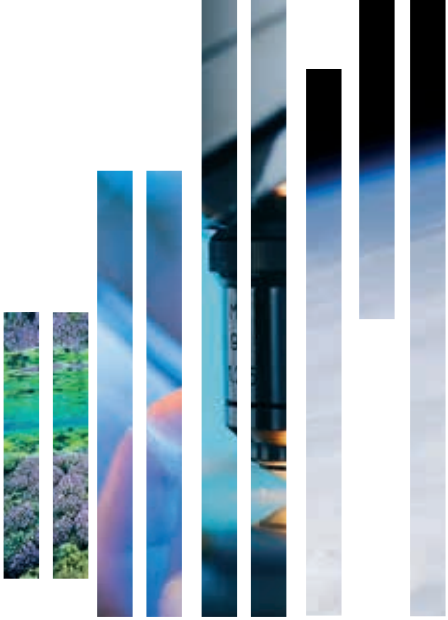
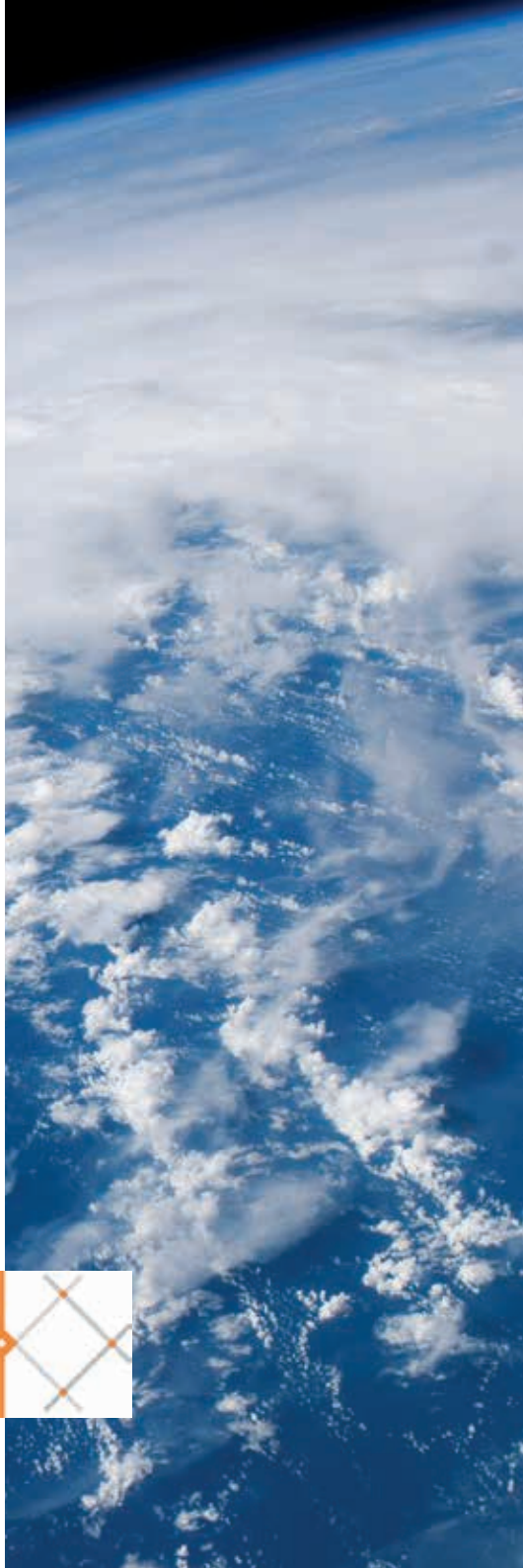


THE RESEARCH

at the University of Perpignan



UNIVERSITÉ
PERPIGNAN
VIA
DOMITIA

The research at the University of Perpignan Via Domitia

The University of Perpignan Via Domitia is committed to carrying out research of the highest level.

From 2010, the French government issued calls for proposals within the framework of the «Future Investment Programme». The aim of the programme was to «give research units with international profiles considerable resources so that they could compete on a level playing field with comparable overseas units, attract world-renowned researchers and professors and develop a high-level integrated policy for research, training and development». Following these calls for highly selective proposals, the UPVD's 16 research units are currently involved in 7 LABEX (laboratory of excellence) projects, an EQUIPEX (equipment of excellence) project, an IDEFI (innovation training excellence initiative) and two UPVD-CNRS research chair in excellence programmes.

This recognition is a means for us to consolidate the specific aspects of our research according to five cross-category multidisciplinary areas.

The «Perpignan-Odeillo» site has obtained both a Labex and an Equipex project, establishing it as a major international centre in solar energy research. Similarly, the University's involvement in France's largest agronomics Labex project has bolstered Perpignan's reputation in plant genomics.

Since 2012, the University of Perpignan Via Domitia has sought to significantly strengthen its links with a number of major national research organisations, such as the CNRS (French centre for scientific research), Paris National Natural History Museum, the IRD (Institute of Research for Development) and the EPHE (one of France's most prestigious research and higher education institutions). One of the results of this proactive policy has been the creation of seven laboratories that have links with the CNRS: five joint research units, one service and research unit and one research unit in its own right. Furthermore, the UPVD has collaborated with the IRD on setting up a development aid federation and has been hosting an IRD research team onsite since January 2015.

The UPVD has also structured its research activities at regional, national and European level. This has resulted in nine co-supervision schemes or agreements with laboratories attached to

the universities of Montpellier, Paris VI (Pierre and Marie Curie) and Girona. The UPVD's équipes d'accueil research teams are also structured in this way, one of which is investigating exercise physiology at altitude.

The various bodies involved in research at the UPVD also get support from the University of Perpignan Via Domitia Foundation to help them interact more effectively with the local socio-economic world. This ensures that the areas of expertise in which its laboratories work can therefore be better tailored to meet the requirements of companies. The Foundation also plays a key role in helping the start-up companies that emerge from our research activities to network, so that they can enjoy the support of member industrial partners. Create a start-up at UPVD is now a reality thanks to the new incubation hotel of innovating companies.

16 Research units accredited by the French ministry:
5 UMR, 1USR, 1UPR, 4 EA, 2 EA in co-supervision,
3 teams with partners laboratories

1 Development aid research federation

450 Professors, researchers, associate and assistant professors on site

90 Engineers, technicians and laboratory staff

350 PhD students

7 Laboratories of excellence (LABEX)

1 Equipment of excellence (EQUIPEX)

1 Innovative excellence in training initiative (IDEFI)

7 Research and technology transfer platforms

360 International publications per year

Odeillo solar furnace
PROMES - CNRS

An ideal region for a research focused on sustainable development

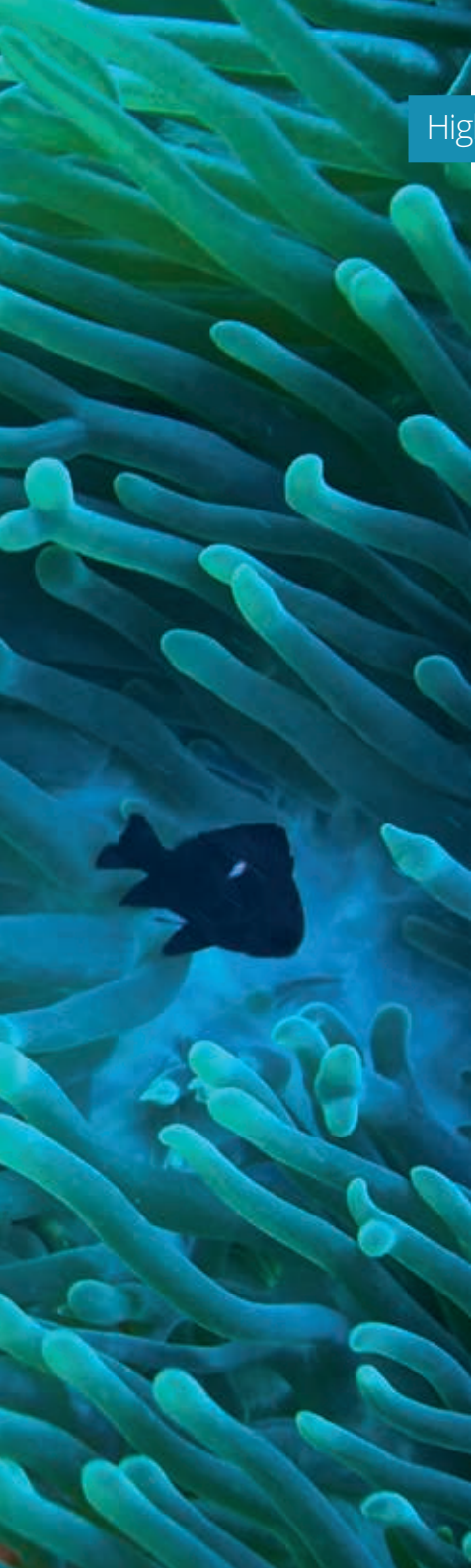
This one particular area in France has been the scene for experimentation in geography, environment, society and energy for more than 560,000 years, with projects endlessly jostling and intersecting with one another.

Layers of stratified soil discovered in nearby Tautavel show how both the environment and humankind have changed and evolved over the years. The impact that modern human kind has had on the environment can be measured by analysing molecules in water bodies and lagoons. Beneath the extremely generous sunshine of Odeillo and Thémis, the energies of the future are being developed. In the Cerbère-Banyuls Marine nature reserve, schemes for regenerating the fish stocks in the natural environment and along the coast are being developed – future regulations are likely to encourage greater sustainability.

Marine nature reserve park of Cerbère-Banyuls

Major sites

- the Odeillo solar furnace (CNRS)
- the Thémis solar power tower at Targasonne (CD 66)
- the Font-Romeu olympic sports facilities
- the Gulf of Lion marine nature park and the Cerbère-Banyuls marine nature reserve
- the coast and its lagoon complex
- the Caune of Arago prehistoric cave at Tautavel



High performance research

1 IDEFI

MIRO

Multilingual cross-border professional master's degree in cultural tourism, delivered entirely remotely on an e-learning platform.

7 RESEARCH and TECHNOLOGY TRANSFER PLATFORMS

Bio-Environnement

Biotechnology and molecular biology.

Bio2Mar

Biodiversity and marine biotechnologies.

EnRMAT (C2M-CESP)

Renewable energies, materials, applications and transfer processes.

CREM-IEEM

Intervention and valuation expertise in marine environment.

Animal collections

Parasitology, ecological and fish stock restauration.

SO CORAIL

Physico-chemical and biological data about coral reef ecosystems.

SEE CORAIL

Coral reef test platform for developing instruments in a non-laboratory environment.

7 LABEX

AGRO

Focused on plants of agronomic value. Research ranges from the study of genes to the end uses of plants.

LGDP partner laboratory (p.28)

ARCHIMEDE

Centre of excellence for research and education about the ancient Mediterranean region of Egypt.

CRESEM partner laboratory (p.33)

CeMEB

Dynamics and functionning of biodiversity and ecosystems in global environmental changes due, in particular, to the human activities.

IHPE partner laboratory (p.24)

CORAIL

Knowledge platform about coral reef ecosystems, designed to bring about more effective management of them.

CRIOBE coordinator laboratory (p.21)

ENTREPRENDRE

For creating and sharing knowledge about undertaking work at the intersection of law, economics and management sciences.

MRM coordinator laboratory (p.37)

SOLSTICE

Creating the country's leading research unit and one of the two leading European research groups in the field of concentrated solar power technology, including all conversion modes.

PROMES coordinator laboratory (p.29)

TULIP

Interdisciplinary approach combining biology and ecology, focused on interactions between organisms or communities in natural environments or ones that have been modified by humankind.

LGDP partner laboratory (p.28)

1 EQUIPEX

SOCRATE

National experimental platform with an international angle carrying out research in the area of concentrated solar energy.

PROMES coordinator laboratory (p.29)

Research is central to development

3,8€ millions of research contracts secured every year by the UPVD's professors, associate and assistant professors.

The research carried out within the UPVD's various departments results in numerous applications in collaboration with major industrial groups and SMEs – both in France and abroad, as well as with many institutions, local authorities and foundations.

Companies

- Medical, chemistry and food processing industries: Bayer, Cémoi, Sanofi, Groupe ICV,...

- Energy environment: Areva, Air Liquide, EDF, BRL, Saint Gobain, Shell, Suez, Total, Veolia,...

- Information and communication technologies: EADS, IBM, Rockwell Collins, Thalès,...

SMIs, SMEs

- Abies Lagrimus, Akinao, Craft ai, Coldway, DropSens, Ecocean, Eco-Tech Ceram, Egiseau, Energie R, Exoes, Exosun, Immersion Tools, Inpixal, Numalis, Pyres.com, Seaneo, Sunways, Prover, Prover, Tchebyflow,...

Institutions

- CNRS, IRD, EPHE, MNHN, CIRAD, IFREMER, ONERA, CEA, INRA, CNES, INRIA, European Union, ANR, OMS, ARS, INSEP, French tourism agencies, Total Foundation, Protection program agency, LR SATT AxLR transfer...

The clusters

DERBI

The DERBI Competitivity cluster is made up of stakeholders from the Occitanie region involved in developing the renewable energies sector.
The DERBI cluster is hosted on the UPVD campus.

QUALIMEDITERRANEE

Sustainable agrotechnology cluster with nationwide influence established at local level in the former Languedoc-Roussillon region.

MER

The purpose of the Mediterranean Sea cluster is to sustainably develop the maritime and coastal economy in the Provence-Alpes-Côte d'Azur and Occitanie regions, as well as in Corsica.

AQUA VALLEY

The Aqua Valley competitivity cluster has a global approach and brings together stakeholders involved in water throughout the Occitanie and Provence-Alpes-Côte d'Azur regions.

AGRI SUD OUEST INNOVATION

Agricultural and agro-industrial competitivity cluster based in the south-west (Occitanie and Nouvelle Aquitaine) which works with more than 350 members.

Companies and start-ups spawned by laboratories

AKINAO

Develops and validates methods for analysing natural substances derived from plants and microorganisms of marine origin.

From CRIOBE (p.21)

ECO-TECH CERAM

Develops refractory ceramics by recycling inorganic industrial waste for energy storage.

From PROMES (p.29)

ENERGIE R

Specialists in building thermal design, fluids and renewable energies.

From PROMES (p.29)

NUMALIS

Develops automatic tools for detecting and correcting numerical errors in software.

From LAMPS (p.26)

PARADEV

Synthesis of bio-products used in medical diagnoses for screening for parasitic diseases.

From IHPE (p.24)

TCHEBYFLOW

Mathematical modelling and scientific applications for industry and academia.

From LAMPS (p.26)

30 % of all research contracts involve collaborations with private partners.

The UPVD Foundation

The UPVD Foundation supports research and higher education. It was founded in 2008 in order to serve as a link between the University and the socio-economic world. The role it plays in fostering innovative new projects is essential.

With the help of its sponsors, the UPVD Foundation supports high value-added public interest initiatives, such as financing the UPVD's research projects and creating thematic.

The incubation hotel of innovative companies *UPVD In Cube*

- A one-stop entity set up to bring the University closer to the socio-economic world.
- A structure that is dedicated to projects linked to the University's research and student projects.
- 10 projects hosted in closed offices and a shared working area for emerging projects.
- Support that includes personalised tracking, training programmes, mentoring, help setting up a website and opportunities to network with other bodies in the entrepreneurial ecosystem.
- A new vehicle for the region which will increase its appeal, perhaps by encouraging other companies to establish a presence there.

Research axis: Exact and experimental sciences

Living organisms and ecology

The global changes which our planet is currently experiencing are triggering major disruptions that are affecting the ways in which living organisms function, eroding biodiversity and destabilising our ecosystems. One of the challenges that biology has to take up nowadays is to tackle different scales of investigation in an integrated fashion, ranging from the smallest molecular mechanisms to the largest levels of organisation (such as populations and ecosystems). This will provide us with the resources we need to take action, monitor or even predict how the living organisms of the future will function.

Research units:

LGDP, IHPE, CRIOBE, LEPSA, CEFREM, ENTROPIE

Dynamics of environment and of anthroposystems

Humankind has become the main factor driving changes in nature. This area of research focuses on the environments within the Mediterranean land/sea continuum and looks at both the natural and anthropic processes that control the marine and sedimentary environments. The work involves adopting multidisciplinary approaches in chemistry, ecology and geology in order to describe, represent and model the way in which different ecosystems work and are changing under both natural and anthropogenic pressures. The aim is to play a part in creating an integrated management approach and develop a means of sustainably using natural resources by transferring and sharing the University community's expertise.

Research units:

CEFREM, IMAGES-ESPACE DEV, BAE-LBBM, CRIOBE, ENTROPIE

Renewable energies, associated processes and materials

This is an area of research which is naturally seeing many developments, since it is generally focused on all energy sources. But it is currently focused on initiatives involving solar power in particular (high and low temperature thermal solar power, photovoltaic cells, etc.), since there are a number of world-renowned solar installations close by. The research being conducted looks at so much more than just energy production: it tackles integration, energy system dynamics and management, energy storage and developing materials with controlled properties for energy conversion, as well as the behaviour of these materials when subjected to considerable stresses and solar chemistry.

Research units:

PROMES, LAMPS

Theory, complex systems, modelling

Based on the model system concept, research undertaken in this area is used to analyse actual phenomena and to predict results by applying one or several theories at a given level of approximation. The research is also used to build different information systems. Research is undertaken in applied mathematics, information technology, physics and theoretical chemistry.

Research units:

LAMPS, DALI-LIRMM

Research axis:
Human, social, legal and economic sciences

Mediterranean and beyond: culture, regions, heritage, markets

This area of research looks into the complex interactions between societies and cultures and the regions that they occupy. Across a geographic field the centre of which is the area covered by the Pyrénées-Méditerranée region, research is carried out across embedded scales, from local to international level. It is underpinned by human and social science disciplines, within which issues to do with the relationship between humankind and the environment, the role played by various stakeholders, languages, the development of legal, linguistic and economic practices and standards – and markets in particular – are all central to concerns.

The approach involves creating knowledge through fundamental and academic research so that it can be used by the region for its most practical applications, and so that it can be shared among the general

Research units:

ART-Dev, CDED, CORHIS, CRESEM, HNHP, MRM

Research axis: Development aid

Development aid research federation

The UPVD is a multidisciplinary university whose research naturally covers a wide range of areas. This research is applied at international level within the framework of numerous partnerships which often involve development aid.

The work carried out is in a number of extremely varied scientific areas, including regional development, energy and water, food safety, health, teaching and training.

Development aid is also a specialist field in itself. The UPVD is supported by the ART-DEV laboratory and the IRD ENTROPIE research team. This team is hosted on site and supports this approach, together with the initiatives to be implemented.

The UPVD and the institute of research for development have created a Development Aid Federation – the *Fédération d'Aide pour le Développement*. This cross-functional body has been deliberately set up as a borderless and seamless entity and is run dynamically by a number of multidisciplinary project teams. It is supported by the Academy of Sciences through Michel Delseny – a member of the Academy and emeritus director of CNRS research at the Plant Genome and Development Laboratory (LGDP).

Research units:

ART-Dev, ENTROPIE, PROMES, LGDP, IHPE, CRIOBE, LAMPS, IMAGES-ESPACE DEV, CDED, CRESEM

The research units: Exact and experimental sciences

BAE-LBBM: Biosensors, analysis, environment, project team of the USR 3579 UPMC-CNRS (INEE)

CEFREM: Centre of education and research on the mediterranean environment, UMR 5110 UPVD-CNRS

CRIOBE: Centre for island research and environmental observatory, USR 3278 UPVD-EPHE-CNRS-PSL

DALI-LIRMM: Digits, architectures and computer sofwares, project team of the UMR 5506 CNRS-UM

ENTROPIE: Tropical marine ecology of the Pacific and Indian oceans, UMR 9220 IRD-CNRS-UR

IHPE: Host, pathogens, environments, interactions, UMR 5244 UPVD- CNRS (INEE)-IFREMER-UM

IMAGES-ESPACE DEV: Modelling and analysis in geo-environment, project team of the UMR 228 IRD-UM-UAG-UR

LAMPS: Laboratory of mathematics and physics, EA 4217 UPVD

LEPSA: Performance, health and altitude european laboratory, EA 4640 UPVD

LGDP: Plant genome and development laboratory, UMR 5096 UPVD-CNRS

PROMES: Processes, materials and solar energy laboratory, UPR 8521 CNRS (INSIS) - UPVD convention

The research units: Human and social sciences

ART Dev: Actors, ressources and territories in the development, UMR 5281 UPVD -CNRS-UPVM-CIRAD-UM

CORHIS: Communication, human ressources and social intervention, EA 7400 UPVD-UPVM

CRESEM: Centre for research into societies and environments in the mediterranean and beyond, EA 7397 UPVD

HNHP: Natural history of the prehistoric human being, UMR 7194 UPVD-CNRS-MNHN

The research units: Legal and economic sciences

CDED: Centre for economic law and development, EA 4216 UPVD

MRM: Montpellier Research in Management, EA 4557 UM-UPVD-UPVM-MBS

The research units in exact and experimental sciences

BAE-LBBM

Biosensors, analysis, environment
Project team of LBBM,
USR 3579 UPMC-CNRS (INEE)

8 researchers / professors
12 PhD students and postdoctoral researchers
4 technical and administrative staff

Main objectives

- Development of bioassays and electrochemical biosensors for environment, agri-food and health applications.
- Study of the biodegradation of xenobiotics and their interactions with soil organic matter.

Research areas

- Biosensors and sensors
- Diagnostic and environmental impacts
- Ecology of pathogens
- Biodiversity and chemodiversity

Main equipments

- Electrochemical stations
- Spectrofluorometers
- Chromatographs
- Screen-printing machine

Site

- Perpignan

Master

- Marine sciences (MOBIE)

Main partnerships

Suez, Veolia, Cémoi, ICV, Dropsens,...

Contact

BAE team manager: Pr Thierry Noguer
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noguer@univ-perp.fr
http://bae.univ-perp.fr

CEFREM

Centre of education on research mediterranean environments
UMR 5110 UPVD-CNRS

20 researchers, assistant, associate, professors
14 PhD students and postdoctoral researchers
11 technical and administrative staff

Main objectives

Coastal environments, focusing on the socio-economic issues inherent in using them. Research into matter and energy transfers at the coastal system's interfaces. Physical exchanges of water masses, particles and other elements (carbon in particular) within the continent/ocean continuum. Its marine ecology resources have recently been bolstered.

Research areas

- Geosystems and ecosystems
- Resources and natural hazards

Sites

- Perpignan
- Le Barcarès

Main partnerships

Public research organisms in France and Europe (Spain, Greece, Italy, Turkey...), Veolia, Lyonnaise des Eaux, Agence de l'eau RMC, Total, IFREMER, CD 66, DREAL LR, Parc marin du Golfe du Lion.

Main equipments

- Mediterranean Languedoc-Roussillon Coast observation platform (POEM-L2R)/ land-sea transfer monitoring
- Marine environment intervention and expertise platform (CREM-IEEM)

Masters

- Marine sciences
- Biodiversity

Contact

Director: Pr Wolfgang Ludwig
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http://cefrem.univ-perp.fr

CRIOBE

Centre for island research and environmental observatory
USR 3278 UPVD-EPHE-PSL-CNRS
LABEX CORAIL, coordinator

21 researchers, associate, professors
30 PhD students and postdoctoral researchers
23 technical and administrative staff

Main objectives

- Study of coral reefs.
- Analysis of the origins of biodiversity and the ways in which it is maintained, chemical ecology, the characterisation and biological activities of new metabolites and the way in which the ecosystem functions.

Research areas

- From the gene to the molecule
- Population biology, chemical ecology and interactions within ecosystems
- Functioning and governance of socio-ecosystems

Sites

- Perpignan (France)
- Moorea (French Polynesia)

Main partnerships

- Labex CORAIL, Tara Pacific Expedition, Ministère transition écologique (ICRI, GCRMN, IFRECOR), French territorial communities, local communities in French Polynesia, Foundations (France, BNP-Paribas, Total), public research funding agencies (ANR, EU, FFEM, AFD)

Main equipments

- Bio2Mar technology platform
- Bio-environment technology platform
- Experimental ecology station (INEE)
- INSU Observation service
- Pacific coral reef institute

Masters

- Marine sciences - UPVD
- Coral reefs - EPHE
- SPOC ENSAD

Contact

Director: CNRS RI Annaïg Le Guen
+33(0)4 68 66 20 55 ou +689 40 56 13 45
www.criobe.pf

DALI - LIRMM

Digits, architectures and computer softwares
Project team of LIRMM, UMR 5506 UM-CNRS

6 assistant, associate, professors
5 PhD students and postdoctoral researchers
1 technical and administrative staff

Main objectives

Numerical accuracy, high-performance computing and IT security.

Research areas

- Performance improvement and parallelism
- Improved operation of new multicore architectures
- Algorithms and tools for better numerical accuracy in computing
- Safe and effective implantation of cryptographic protocols

Main partnerships

- CNRS, INRIA
- CEA, CERN, EDF R&D, Kalray, InPixal, Thalès
- Actlity, 3E
- HPC@LR Mesocentre
- Academic international collaborations: Germany (Technical University Hamburg), Australia (University of Wollongong), Japan (University of Waseda-Tokyo), United Kingdom (University College Dublin)

Main equipments

- Servers and HPC computation accelerators

Master

- High performance computing, simulation

Site

- Perpignan

Contact

DALI team manager:
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P. Langlois: +33(0)4 68 66 20 52
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http://webdali.univ-perp.fr

ENTROPIE

Tropical marine ecology of the Pacific and Indian oceans
UMR 9220 IRD-CNRS-UR
LABEX CORAIL

30 researchers
22 PhD students and postdoctoral researchers
9 technical and administrative staff

Main objectives

- Indo-Pacific tropical marine ecology.
- Functioning of tropical marine and island ecosystems and their evolution in the face of natural and anthropogenic pressures of various spatial and temporal scales.
- Study of evolutionary processes affecting the tropical marine biodiversity of the Indo-Pacific region.
- Humankind and its social structures in ecosystems and a quantification of the uses that societies make of tropical marine resources.

Research areas

- Diversity of evolutionary processes and life history traits
- Structure, functioning and vulnerability of ecosystems
- Uses and management of resources and ecosystems and enhancing their value

Sites

- Perpignan
- New Caledonia
- Reunion
- Indonesia
- Madagascar

Main equipments

- Technical platforms (molecular biology, otholitometry, etc.)
- Hyperbaric operations service and seafaring vessels at the Noumea and Reunion island sites

Main partnerships

- Labex CORAIL
- Laboratories: CRIOBE, CEFREM, IHPE
- UPVD development aid research federation

Contact

Team manager of Perpignan:
Dr Mehdi Adjeroud
mehdi.adjeroud@ird.fr
http://umr-entropie.ird.nc

IHPE

Hosts, pathogens, environments, interactions
UMR 5244 UPVD-UM-CNRS (INEE)-IFREMER, LABEX CeMEB, OMS

23 researchers, assistant, associate, professors
18 PhD students and postdoctoral researchers
13 technical and administrative staff

Main objective

Study of various interaction biological systems involving several invertebrate species of medical, veterinary, economical, or ecological interest.

Research areas

- Interaction and adaptation mechanisms in marine environments
- Ecology and evolution of host-parasite interactions
- Epigenetics in ecology and evolution
- Holobiont and fitness

Sites

- Perpignan
- Montpellier

Main partnerships

- World Health Organization (WHO)
- Labex CeMEB
- Many international collaborations (USA, EU, Africa, South America)
- Sources of funding (ANR, EU, Welcome trust, ANSES, ...)

Main equipments

- Bio-environment technology platform
- Experimental aquaculture platform in Palavas-les-Flots
- Animal and pathogen collections

Master

- Biodiversity, ecology, evolution

Contact

Director: Pr Guillaume Mitta
+33(0)4 68 66 20 50
mitta@univ-perp.fr
http://ihpe.univ-perp.fr

IMAGES - ESPACE DEV

Modelling and analysis in geo-environment
Project team of ESPACE DEV, UMR IRD 228 UM-UR-UAG

8 assistant, associate, professors
7 PhD students and postdoctoral researchers
2 technical and administrative staff

Main objectives

- Environmental questions considered on both macroscopic scales (simulation of global acidification) and microscopic scales (change due to stress inside a cellular organism).
- Issues to do with public health studied in an integrative manner with ecology, evolution and controlling infectious diseases.

Research areas

- Modelling complex «distributed» systems, cellular automata and digital processing
- Modelling marine, biogeochemical cycle and anthropogenic carbon
- Fluorescence spectroscopy applied to cellular biology
- Climate impact and ocean acidification
- Ecology of health and public health ecosystem services

Site

- Perpignan

Main partnerships

- System theory network
- Many international collaborations (EU, Africa, Americas)

Main equipments

- Measuring devices using fluorescence imaging and timeresolved microscopies
- Devices for measuring the carbonate system properties (pH, pCO2, A_T/C_T)

Masters

- Marine sciences
- Electronics, electrical energy, mecanics
- High performance computing, simulation
- Energy

Contact

IMAGES team manager:
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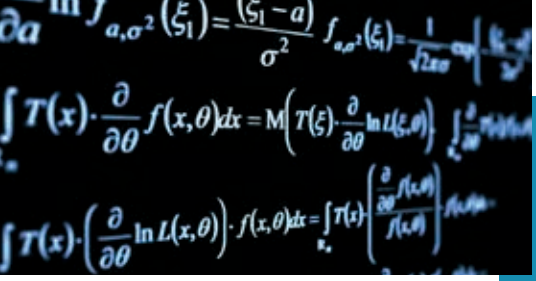

LAMPS

Laboratory of mathematics and physics
EA 4217 UPVD

27 assistant, associate, professors
18 PhD students and postdoctoral researchers
3 technical and administrative staff

Main objectives

Modelling, analysis and digital simulations with applications in mechanics, physics, chemistry and engineering sciences.

Research areas

- Fluid, thermal and energy mechanics
- Molecular and spin relaxation processes
- Contact mechanics
- Control and game theory
- Partial differential equations
- Numerical software verification
- Hybrid discrete continuous systems

Site

- Perpignan

Main partnerships

- Airbus, Rockwell Collins, Thalès, Numalis, Assystem, laboratories in Europe, America, Africa, Asia

Main equipments

- Computing servers

Masters

- High performance computing, simulation
- Electronics, electrical energy, mechanics

Contact

Director: Pr Robert Brouzet
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sec-meps@univ-perp.fr
http://lamps.univ-perp.fr

LEPSA

Performance , health and altitude
European laboratory
EA 4604 UPVD

10 assistant, associate, professors
1 PhD student
2 associated doctors

Main objectives

Development of research focusing on performance, moderate altitude and health. Located at 1850 m above sea level near the Spanish border, this unit mainly conducts applied research devoted to sports science.

Research areas

Human beings in motion and their adaptation to exercise at moderate altitude: physiological and psychological approach. People concerned: high-level athletes, athletes competing in mountain sports or in other types of sport, sedentary subjects and subjects suffering from chronic pathologies.

Site

- Font-Romeu (site of UPVD)

Main partnerships

- Hospital of Cerdagne Puigcerda
- Faculty of medicine of Girona
- Hopital Germans Trial i Pujol Barcelona
- Hospital of Perpignan

Main equipments

- Cosmed K4 appliances for measuring gaseous exchanges
- Cycle ergometers
- Spirometer
- Body composition analyser
- Centrifuges
- Heart-rate monitors

Master

- STAPS (Physical activity and sports science and technology)

Contact

Director: Dr Eric Fruchart
eric.fruchart@univ-perp.fr
+33(0)4 68 30 01 51
http://lepsa.univ-perp.fr

LGDP

Plant genome and development laboratory
UMR 5096 UPVD-CNRS
LABEX AGRO et TULIP

24 researchers, assistant, associate, professors
9 PhD students and postdoctoral researchers
16 technical and administrative staff

Main objective

Research into the mechanisms for reprogramming plant gene expression and restructuring plant genomes in stress conditions.

Research areas

- Biology and plant molecular genetics
- Plant genomics
- Plant cell biology
- Plant physiology
- Theoretical biology

Main equipments

- Bio-environment platform
- Culture rooms
- qPCR
- Transgenesis
- Bioinformatics
- Confocal microscopy
- Sequencing

Site

- Perpignan

Master

- Biodiversity, ecology, evolution

Main partnerships

- Labex AGRO
- Labex TULIP
- Many international collaborations (USA, EU, Africa, Asia, South America)

Contact

Director: Pr Olivier Panaud
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dir.lgdp@univ-perp.fr
http://lgdp.univ-perp.fr

PROMES

Processes, materials and solar energy
UPR 8521 CNRS (INSIS)
convention UPVD
LABEX SOLSTICE, coordinator
EQUIPEX SOCRATE, coordinator

50 researchers, assistant, associate, professors
57 PhD students and postdoctoral researchers
40 technical and administrative staff

Main objectives

- Study of solar energy, particularly concentrated solar energy and all its applications.
- Research undertaken with major concentrated solar power installations in France: solar furnaces and Thémis solar tower in particular.

Research areas

- Materials and extreme conditions
- Energy conversion, storage and transport

Sites

- Perpignan
- Font-Romeu Odeillo
- Targasonne

Main partnerships

- European (infrastructure SFERA and EU-Solaris, FP7 et H2020 projects)
- Industrials (companies in energy, materials and space sectors)
- National and international networks (Fedesol, SolLab, Solar Paces, SINERGIE)

Main equipments

- 1 solar furnace - 1 megawatt
- 11 mean size solar furnaces
- 1 parabolic through solar microplant - 150 kilowatts

Master and engineering school

- Energy
- Electronics, electrical energy, mechanics
- European EUREC (thermal solar energy)
- Engineering school Sup'EnR

Contact

Director: CNRS DR Alain Dollet
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The research units in human and social sciences

ART-Dev

Actors, ressources and territories in Development
UMR 5281 UPVD-UPVM-UM-CNRS-CIRAD

59 researchers, assistant, associate, professors
63 PhD students and postdoctoral researchers
9 technical and administrative staff

Main objectives

Research into the ways in which regions can become reconfigured from an economic, political and social standpoint. It interrelates the dynamics of globalisation and local dynamics in order to do this. In particular, it analyses the ways in which regions become reconfigured on construction and mobilisation by the diversity of bodies involved in a set of resources in both a tangible and intangible way.

Research areas

- Rural reconstructions and public policies
- Natural resources and environmental regulation
- Interfaces, anchorings and traffic in a globalised world
- Asymmetries, public action and games of scale

Sites

- Perpignan
- Montpellier

Main partnerships

- Many international collaborations (USA, EU, Africa, Asia, South America)

Master

- Urban development and town planning

Contact

Director: Dr Denis Pesche
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http://art-dev.cnrs.fr

CORHIS

Communication, human ressources and social intervention
EA 7400 UPVD-UPVM

31 assistant, associate, professors
31 PhD students and postdoctoral researchers
3 technical and administrative staff

Main objectives

- Analysis of stakeholders, schemes, institutions and networks involved in social transformations.
- In Perpignan: scope of social welfare (tackling exclusion, discrimination and inequality; providing support for vulnerable people).

Research areas

- Communication and social transformation
- Human resource management: company change and changes in labour and employment relations
- Science of intervention and social transformation (Perpignan team):

1. Ethics, epistemology, behaviour, procedures, methods and tools for intervention
2. Analysis of tools and systems for «becoming an agent of change» among individuals, groups, organisations and institutions
3. Analysis of the network aspect of social intervention on social work

Sites

- Perpignan
- Montpellier

Master

- Sociology

Main partnerships

- International collaborations (Spain, Canada)
- Max Weber Lyon 2 laboratory
- FAIRE-ESS Occitanie Institute
- IRTS/IDS Normandie
- PREFIS Occitanie

Contact

Team manager of Perpignan:
Pr Manuel Boucher
manuel.boucher@univ-perp.fr

CRESEM

Centre for research into societies and environments in the Mediterranean and beyond
EA 7397 UPVD
LABEX ARCHIMEDE

83 assistant, associate, professors
130 PhD students and postdoctoral researchers
2 technical and administrative staff

Main objectives

- Structuring and promoting disciplinary and multidisciplinary research across the whole spectrum of human and social sciences, as well as legal and economic sciences.
- Setting up programmes which research the relationships between society and the environment.

Research areas

- Agents involved, societies, territories
- Languages and identities
- Norms and comparative law
- Heritages
- Texts

Site

- Perpignan

Main partnerships

- CD 66, région Occitanie, Mairie de Perpignan, Generalitat de Cataluña, CNRS, Institut Jean Vigo, Puig museum, International centre of photojournalism, ASFEA, Rivesaltes memorial
- Many international collaborations (USA, EU, Africa, Canada)

Masters

- Master Mundus «Crossways in Cultural Narratives»
- Applied foreign languages
- Language sciences
- Art, literature and civilisation
- History, civilisations, heritages
- Sociology
- Tourism (MIRO)
- European and international studies
- Comparative law

Contact

Director: Pr Martin Galinier
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HNHP

Natural history of the prehistoric human being
UMR 7194 MNHN-UPVD-CNRS

43 researchers, assistant, associate, professors
18 PhD students and postdoctoral researchers
32 technical and administrative staff

Main objectives

Naturalistic and multidisciplinary study of Prehistory rooted in a heritage approach the keywords of which are human lineage, environments, behaviours and long term.

Research areas

- Dynamics of early human settlements
- Behaviour of Neanderthals and anatomically modern humans replaced in their paleoecological context
- Prehistoric landscapes, people, sedimentary archives and materials

Sites

- Perpignan
- Tautavel
- Paris
- Les Eyzies de Tayac

Main partnerships

- Mairie de Tautavel
- Human paleontology institute
- CEA

Main equipments

- Sedimentology platform
- Geochronology platform
- Palynology platform
- Platform for characterising archaeological materials

Master

- Archeology, sciences for the archeology, quaternary and prehistory program

Contact

Team manager of Tautavel:
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http://hnhp.cnrs.fr

The research units in legal and economic sciences

CDED

Centre for economic law and Development
EA 4216 UPVD

37 assistant, associate, professors
55 PhD students and postdoctoral researchers
1 technical and administrative staff

Main objective

Cross-sectional study of markets

Research areas

- Ecnomic law
- Environment law
- Health

Sites

- Perpignan
- Narbonne

Main partnerships

- Dalloz
- Association: *Henri Capitant des amis de la culture juridique française*
- European private and comparative law institute (University of Girona)
- DANTE laboratory (Versailles-St Quentin university)

Masters

- Environment and urban planning law
- Property legislation
- Business law
- Justice, trail and legal proceedings
- Public administration

Contact

Director: Pr Marcel Sousse
Co-director :
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marcel.sousse@univ-perp.fr

MRM

Montpellier research in management
EA 4557 UM-UPVM-UPVD, MBS
LABEX ENTREPRENDRE, coordinator

139 assistant, associate, professors
90 PhD students and postdoctoral researchers

Main objectives

Research into management sciences and management of organisations. The research carried out for this mainly into the four following categories: food-processing industry, innovation, responsible management and health.

Research areas

- Agri-food
- Innovation
- Health
- Responsible management

Sites

- Perpignan
- Montpellier

Main partnerships

- UMR MOISA, Agro Paristech
- CEA, Ordre régional des experts comptables

Masters

- Management
- Sector management

Contact

Team manager of Perpignan:
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Research organisation

Research management

Vice-President of research and transfer: Pr David Giband

- Research committee academic board
- Scientific bureau
- Research grants
- Cross-functional research
- Institutional research-related relations

Contact: vp-cs@univ-perp.fr

Technology transfer

- Incubation hotel of innovative companies, *UPVD In Cube*
- Industrial property
- Industrial and commercial activities department
- Technology transfer

Contact: vp-valo@univ-perp.fr

Research and technology transfer service

Administrative director: Audrey Pagès

Research, doctoral school and applied research administrative management.

Contact : audrey.pages@univ-perp.fr

The doctoral schools

ED 305 : Energy - Environment

Areas of research

Life and Earth sciences, processes, renewable energies, IT, physics and applied mathematics, marine environments, sports science.
120 PhD students

Research units members

BAE-LBBM, CEFREM, CIRAD (BioWooEB), CRIOBE, DALI-LIRMM, LAMPS, LEPSA, LGDP, IHPE, IMAGES-ESPACE DEV, PROMES

Director: Pr Nicolas Inguimbert

Contact: jpla@univ-perp.fr

ED 544 : Inter-Med

Areas of research

Human sciences, humanities, social sciences.
230 doctorants

Research units members

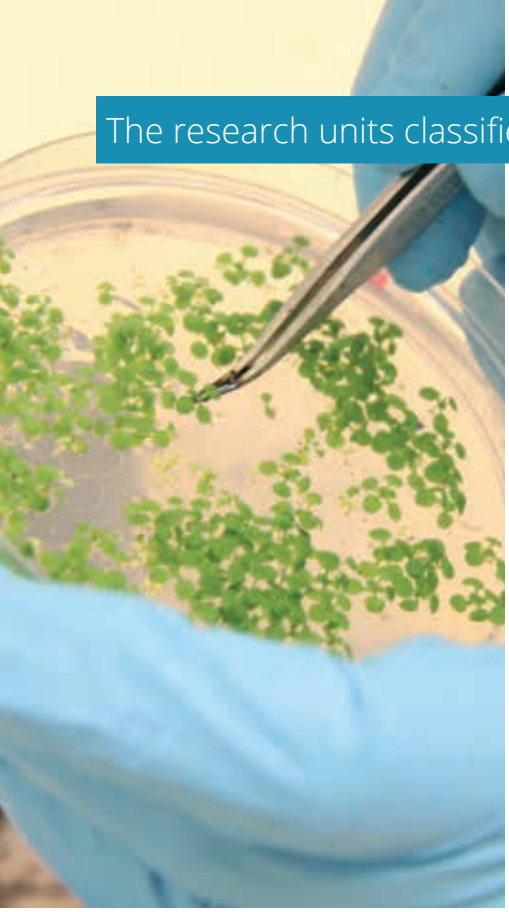
ART-DEV, CDED, CORHIS, CRESEM, HNHP, MRM

Director: Pr Yves Picod

Contact: suzanne.gilardot@univ-perp.fr

1 COMUE LRU doctoral college
2 doctoral schools
16 research units
350 PhD students
50 PhD thesis defended each year

The research units classified per scientific discipline



Spatial planning, urban development
ART-Dev

Automatic control engineering
PROMES

Biochemistry and molecular biology
CEFREM, CRIOBE, BAE-LBBM

Cell biology
LGDP

Biology of organisms
CRIOBE, IHPE , ENTROPIE

Population biology and ecology
CEFREM, CRIOBE, IHPE, ENTROPIE

Chemistry
CRIOBE, BAE-LBBM, PROMES, LAMPS

Private law
CDED

Public law
CDED

Energetics
PROMES

Physical, human, economic and regional geography
HNHP, ART-DEV

Genomics
LGDP, IHPE, CRIOBE

Process engineering
PROMES

History, civilisations, archaeology and art of ancient, mediaeval, modern and contemporary worlds
CRESEM

History of law and institutions
CRESEM

Information technology
DALI-LIRMM, LAMPS

Ancient language and literature
CRESEM

English language and literature
CRESEM

Catalan language and literature
CRESEM

Spanish language and literature
CRESEM

French language and literature
CRESEM

Comparative literature
CRESEM

Materials
PROMES

Mathematics
LAMPS

Mechanics
LAMPS

Dense media and materials
PROMES

Physical oceanography of the environment
CEFREM, IMAGES-ESPACE DEV

Physiology
LEPSA

Photonics and systems
PROMES

Prehistory
HNHP

Political science
CDED

Management sciences
MRM

Economics
CRESEM

Physical activity and sports science and technology
LEPSA

Language sciences
CRESEM

Sociology
CRESEM, CORHIS

Solid earth, geodynamics of upper envelopes
CEFREM, HNHP

Signal processing
PROMES, LAMPS

Vocabulary

ANR
National research agency

CIRAD
Agricultural research for development

CNRS
National centre of scientific research

DR
Director of research (CNRS, IRD)

Dr
Doctor

EA
University research team

ED
Doctoral school

EPHE
High studies pratical school

EQUIPEX
Equipment of excellence

IDEFI
Innovative excellence in training initiative

IFREMER
French research institute for the exploitation of the sea

IRD
Research institute for development

LABEX
Laboratory of excellence

MNHN
National natural history museum of Paris

MBS
Montpellier Business School

Pr
Professor

UAG
Antilles Guyane university

UM
Montpellier university

UMR
Joint research unit of research institute and a university

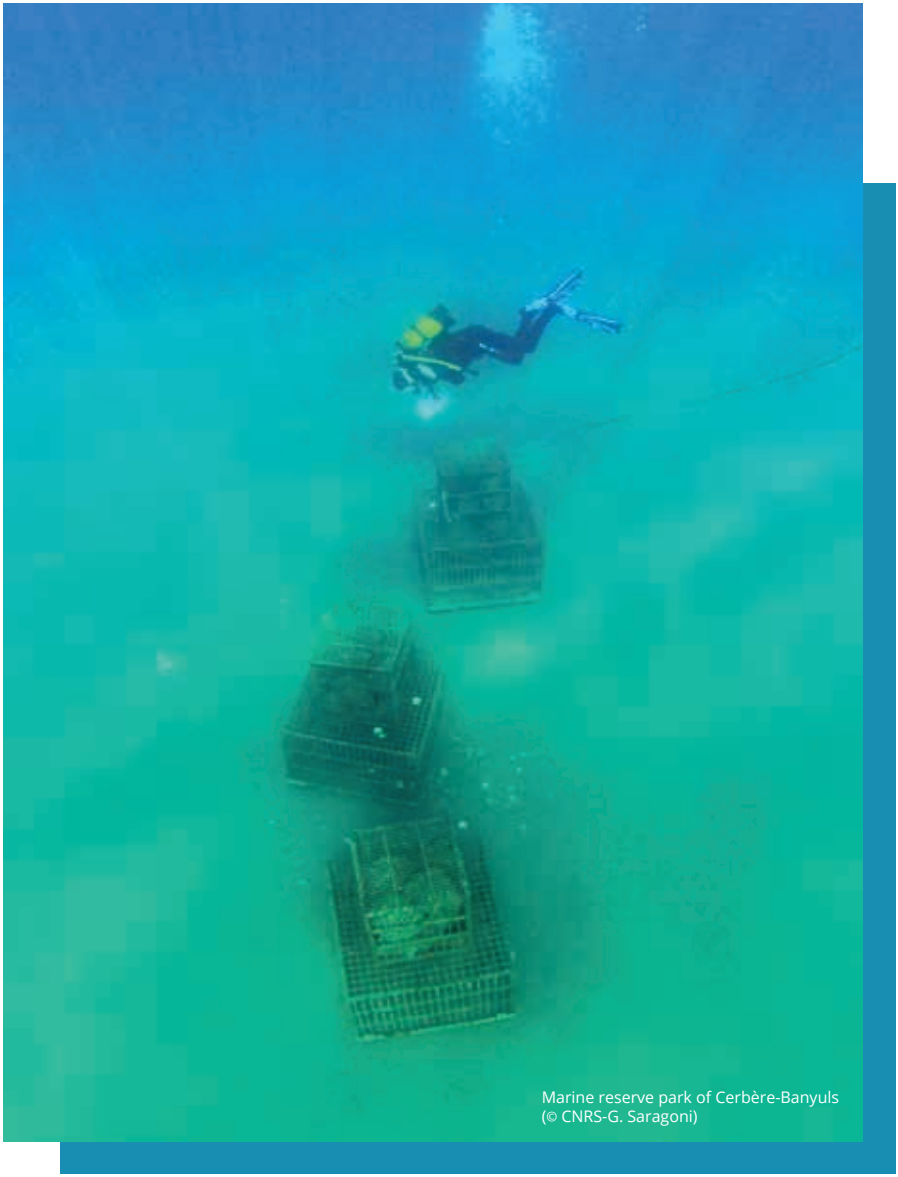
UPR
Proper research unit of CNRS

UPMC
Pierre et Marie Curie (Paris 6) university

UPVM
Paul Valéry Montpellier university

UR
Reunion university

USR
Service and research unit



Marine reserve park of Cerbère-Banyuls
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