The ASSET (Agrobiodiversity for a food-Secure PlanET) project is being carried out at the Center for Functional and Evolutionary Ecology (CEFE, CNRS-UM).

Assistance to help researchers submit their application for funding to the European Research Council (ERC) grants.

ERC grants, whose main selection criteria is the proposed project’s excellence and originality, represent a unique resource in the MUSE consortium’s policy for scientific exposure. MUSE will help better identify and assist potential candidates within the vast pool of expertise present within the consortium.

25 researchers in the MUSE consortium received an ERC grant between 2013 and 2016.
Generally speaking, the proposed calls-for-projects must be consistent with the scientific vision of MUSE overall, oriented around the three established societal issues, “Feed – Care – Protect,” and open to any discipline able to make a contribution. In addition to their scientific quality, projects must demonstrate their ability to: create ties between scientific disciplines and/or societal questions; integrate questions specific to social sciences; and collaborate with MUSE key international partners or companies, such as the Universities of Barcelona, Heidelberg, or Wageningen, UC Davis, or research centers in southern countries.

Unprecedented support for the site’s research projects: 9.4 M€ in 2017 and 2018

OPEN TO THE ENTIRE SCIENTIFIC COMMUNITY IN THE MUSE CONSORTIUM (6,000 SCIENTISTS), THE 2017 SUPPORT FOR RESEARCH CALL-FOR-PROJECTS IS ENDOWED WITH A BUDGET OF 5.8 M€, OF WHICH ABOUT 85% IS FROM MUSE’S OWN RESOURCES, WITH 15% FROM UNIVERSITY OF MONTPELLIER RESOURCES.

2017

- 5.8 M€
  - including 950 K€ in funding from University of Montpellier

2018

- 3.6 M€
  - MUSE own resources

264 APPLICATIONS FILED IN 2017, 58 PROJECTS SELECTED

A strong indication of the potential vitality of our research teams and the needs to be met, the total amount requested in the call-for-projects reached 32 M€, with endowment for 5.8 M€. 33% of those projects are led by women.

5 THEMATIC COMMISSIONS / 68 SCIENTIFIC EXPERTS

- Agriculture, Environment, Biodiversity
- Biology-Health
- Chemistry
- Mathematics - Informatics - Physics - Systems (MIPS)
- Social sciences

ABOUT TEN MAJOR PROJECTS WILL BE SELECTED IN JULY 2018

These major research projects will be developed with a primary focus on intersecting disciplines around the three MUSE pillars (Feed - Care - Protect), as well as the way these pillars interact and reinforce each other.

120 letters of intent were submitted in March 2018. About 10 projects will receive funding ranging from 300 K€ to 400 K€.
EXAMPLE OF SUPPORT FOR TECHNOLOGY PLATFORMS

Providing Montpellier’s scientific community with equipment to support ecologically innovative agriculture

The goal of the PAEGAZ project is to equip Montpellier’s scientific community with a portable system for sampling and analyzing emissions of the main greenhouse gases, notably CO2, N2O, and CH4. The system includes an analyzer multiplexed across 16 measurement chambers to simultaneously study the spatial variability of emissions and differences between experimental processes.

Managed by the Montpellier’s Ecotron international service platform, the equipment will be instrumental for developing ecologically innovative agriculture, predicting the impact of climate change on ecosystem services, and helping define sustainability for particular bioeconomy sectors.

The Montpellier Ecotron platform, along with that in the Paris region, is part of France’s national roadmap for research infrastructure (IR ECOTRONS).

EXAMPLE OF SUPPORT FOR TECHNOLOGY PLATFORMS

28 Post-docs recruited

Amandine SANDOVAL, MUSE’s first PhD student

Amandine Sandoval is one of the very first PhD students recruited as part of the MUSE Support for Research program.

Amandine is working with Prof. Gilles Subra to validate a proof-of-concept for a smart interactive bandage that can detect enzyme activities associated with abnormal inflammation or wound infection.

Treatment for wounds remains a diverse and complex therapeutic field, in particular due to the very wide range of wound types and their etiologies (including size, shape, stage, infection, etc.). Alongside development efforts to create active bandages (capable of delivering active agents locally), diagnosing a wound’s status is another major issue.

Clearly, it is preferable to leverage a prior diagnosis when determining the type of medical act or treatment to perform. In that context, a smart bandage that can communicate such data would be of significant value for medical staff, which could receive information regarding the need to administer medication on a given wound, such as targeted antibiotics, anti-inflammatory drugs, and healing agents.

RECRUITMENT OF POST-DOCTORAL RESEARCHERS

13 Post-docs recruited

Alpha Kabinet Keita
MUSE’s first post-doctoral researcher

Recruited by TRANSVIHMI and CERFIG, Alpha Kabinet Keita, holds a medical degree from University of Conakry (Guinea) and PhD in infectiology (Aix-Marseille University), and recently launched a 2-year research program on Ebola under the supervision of Professor Eric Delaporte (UM).

Alpha Kabinet Keita is one of the 54 “ambassadors” to the Next Einstein Forum, a platform that connects science, society, and policy in Africa and the rest of the world – with the goal to leverage science for human development.

The recent Ebola epidemic (2014-2016) highlighted the urgent need to develop structures for research, care, and training as close as possible to the field. These structures must be able to be involved over the long-term, not just during severe crises. This perspective has led to actions that have long been carried out by the TRANSVIHMI (UM, IRD, Inserm) research laboratory, under the direction of Professor Eric Delaporte, in cooperation with partners in Guinea, notably including the Ministry of Health and the Gamal Abdel Nasser University of Conakry (UGANC). The ASTRE research laboratory (Cirad) joined the efforts launched by virologist Martine Peeters (TRANSVIHMI) to study bats potentially involved in Ebola epidemics.

A Montpellier University of Excellence (MUSE) delegation visited Conakry (Guinea) on February 27, 2018 to sign a framework agreement between the University of Montpellier and the Gamal Abdel Nasser University of Conakry (UGANC) focusing on developing the Center for Research and Training in Infectiology (CERFIG) initiated by Montpellier’s TRANSVIHMI team (UM, IRD, Inserm) with their partners in Guinea, and thus participating in the fight against the Ebola virus.
### Examples of Selected Research Projects

**Examples of Selected Research Projects**

**Tackling Feed - Care - Protect: Intertwined Issues Via Cross-Functional Topics**

#### Agriculture - Environment - Biodiversity

**The role of biofilm and the rhizosphere to reduce the incidence of pharmaceutical products and antibiotic resistance when reusing treated wastewater for irrigation**

Serge CHIRON /// HSM HydroSciences Montpellier with G-EAU (AgroParisTech/ Cirad/IRD/IRSTEA/Montpellier SupAgro), LBE (INRA), Institute of Environmental Assessment and Water Research (Barcelona)

Providing solutions to meet the growing demand for irrigation water while having to reuse wastewater that contains pharmaceutical residuals. The project will contribute to knowledge on the biotransformation mechanisms of pharmaceutical products and evaluate the bioremediation capacities of agroecosystems. Using scientific data, the project thus targets future regulations involving the reuse of wastewater for irrigation purposes, as well as the development of natural remediation techniques based on microbial adaptation and the use of fungi endemic to the soil. This project also seeks to meet the need for food safety and public health protection.

#### Agriculture - Environment - Biodiversity

**Studying visual and olfactory signals in carnivorous plants that specifically attract the Asian hornet to develop a biomimetic trap**

Laurence GAUME /// AMAP (UM, Cirad, CNRS, INRA, IRD) with the Center for Functional and Evolutionary Ecology (CEFE: CNRS, UM, UPVM3, EPHE, SupAGRO, INRA, IRD), Institute of Systemics, Evolution, and Biodiversity (ISEB: CNRS, MNHN, UPMC, EPHE, Sorbonne Universities), Bees and the Environment (INRA), Hérault Beekeeping Health Defense Association, Pépinière Nature et Paysages, Micropolis – “La cité des insectes”

Creating a biomimetic and ecology-friendly trap inspired by carnivorous plants such as Sarracenia to naturally trap the Asian hornet, Vespa velutina. A direct consequence of intensified international exchanges and climate change, this invasive species is effectively expanding rapidly through Europe, endangering local bee (Apis mellifera) populations and their pollination services. As a result, the hornets are a threat to agriculture, flora biodiversity, and tomorrow’s food supply. Reducing the use of pesticides and maintaining diversified food crops will help reduce risks to human health.

### Examples of Selected Projects

**Feed - Care - Protect: Issues Related to Climate Change**

#### Social Sciences

**Fighting against climate change: formalize and develop appropriate tools for integrated governance of climate change policy**

Gilles MASSARDIER - ART Dev (UM, UPVM3, Cirad, CNRS)

Partners: CEPEL (UM, CNRS), G EAU (IRSTEA, Cirad, IRD, AgroParisTech, SupAgro), INNOVATION (Cirad, INRA SupAgro), UC Davis, Programa de Pos Graduação em Ciência Ambiental/Instituto Energia e Ambiente (University of São Paulo), SUEZ, ABC Consortium

Addressing concrete methods to implement public policies regarding climate change and the conditions for their deployment via an integrated approach by interconnecting various instruments (funding, planning, development, risk management, etc.), sectors (agriculture, urban planning/habitat, environment, industry, etc.), stakeholders (public authorities, elected officials, sectors, businesses, “civil society”, etc.), and action levels (international, national, and territorial). The project will provide better understanding of the required conditions to successfully adapting to climate change, particularly in specific economic sectors. It will offer specific solutions for the coastal tourism industry; wine sector and market gardening in the Occitanie region; livestock sectors in southern countries facing high risks of drought; and the water management sector.

#### Agriculture - Environment - Biodiversity

**In a context of climate change, the impact of ozone pollution on plant-pollinator chemical communication: risks for the resilience of ecosystemic services**

Magali PROFITT, CEFE (CNRS, UM, UPVM, EPHE/IRD, INRA, SupAgro) with the Mediterranean Institute of Biodiversity and Marine and Continental Ecology (Aix Marseille), Laboratory of Environmental Chemistry (Aix Marseille), Laboratory of Vegetal Biotechnologies applied to Aromatic and Medicinal Plants (Saint-Etienne), Faculté Polydisciplinaire Larache - Abdelmalek Essaadi University (Morocco)

Comparing the effect of ozone concentration in today’s climate conditions, and those predicted for the future, with respect to plant-pollinator interactions, and defining tolerance levels for resistance to a major pollutant. This project seeks to fight against the dangers of anthropic activities on pollination, an essential function for maintaining biodiversity, and for the critical ecosystemic service provided. The project scope covers rural zones in the Mediterranean region.
Biological and mechanobiological study of the contribution of mesenchymal stem cells to develop biomimetic prostheses for intervertebral discs using additive manufacturing

Pascal KOUYOUMDJIAN /// Laboratory of Mechanics and Civil Engineering (CNRS, UM) with: Nîmes CHU, Institute of Regenerative Medicine and Biotherapy (IMRB: UM / INSERM / Montpellier CHU), Institut Gerhardt de Montpellier (ICGM: UM / ENSCM / CNRS), Max Mousseron Institute for Biomolecules (IBMM: UM / CNRS / ENSCM), 3D MEDLAB

Studying the contribution of mesenchymal stem cells in developing a new biomimetic intervertebral disc implant for total replacement to regain permanent mechanical and biological function (mobility, stability, shock-absorption), adapted to the morphological characteristics and mechanical constraints imposed by the anatomy of each patient. This project enables the creation of a truly multidisciplinary group specialized in cartilage replacement bioengineering, in close collaboration with a company. The project will involve UM platforms: PRO3D additive manufacturing and POMM photopolymerization, and initiate new collaboration with the company 3D MEDLAB.

Multifunctional 3D printing scaffolds for treating bone metastases caused by breast cancer

Mikhael BECHELANY /// IEM (CNRS, UM, ENSCM)
Partners: IRBM (INSERM, UM, ICM), Montpellier Regional Cancer Institute

Developing and characterizing new biomimetic and biodegradable implants using 3D printing or injectable scaffolds to treat bone metastases from breast cancer, simultaneously enabling bone regeneration and eradication of cancer cells. These new biomaterials are expected to be able to block the proliferation of metastatic breast cancer cells.

Integrated infrared optics for viticulture applications

Caroline VIGREUX /// Institut Charles Gerhardt de Montpellier (CNRS / UM / ENSCM) with: ITAP (IRSTEA / SupAgro), IES (CNRS / UM), L2C (CNRS / UM) and Robert Bosch France SAS

Offering integrated infrared optical solutions to meet the goal of reducing the use of phytosanitary fertilizers in viticulture. In the short term, the OPTIVIT project will help reduce the quantities of phytosanitary products used, which will have a positive impact on environmental protection. In the longer term, the work carried out for the wine-growing sector can be applied to other types of crops. Limiting the use of phytosanitary input will result in producing healthier crops and thus better feeding the ever-growing population. This project unites four major Montpellier institutes around MUSE pillars and lays the first stone for building an agri-photonics consortium in Montpellier.

Malaria: research and development for anti-malaria drugs targeting the parasite’s metabolism

Rachel CERDAN /// DIMNP (UM / CNRS) with CBS (UM / CNRS / INSERM), EMP IPC Institut Pasteur, AGV Discovery

Developing innovative therapies targeting new mechanisms to treat populations threatened by the most devastating disease in the world, malaria, and the emergence of multi-drug-resistant parasites. The top priority for efforts in this field must target original and innovative mechanisms of action, as compared to existing molecules, to push back the development of resistance as much as possible. From that perspective, biosynthesis and phospholipids represent a major pharmacological target. At the crossroads of biology and chemistry, this project seeks to meet the challenge of “improving human health in changing environments” in developing countries in Africa, Asia, and South America affected by malaria.
Excellence Laboratories

The MUSE I-SITE’s organizational structure is inspired by the 6 Excellence Laboratories that are now integrally embedded in it. These “LabEx” will pursue their action in accordance with their initial commitments, with a major evaluation phase expected by the French authorities in 2018.

AGRO

40 research structures
1,200 scientists

Focusing on “plants of agricultural interest”, LabEx Agro combines multidisciplinary skills (biological sciences, engineering sciences, human and social sciences) ranging from gene study to the end-use of plants. The Agro community benefits from recognized expertise on many temperate, Mediterranean, and tropical plant species.

CEMEB

10 research organizations
630 scientists

LabEx CeMEB (Mediterranean Center for the Environment and Biodiversity) focuses on the dynamics and function of biodiversity and ecosystems in a context of clear environmental changes induced, in particular, by human activities in particular.

One important goal is to forecast the biological consequences of planet-wide changes using scenarios, and to anticipate the evolution of ecosystemic services and human societies.

CHEMISYST

26 research structures
400 scientists

Specializing in chemistry for molecular and interfacial systems, LabEx Chemisyst is organized around three fields of expertise:

- Functional materials
- Biomolecule synthesis and assembly
- The processes in increasingly renewable nuclear power, as well as the strategic recycling of rare earth elements and other metals.

ENTREPRENDRE

5 research structures
200 scientists

The goal of LabEx Entreprendre (entrepreneurship) is to create and share knowledge at the crossroads of legal, economic, and management sciences about launching a business. The LabEx thus plans to help build momentum in the entrepreneurial and innovation ecosystem by assisting:

- Companies, with their sustainable growth strategy
- Public authorities, with their entrepreneur-oriented public policy ("Assises de l’entrepreneuriat" meeting, 3S, etc.).

EPIGENMED

58 research structures
500 scientists

LabEx Epigenmed seeks to improve fundamental and clinical research in biology-health and encourage interdisciplinary projects that cover five areas:

- The genome and epigenome
- Cell cycles
- Infectious diseases and immunology
- Cell signaling and neurobiology
- Biophysics and systems biology

NUMEV

7 research structures
220 scientists

LabEx Numev promotes the emergence of new methods and innovative tools for life sciences, health, and the environment. Research targets high-impact publications and practical applications on topics such as:

- Early detection in pathology
- Mathematical modeling of aneurysms
- Eco-design of wood to preserve resources in pine regions, etc.
- Development of new land and air observation vectors

MUSE consortium members are also directly involved with other Excellence Laboratories:

- MAbImprove – Antibody research center
- CEBA – Amazon biodiversity research center
- CORAIL – Coral reefs facing planetary changes
- GANEX
- ICST – Ion channels of therapeutic interest
- LipSTIC – Lipoproteins, inflammatory diseases, and cancer: the novel research approach taken by PaRaFRAP
- French Alliance Against Parastic Diseases
- SERENADE – Safe(r) Ecodesign Research and Education applied to NAnomaterial DEvelopment and it is a Safe by Design project
- DRIIHM – Interdisciplinary Research on Man-Environment Interactions
- Store-EX – Excellence laboratory for the electrochemical storage of energy
REINFORCING THE ATTRACTIVENESS, PEDAGOGICAL INNOVATION, AND OVERALL EXCELLENCE OF THE CONSORTIUM’S EDUCATIONAL ASPECTS, PROMOTING STUDENT INITIATIVES AND A SENSE OF BELONGING

EDUCATION AND STUDENT LIFE

INSPIRING
Strengthening the ties between education and high-level research via PhD studies: creation of University of Montpellier Doctoral College

THE ONLY WAY TO BUILD AN INTERNATIONALLY-RECOGNIZED RESEARCH UNIVERSITY IS TO DEVELOP STRONG ACTION AT THE PHD STUDIES LEVEL. CREATING THE UNIVERSITY OF MONTPELLIER DOCTORAL SCHOOL IN JULY 2017 WAS THEREFORE ONE OF THE FIRST EMBLEMATIC EFFORTS UNDERTAKEN BY MUSE.

The University of Montpellier Doctoral College, the first step towards establishing the MUSE Graduate Division, coordinates all the University of Montpellier doctoral schools: Montpellier SupAgro, Ecole Nationale Supérieure de Chimie de Montpellier (Montpellier National Superior School of Chemistry), IMT Mines Alès, and AgroParisTech.

DEFINING AND IMPLEMENTING DOCTORATE-LEVEL EDUCATION HORIZONTALLY ACROSS THE DOCTORAL SCHOOLS

The offering of professional doctoral education is intended to provide doctoral students with outstanding professional training, guaranteeing top quality training covering subjects specific to the professional integration of new PhD graduates: knowledge about entrepreneurship and the economic environment, personal development, academic professions, language skills, and assessment tools.

HELPING THESIS SUPERVISORS MANAGE PHD STUDENTS

The UM Doctoral College offers training to optimize thesis supervisors’ monitoring skills so that they can properly help doctoral students along their path, from choosing a thesis topic and developing independence in research practices, to elaborating a professional project either inside or outside research.

Furthermore, one of the goals of the University of Montpellier Doctoral College is to strengthen interdisciplinary and international aspects of PhD programs, and to promote doctoral studies with respect to the socio-economic world and civil society in general.

The University of Montpellier Doctoral College joined the French National Network of Doctoral Colleges (RNCD) association in September 2017.

Overview of the complete MUSE training offering

A SURVEY OF THE ENTIRE TRAINING OFFERING WAS CONDUCTED TO OBTAIN A FIRST MAPPING OF THE OPTIONS AVAILABLE WITHIN THE MUSE SCOPE.

Referenced on the MUSE website, programs are listed within the main educational sectors, based on the 9 major colleges that will comprise the target university in the long-term.
Creation of Support Center for Pedagogical Innovation

Created in January 2018, the Support Center for Pedagogical Innovation (CSIP) is a mechanism whose goal is to support novel initiatives and help research-professor teams elaborate and implement their projects.

The Support Center for Pedagogical Innovation is also designed to assist with the internationalization of the training offer and the digital transformation of teaching tools.

STATUS

The first CSIP action is to take a complete snapshot of the innovations and projects managed by teaching teams within the consortium’s 26 entities (schools, faculties, institutes, technical university institutes, etc.).

WORKSHOPS

Between January and March 2018, three workshops were organized to assist teaching staff and research-professors who wish to go beyond their lecture courses, either in the context of pedagogical projects or in response to the Take-Off call-for-projects.

ONLINE RESOURCES

Resources are published online and made available to teaching staff on the CSIP website, including news and events related to pedagogical innovations, course materials, official reports, and more.

http://muse.edu.umontpellier.fr/ressources/

Take-Off call-for-projects: supporting transformation of teaching methods in education as part of developing the future MUSE Master’s of Excellence

OUR EDUCATIONAL OBJECTIVE IS TO PROVIDE STUDENTS WITH LEARNING AND TEACHING PATHWAYS THAT ARE CONSISTENT WITH INTERNATIONAL STANDARDS, OPEN TO TODAY’S MAJOR SCIENTIFIC ISSUES AND EMBRACING DYNAMIC ECONOMIC SECTORS.

The main goals of this call-for-projects, endowed with 1 M€, for 2018 are to:

- Promote innovation within the educational curriculum and promote that aspect in teaching staff status.
- Develop interdisciplinary aspects using innovative pedagogical methods.
- Lead existing Master’s programs towards international standards in terms of their excellence and attractiveness, and support the creation of new Master’s programs with the “Excellence Curricula” program.

Digital Start-Up Challenge: students will focus on digital projects with companies #DISRUPTCAMPUS

Laureate of the Disrupt Campus (PIA) call-for-projects, targeting educational curricula for entrepreneurship and digital innovation for startups, joining companies committed to a digital transformation approach, the Digital Start-up Challenge (DSC) is a new teaching method based on students’ professional practice and companies’ digital development. DCS launched officially on Tuesday, March 20, 2018, in the presence of Philippe Augé (President of University of Montpellier), André Deljarry (President of the Hérault Chamber of Commerce and Industry), company directors, teaching staff, and students. The program is designed as a collaborative platform whose goal is to promote student work in “project” mode. With this platform, companies can express their needs in terms of digitalization by suggesting “challenges.” Student groups will select the project of their choice and respond to a range of digital issues with support from their professors.
A call-for-projects to connect students with their campus

THE CONNECT CALL-FOR-PROJECTS SEeks TO SUPPORT ACTIONS LIKELY TO UNITE STUDENTS AROUND TOPICS THAT ARE OPEN TO SOCIETY.

Complementary to student projects supported by the Fund for Solidarity and Development of Student Initiatives (FSDIE), a MUSE call-for-projects concerning student initiatives supports projects organized by students for students.

Associations and student initiatives give students an opportunity to come together and share their centers of interest.

REINFORCING A SENSE OF BELONGING THROUGH CITIZEN, CULTURAL, SPORTS, AND COMMUNITY ACTIONS, AND MORE

Regardless of their focus, all these initiatives help develop a culture that is open to ideas, sharing, and intellectual enrichment. Until now, most initiatives had only been organized at a campus- or establishment-wide level. MUSE’s goal is to connect students and campuses by supporting joint initiatives and thus reinforcing a sense of belonging to the Montpellier University of Excellence community.

This program seeks to support student volunteer-based projects that are likely to bring all MUSE consortium students around the major issues of inclusive society. With issues ranging from sustainable development to the fight against discrimination, the goal is to organize events that can turn the various campuses into places where all students can truly meet and exchange ideas to expand their outlook towards society.

REINFORCING A SENSE OF BELONGING BY HAVING FUN: CONNECT, THE GAME CONTEST

In conjunction with the Student Initiatives call-for-projects, MUSE organized an online game contest from April 11-27, 2018, to test students’ knowledge about the MUSE consortium and the projects it promotes.

With particular emphasis placed on MUSE’s international strategy, the game contest featured prizes for students including, among other things, a round-trip to visit one of MUSE’s strategic partner universities: Davis (California, USA), Kyoto (Japan), Barcelona (Spain), Heidelberg (Germany), and Wageningen (The Netherlands).

OPEN-HOUSE DAYS, COMMON PRACTICAL GUIDE, AND WELCOME DAY FOR NEW STUDENTS

Instilling a sense of belonging to the university community includes a series of actions such as Connect (call-for-projects and game contest), as well as the organization of specific actions designed to remind students that they all belong to the same group:

• Goodies and “Future University of Montpellier student” photomats during open-house days in March 2018
• MUSE practical student guide being created
• A welcome day for new MUSE students in September
OPENING INTERNATIONAL RELATIONS

OPENING UP TO COUNTRIES IN THE SOUTH AND CREATING PRIVILEGED TIES WITH CUTTING-EDGE UNIVERSITIES FOR MUSE’S MAIN STRATEGIC PILLARS
Shared international strategy

MUSE’S INTERNATIONAL VISION IS TO BUILD WORLDWIDE RESEARCH AND ACADEMIC PARTNERSHIPS TO PRODUCE THE KNOWLEDGE AND SKILLS REQUIRED FOR ADDRESSING GLOBAL ISSUES WITHIN THE TARGET SCOPE OF MUSE.

To achieve that vision, MUSE endeavors to collaborate with other stakeholders sharing similar interests regarding the key “Feed - Protect - Care” issues, in both northern and southern hemisphere countries.
International mobility, a strategic asset for the MUSE consortium’s international policy

THE EXPLORE CALL FOR INTERNATIONAL MOBILITY LAUNCHED IN FEBRUARY 2018 SEEKS TO FAVOR EXCHANGES AND COLLABORATION AT AN INTERNATIONAL LEVEL, WHILE INCREASING ATTRACTIVENESS AND EXPOSURE FOR THE SITE AND HELPING TO ORGANIZE INITIATIVES.

Open to all doctoral students, researchers, research-professors, teaching staff and administrative and technical personnel, this first call-for-mobility is endowed with 540 K€, including resources directly from UM, IRD, and Cirad.

The EXPLORE international mobility program encourages collaboration to and from strategic partners selected jointly with MUSE members. It also highlights existing international platforms abroad managed by institutions in the MUSE consortium, with IRD and Cirad at the forefront.

Results from the call-for-international mobility will be announced in June 2018. Responses to this call provide the following indicators

115 applications submitted
including 62 outgoing and 53 incoming, involving 65 different organizations

February 2018 Scientific cooperation
A FRAMEWORK AGREEMENT TO SUPPORT THE FIGHT AGAINST THE EBOLA VIRUS IN GUINEA

In February 2018, University of Montpellier and Gamal Abdel Nasser University of Conakry (UGANC) signed a framework agreement focusing notably on developing the Center for Research and Training in Infectiology (CERFIG) initiated by Montpellier’s TRANSVIHMI team (UM, IRD, Inserm) with their partners in Guinea, and thus participating in the fight against the Ebola virus.

The recent Ebola epidemic (2014-2016) highlighted the urgent need to develop structures for research, care, and training as close as possible to the field. These structures must be able to be involved over the long-term, beyond severe crises. This perspective has led to actions that have long been carried out by the TRANSVIHMI (UM, IRD, Inserm) research laboratory, under the direction of Professor Eric Delaporte, in cooperation with partners in Guinea, notably the Ministry of Health and the Gamal Abdel Nasser University of Conakry (UGANC). The ASTRE research laboratory (Cirad) joined the efforts launched by virologist Martine Peeters (TRANSVIHMI) to study bats potentially involved in Ebola epidemics.
INTERNATIONAL OUTREACH

SUPPORT FOR INTERNATIONAL SCIENTIFIC EVENTS

To highlight the vitality of scientific communities organizing many international scientific gatherings, MUSE supports events with an international dimension whose focus is on or at the crossroads of MUSE’s three thematic pillars (Feed – Protect – Care).

24 first events were supported in 2018, with a second wave of support to be approved by the Board before the summer.

/// AGRICULTURE, ENVIRONMENT, BIODIVERSITY

- MAY 2018 I InnovSur 2018 INNOVATION in Health Surveillance International Forum
- JUNE 2018 I GEOBIA ‘18 International Symposium: Geobia in a changing world – from pixels to ecosystems and global sustainability
- JULY 2018 I 9th International Francophone Entomology Conference
- JULY 2018 I ICPPMA 1st International Congress on Plant Protection in Mediterranean Agroecosystems
- AUGUST 2018 I IPMB2018: 12th International Plant Molecular Biology Congress
- AUGUST 2018 I Joint Congress on Evolutionary Biology – Montpellier 2018
- AUGUST 2018 I Aqua2018 World Aquaculture Congress
- SEPTEMBER 2018 I International Eucalyptus Conference 2018: Managing Eucalyptus Plantations Under Global Changes
- OCTOBER 2018 I 16th EGU (European Geosciences Union) PLINIUS Conference on Mediterranean Risks

/// BIOLOGY / HEALTH

- MARCH 2018 I ICEPS 2018 Cancer Conference: Effectiveness of non-drug interventions
- APRIL 2018 I Printemps de la Cardiologie cardiology conference
- MAY 2018 I 11th International Symposium on Minimal Residual Cancer
- JUNE 2018 I EBSA Course in Biophysics: Membrane and lipid-protein interaction
- JUNE 2018 I Cellular and molecular mechanisms of brain plasticity
- JUNE 2018 I 6th AIS Conference: Innovative approaches for discovery and validation

/// CHEMISTRY

- MAY 2018 I European Narcolepsy Conference
- MAY 2018 I Advanced Functional Polymers for Medicine
- JUNE 2018 I 17th Polymers and Organic Chemistry Conference
- JUNE 2018 I IAP2018 Interfaces Against Pollution
- JUNE 2018 I Electrospinning for Energy 2018

/// MATHEMATICS, INFORMATICS, PHYSICS, SYSTEMS

- MARCH 2018 I International Conference on BioMedical Photonics
- JUNE 2018 I MECEB 2018 Mathematical and Computational Evolutionary Biology

/// SOCIAL SCIENCES

- JANUARY 2018 I Living Territories
SHARING

TERRITORIES & SOCIETIES

CREATING LONG-LASTING HIGH-QUALITY TIES BETWEEN HIGHER EDUCATION AND RESEARCH, LOCAL AUTHORITIES, AND THE SOCIO-ECONOMIC WORLD
SEVERAL PROACTIVE ACTIONS WILL BE LAUNCHED IN 2018, INCLUDING PARTNERSHIP STRATEGY; ALIGNMENT OF MEMBER PROCEDURES, INCUBATION AND HOSTING POLICY; AND TECHNOLOGY PLATFORMS.

SHOWING THE IMPACT OF EDUCATION AND RESEARCH ON TERRITORIES AND SOCIETY

MUSE’s first video production – “Keeping water to preserve life” – was shown on World Water Day, March 22, 2018.

With an eye towards countries in the southern hemisphere, the project demonstrates the importance of establishing ties between education, research, and industrial partnerships.

The video offers a report on underground water resources on the northern slope of the Bromo volcano, in partnership with Gadjah Mada University (Java, Indonesia) and tight synergy with Danone Aqua as an industry partner. This initiative is entirely consistent with MUSE’s vision of focusing on southern countries.

Project led by Montpellier Hydrosiences (University of Montpellier, CNRS, IRD, CNRS).

Three inter-establishment working groups are concentrating on developing MUSE partnership strategy

A PARTNERSHIP PLATFORM

MUSE is committed to coordinating actions for partnerships-promotion teams at partner establishments to help align practices across different institutions and simplify procedures for research collaboration and services with private companies. This is accomplished, in particular, by deploying common methods and tools, and setting up a shared strategy for incubating and hosting businesses.

“INNOVATION MARKETING” PLAN

It is indispensable to highlight current research, as well as obtained results, for the socio-economic world to see and understand the potential for accelerating achievements through research. MUSE offers innovation in that respect by creating open spaces – showrooms that can be either physical or virtual — and thus encourage interactions.

PROACTIVE CONTACT WITH COMPANIES

The working group dedicated to this action focuses on defining an action plan and related means that will enable reacting to an ambitious hosting and incubation policy.

WITH #DIGITAG, MONTPELLIER POSITIONS ITSELF AS A CAPITAL FOR DIGITAL AGRICULTURE

As the only French Convergence Institute dedicated to digital agriculture, #DigitAg is establishing itself as the “reference” for research, education, and innovation in this field. Founded by 17 partners, 7 of which are companies, the Montpellier-based #DigitAg comprises 360 agronomists, computer scientists, economists, and sociologists. #DigitAg unites research, training and innovation efforts around challenges related to “better production” and the inclusion of farmers in society through digital technology: the impact of information and communication technologies (ICT) on the rural world; innovations in digital agriculture; sensors, data acquisition and management; information systems, data storage and transfer; structuring big agricultural data; modeling, and simulation.
UNPRECEDENTED REGIONAL FUNDING TO PROMOTE INNOVATIVE RESEARCH BEING CARRIED OUT WITH LOCAL COMPANIES

over €690,000
with 85% of funding from Occitanie regional authorities

University of Montpellier, INRA, Montpellier SupAgro, ENSCM, and CNRS joined forces in the momentum of the MUSE initiative to respond to a 2017 call-for-projects by the Occitanie regional authorities – PRIME (Bonus for Innovative Research Carried Out with Companies) – which seeks to develop new industry partnerships among companies in the Occitanie region.

Occitanie regional authorities provided funding of €582,452 in December 2017, coupled with €107,800 in funding from MUSE Initiative resources. The aid will be used to develop a specific action program for health, agriculture, chemistry, and MIPS (Mathematics - Informatics - Physics – Systems) over two years.

SUPPORT FOR INNOVATION MARKETING

The program plans to provide assistance for innovation marketing to elaborate a strategy for approaching regional companies, and to implement a communication plan and showrooms.

RECRUITMENT OF BUSINESS DEVELOPERS

Four business developers will form an operational team for commercial prospection and implementation of a communication plan leveraging sector-oriented tools adapted for industry partners in the region.

A steering committee is tasked with monitoring and evaluating this action program. The program involves François Pierrot (Executive Director, MUSE); Gaspard Lépine (in charge of relations with MUSE companies); and the various heads of Partnership Departments for the five associated establishments; Occitanie Regional Department of Research, Technology Transfer, and Higher Education; Eurobiomed cluster; French South Digital cluster; and Agri Sud-Ouest Innovation cluster.

Strategies resulting from these actions will be shared and can be promoted by the entire MUSE initiative consortium.

Innovation

UM DESIGNATED BY REUTERS 2018 RANKING AS THE MOST INNOVATIVE FRENCH UNIVERSITY

The Reuters ranking lists the 100 most innovative universities worldwide. Ranked #16 in Europe, and #1 in France, University of Montpellier leads Pierre and Marie Curie University, Paris-Descartes University, and Paris-Sud University. University of Montpellier held 5th place in France in 2017. Beyond UM, the entire consortium site can be proud of this recognition.

The ranking is entirely based on empirical data such as patent filings and citations in research publications. The ranking acknowledges the universities that make the greatest effort to advance science, invent new technologies, and help support progress in the global economy.
MUSE KEY INITIATIVES: THEMATIC AND CROSS-FUNCTIONAL MEASURES TO AFFIRM MUSE’S UNIQUE IDENTITY IN ITS TERRITORY AND FAVOR SYNERGIES AMONG RESEARCH – EDUCATION – SOCIETY EFFORTS

Inspired by interdisciplinary actions developed by University of California Davis (UC Davis) – a strategic MUSE partner – MUSE Key Initiatives are designed to support the consortium’s strategic vision for its territory in order to project itself both locally and internationally.

Located near the coast, in the heart of one of the world’s largest wine-producing regions, and in zones confronted by water resource challenges and the ongoing pressure of substantial population growth, MUSE research teams have been created to address research, education, and innovation issues related to the territorial context. The MUSE Board has identified 6 cross-functional topics that can complement existing tools (LabEX, MUSE calls-for-projects, etc.):

- WATERS
- BIOMARKERS & THERAPY
- SEA & COAST
- VINE & WINE
- DATA & LIFE SCIENCES
- SCIENCES & PUBLIC POLICIES

Progressive deployment of MUSE Key Initiatives is planned throughout 2018. With a global budget of 1.5 M€ per year for the program (over two years), each key initiative will adapt its actions based on the given field’s specifics: actions involving research – education – society, scientific events (notably designed for the general public), and tools designed to strengthen the ties between stakeholders in the socio-economic world.

The first key initiative approved by the MUSE Board, and officially presented to the scientific community, seeks to make Montpellier a center for excellence and expertise recognized worldwide in the water field.

The MUSE WATERS key initiative focuses on strengthening the organization and level of excellence in the “water community” and increase international exposure on the topic via a research-education-companies continuum to attract top scientific and student talent.

Leveraging a scientific community that had already begun to organize itself with the IM2E Scientific Interest Group and build relationships with the various water stakeholders in the region (Aqua-Valley cluster, local authorities, water utilities, etc.), Montpellier has all the strengths and assets needed to address the challenges facing inland water and lagoon areas:

- 15 research laboratories comprising over 320 full-time senior scientists
- A rich inter-institution training offer
- The presence of the Aqua-Valley competitiveness cluster, leader of France’s three water clusters
- Awareness of the need for integration with the economic community and interactions with society

Ties between the water community and the business world have already resulted in numerous partnerships and projects, including patent filings, company startups, and industry and corporate chairs. The goal is to reinforce and expand these interactions between academic and socio-economic spheres through actions implemented by the MUSE WATERS key initiative, both regionally and internationally, to the benefit of the entire water sector.
STEERING

GOVERNANCE
SETTING UP THE MECHANISMS AND STRUCTURES TO ENABLE EFFECTIVE ARTICULATION AND DEEPER INTEGRATION WITHIN THE UNIVERSITY OF MONTPELLIER

PROGRESSIVE STRUCTURING OF RESEARCH CLUSTERS

The MUSE Board defined the general scope of five future research clusters destined to become formal structures within the University of Montpellier starting in 2019. These 5 future clusters will cover the major research areas:

- AGRONOMICS
- ENVIRONMENT
- BIODIVERSITY
- BIOLOGY
- HEALTH
- CHEMISTRY
- MATHEMATICS
- INFORMATICS
- PHYSICS
- SYSTEMS
- SOCIAL
- SCIENCES

The Rabelais (Biology/Health) and Balard (Chemistry) clusters, affiliated with COMUE LRU until the end of 2017, are now managed by UM. Their activities will be continued as part of UM’s future Biology/Health and Chemistry research clusters. In April 2018, MUSE Board members designated five precursors and gave them a mission that will lead to formal proposals, organizational and governance aspects, definition of the scientific scope, and the means for interaction between University of Montpellier scientific departments.

WORKING TO CREATE A GRADUATE DIVISION

The creation of a Graduate Division is currently being examined, at the intersection of research clusters and colleges. The goal is to improve the attractiveness of our Masters programs and bring about new programs associated with the Support for Pedagogical Innovation program, Doctoral College (created in 2017), and Key Initiatives.

ORGANIZING COLLEGES

The colleges being considered meet a dual requirement:
- Favoring inter-establishment synergy within the major educational fields
- Simplifying access to information describing all partners’ training offers

The colleges are defined according to the scope of the main educational fields:
BUILDING AN INTEGRATIVE UNIVERSITY

ALL CONSORTIUM PARTNERS ARE UNITED AROUND 5 RESEARCH CLUSTERS AND 9 MAIN EDUCATIONAL DISCIPLINES
Creation of a visual identity

Approved by the MUSE Board in October 2017, the project logo is displayed on all partner websites and is being deployed progressively across communication materials for all research laboratories and components in the consortium. The logo embodies 3 guiding principles:

- Integration of the logo of University of Montpellier (one of the consortium partners and manager of the project)
- The icons serve as a reminder that MUSE focuses on 3 key societal issues: Feed - Protect - Care
- The acronym functions as a reference and reminder regarding MUSE’s operation in project mode

UM itself is also one of the project’s results: the university must change to align with international standards.

A dedicated website and monthly electronic information letter

MUSE has its own website in French and English:

MUSE.UMONTPELLIER.FR

The site is integrated with the University of Montpellier website and gives everyone access to the information needed to understand the project, and keep up with news and progress.

Created in March 2018, the MUSE information letter offers 7 articles about MUSE and partner activities. The newsletter is distributed internally to all UM staff and students, and via each partner’s communication team. External parties may subscribe to the muse-info@umontpellier.fr mailing list to receive the newsletter regularly.

A specific Twitter account – @IsiteMUSE – was created to relay project news and highlights concerning member establishments and organizations. Project news is published regularly on the University of Montpellier LinkedIn account (with 56,000 subscribers) and relayed by all the consortium members.

Various communication materials have been designed to promote the MUSE image on a broader scale and help people understand its role. Materials include roll-up posters, information folders, publicity items, and more.