e2s UPPA

energy environment solutions

Progress report 2018

INVESTIR L'AVENIR

I-SITE : ANR-16-IDEX-0002

INRA SCIENCE & IMPACT

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

Inria inventeurs du monde numérique

cnrs dépasser les frontières

If 2017 was dedicated to the progressive deployment of the many tools and structures planned with the I-site project “E2S”, 2018 was the first full-year over which the diversity of all the actions programmed by E2S UPPA could have been declined, thus increasingly asserting E2S UPPA as a driving force behind the transformation of the current system in higher education, research and innovation across our territory.

More than a dozens of projects have been launched with a participation rate sometimes beyond what could have been reasonably expected, which shows not only the dynamism of the members of the consortium but also E2S UPPA’s attractiveness, confirmed by the label “initiative of excellence”.

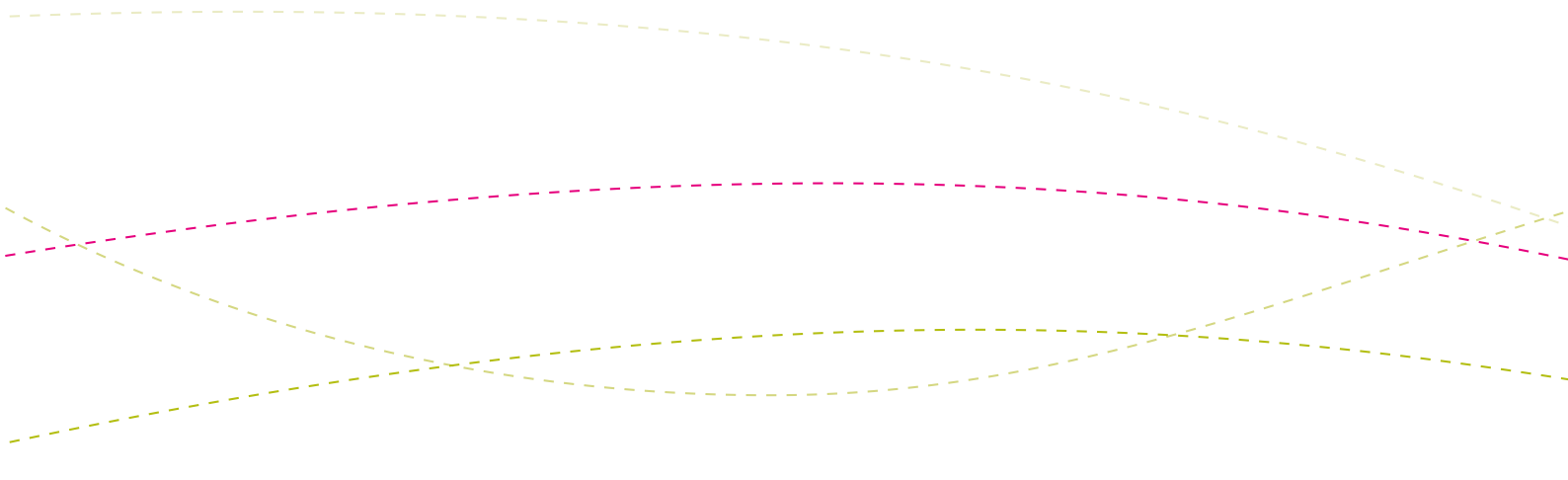
E2S UPPA has now expanded its actions over all the consortium activities in regard to research, education, valorisation and innovation. The levels of intervention are diverse, ranging from granting scholarships to students to the establishment of international research chairs, through the internationalisation of our courses (taught in English). However, all these actions are part of a consistent plan whose purpose is to set E2S UPPA on a new trajectory.

Strengthening our research power and our partnerships, increasing the international visibility of our education programmes (now identified in terms of skills obtained by the students and no longer in terms of specificities), promoting entrepreneurship and improving the reception quality on our sites… All of this is part of this new trajectory which is bordered by a series of contractual indicators.

Our progress goes hand in hand with the university’s re-organisation and the strengthening of the many structures that are facilitating all academic activities. This systemic transformation aims to support our trajectory within a more robust framework, as efficient as possible.

This progress report provides an overview of the work undertaken in 2018. Beyond numbers and projects, the most crucial issue most likely is the establishment of the “brand” E2S UPPA, the assertion of both our values and the role we play in our territory; a role we want to redefine and thoroughly assume. This collective work, illustrated by the projects showcased in this report, is now on our agenda. Only at this price will E2S UPPA become a real success.

Gilles Pijaudier-Cabot
Executive director



HUBS

AIM

Hubs are teams tackling emblematic and outstanding scientific issues embodying the excellence in research within E2S UPPA. They are labelled after an expertise carried out by international peers and on the basis of a recommendation from E2S UPPA external scientific committee.

Each hub gathers about 6 researchers around a research programme defined over a period of 5 years, ideally multi-disciplinary and potentially in partnership with socio-economic actors.

To support each project, 6 PhD positions are opened by the university and about 20 post-doctoral fellows are recruited (one year each). Administrative and financial supports are also provided. Led by the most inventive high-level researchers of E2S UPPA, these hubs act as "commando units" whose sole focus is set on a specific research project, and are intended to both assert and state loud and clear E2S UPPA's leadership in the fields of energy and environment.

INDICATORS

- **Academic Hub since the label « I-Site » was obtained:** 1
- **In 2018:** 1
- **Research, Facilities and Administration costs for a hub:**
  - **Duration:** 5 years
  - **Lecturer-researchers or researchers:** 6
  - **PhD:** 6 (for 3 years)
  - **Post doctoral fellows:** 20 (for 1 year)
  - **Allotted budget:** 500 k€

Ryszard LOBINSKI

Research director at the French National Center for Scientific Research and Head of the IPREM

INTERVIEW

The IPREM Institute has been internationally recognized in the fields of metal speciation and environmental microbiology, but our research has often been fragmentary and dispersed. The hub has offered a unique opportunity to combine our different expertises in analytical chemistry, biogeochemistry, molecular biology, and environmental microbiology and put them to profit in a multiyear coherent interdisciplinary project of significant importance not only from the point of view of fundamental research but also in regard to societal needs. We also needed such a project to rapidly give a new scientific perspective to the « MAss Spectrometry Centre for Reactivity and Speciation Sciences » (MARSS) funded a couple of years ago. In this way, we have opened a new research avenue in the area of systems microbiology: metal-related metabolomics to describe the impact of essential and toxic metals on the organization and disruption of bacterial communities up to the ecosystem level.

PROJECT

MeSMic - Metal Systems Microbiology - An integrated approach to unravel metal ion interactions with microbial ecosystems at the molecular, cellular and community levels.

SENIOR PARTNERSHIP-BASED CHAIRS

AIM

These chairs are directed towards well recognised mid-career scientists, typically with an experience of 5-15 years after their Ph.D. Faculty members of E2S UPPA can apply, but new faculty members can be recruited too. In this case, they are offered a five-year tenure track appointment. Senior chairs should involve public or private partnerships allowing for shared supports with E2S UPPA. Within each chair, scientific projects are addressed by a group composed of three doctoral students, post-doctoral fellows (five years) and two to four permanent researchers. Additional money is also provided for operating costs.

INDICATORS

- **Chairs in partnership since the label « I-Site » was obtained:** 3
- **In 2018:** 3
- **Research, Facilities and Administration costs for a senior chair:**
  - **Duration:** 5 years
  - **Permanent employees:** 1
  - **PhD:** 3 (for 3 years)
  - **Post doctoral fellows:** 2 (for 1 year)
  - **Allotted budget:** 300 k€ (on average)

Susana FERNANDES

University lecturer
College STEE - Anglet
IPREM

INTERVIEW

The research flow of MANTA is on the exploration of marine compounds, materials and biomimetics to face current societal problematics related to human health and the degradation of marine environment. Oceans are an extraordinary and unexploited source of natural compounds with specific physicochemical, structural and biological properties which may lead to novel materials. MANTA's focus on sustainable and bio-inspired materials is threefold. In the first instance, we aim to establish 'green' methodologies for the extraction of active molecules and polymers from marine by-products. The second focus is set on exploiting our understanding of the marine biomimetics and our knowledge in engineering bio-based multifunctional materials for cosmetic applications, regenerative medicine and underwater materials. The study of the impact of these materials and their metabolites on human health and on aquatic ecosystems is the third focus. MANTA also involves development of new in-house, national and international collaborations, and is highly multidisciplinary in nature as it encompasses elements of chemistry, biology, materials science, engineering sciences and biotechnology. Since October 2018, I have begun to establish a creative and motivated research team to tackle all these issues.

PROJECT

MANTA – Marine Materials
Development of bio-inspired and sustainable (bio)materials to lower the marine environmental impact

FUNDERS

E2S UPPA, Communauté d'Agglomération Pays Basque, Région Nouvelle Aquitaine, Comité Interdépartemental des Pêches Maritimes et des Elevages Marin 64 40, L'Europe s'Engage en France, Investir l'Avenir, Laboratoires de Biarritz, Laboratoire d'Etudes en Entropie Sous-Marine

SCIENTIFIC CHALLENGES

AIM

The objective of this call is to support the emergence of new scientific topics or to focus on scientific bottlenecks, related to the core disciplines of E2S UPPA which covers the fields of environment, energy and related societal issues. The call invites a team of 3 to 4 researchers to propose innovative research projects in order to explore new breaking topics or overcome scientific and technological bottlenecks, as well as to promote interdisciplinary collaboration and to disseminate this knowledge.

INDICATORS

- **Scientific challenges since the label « I-Site » was obtained:** 5, 1 with private partnership
- **In 2018:** 2
- **Research, Facilities and Administration costs for a scientific challenge:**
  - **Duration:** 3 years
  - **Lecturer-researchers or researchers:** 3
  - **PhD:** 2 (for 3 years)
  - **Post doctoral fellows:** 3 (for 1 year)
  - **Allotted budget:** 60 k€

Marie-Pierre ISAURE
University lecturer
College STEE
IPREM

INTERVIEW

Mercury (Hg) is one of the most concerning pollutants on Earth, particularly because it transforms into methylmercury, a strong neurotoxic. This transformation is mainly mediated by bacteria but little is known about the cellular and environmental mechanisms involved in this process. The GO-BEAM project focuses on the characterization of Hg methylation at the cell level, from Hg recognition by the cell to Hg export. We apply a new interdisciplinary approach combining genetics, analytical chemistry based on mass spectrometry, and state-of-the art synchrotron imaging as well as X-ray absorption spectroscopy dedicated to the investigation of a collection of Hg methylating/demethylating strains and mutants. Results will contribute to the understanding of risks associated to Hg and will pave the way for a new approach in the field of Hg research.

PROJECT

GO-BEAM - Go inside a Bacterial cEll methylAting Mercury

HEADING FOR ERC

AIM

In order to become an attractive international reference in terms of research, E2S UPPA has implemented a process to help talented and promising early-career or already well-established researchers to prepare their application to the prestigious Starting or Consolidator grants from the European Research Council. E2S UPPA proposes to allow teachers to further mature their research project thanks to a partial release from duties and an individual coaching by consulting companies.

INDICATORS

- **Projects defended since the label « I-Site » was obtained:** 2
- **In 2018 :**
  - **Projects defended:** 2
  - **Project submitted:** 1

Charlotte RÉCAPET

University lecturer
College STEE
MIRA / ECOBIOP

INTERVIEW

The SALSADEB project aims to investigate the impact of environmental changes, through temperature and prey availability, on Atlantic salmon by explicitly modelling energy processing at the organism level. It will thus bring a better mechanistic understanding to predict the future of salmon populations, as well as the economic viability of fisheries. Combining unprecedented experimental approaches and the monitoring of several European populations, from the Basque Country to Finland, this challenging project is complex to develop. Thanks to E2S UPPA support, I had more time to develop a preliminary study on the feasibility of this approach with a Master student. I will also be able to meet with collaborators in Ireland, Norway and Finland to write up the project.

PROJECT

SALSADEB - To breed or not to breed: Bioenergetics of Atlantic salmon reproductive strategies in a changing world

INTERNATIONALISATION OF TRAINING COURSES

AIM

The objectives of this action are to provide linguistic support for teachers who wish to use English as a medium of instruction, as well as a customized pedagogical support to design appropriate learning situations that facilitate the transition to English, both for teachers and students.

INDICATORS

- **Support sessions since the label « I-Site » was obtained:** 2
- **Hours of lectures now taught in English:** 558

FELLOWSHIP FOR INNOVATION IN TEACHING

AIM

The action « Fellowship for innovation in teaching » aims to detect lecturers-researchers who have a project in the educational field, in rupture with standard pedagogic methods, and to support them so that they may achieve it.

Tracking back the past two calls, we can observe that teachers do not only need time, they also need support in digital pedagogics since most of the projects strongly involve the university department in charge of these skills and technologies.

INDICATORS

- **Projects defended since the label « I-Site » was obtained:** 11
- **In 2018:** 6
- **Allotted budget :** 114 k€

Cédric TENTELIER
University lecturer
College STEE
MIRA / ECOBIOP

INTERVIEW

The «Montaury Quest» pedagogical project proposes treasure hunt to freshmen in biology an educational augmented-reality. Played in team at the beginning of the year, on Montaury campus, it serves the integration of young students as it helps them to discover their campus. Fed with multidisciplinary contents, it connects courses seen in high school or through undergraduate courses. The treasure hunt brings a stimulating scenario into the teaching, while augmented reality mixes field-based challenges to on-line course material. The fellowship «Innovation in teaching» granted by E2S UPPA promotes creativity which is always valued in our research activity, but less often in higher education teaching, and boosts this project which aims at spreading to broader thematics and geographical ranges.

INTERNATIONAL MASTERS

AIM

The objectives of the present action are:

- to **increase the UPPA's international attractiveness** by promoting the venue and the graduation of non-French speaking foreign students especially those coming from priority international partners,
- to **foster the development of an international and multicultural environment** for our students, teachers and researchers.

INDICATORS

- **Programmes at Master 2 level fully taught in English since the label « I-Site » was obtained:** 8
- **International students registered:** 53

TALENT'S ACADEMY

AIM

The "Talents' Academy" has been created to identify, attract or retain the most promising students. Its goal is to grant them an allowance so that they can focus better on studying. Targeted courses are all within E2S UPPA area of expertise.
Candidates may come from the UPPA or other universities in France or abroad. As one of E2S UPPA main objectives is international attractiveness and visibility, this call is made of two waves; the first one being dedicated to foreign applications from universities acknowledged by E2S UPPA.

INDICATORS

- **Projects defended since the label « I-Site » was obtained:** 65
- **In 2018:** 6
  - **Laureates:** 46
    - Among which laureates enrolled in L3* : 6 STEE**
    - and laureates enrolled in Master: 40 (9 SH*** - 31 STEE**)
  - **Origin:** Argentina, Algeria, Brazil, Colombia, Spain, France, Gabon, Iran, Portugal and Tunisia
  - **Allotted budget :** 340 k€

INTERVIEW

Pierre-Edouard MARTEAU

5th year of Engineering school - Civil, Coastal and Marine Engineering - Equivalent to a second year of Master degree, with specialization in Computation in Civil and Coastal Engineering
College STEE

Currently enrolled in MASTER II Computation in Civil and Coastal Engineering, I am very satisfied with the additional lectures offered by E2S UPPA. These lectures deal with major environmental issues and are provided by specialists in scientific disciplines such as energy and biology, leading to a couple of smart ideas. Moreover, they reflect the interest and the quality of the approach demonstrated by E2S UPPA in order to address the core tasks for the future, while advocating the training, the information and the excellence of reflection.

* In France, Bachelor degree are completed in three years and followed by a Master degree of two years. L3 thus stands for the last year of a Bachelor degree, called Licence.
** STEE: Stands for Sciences and Technologies for Energy and Environment
*** SSH: Stands for Social Sciences and Humanities

DEVELOPMENT OF LIFELONG LEARNING

AIM

To strengthen the university's partnerships with private companies, to make it easier for students to find work, and to promote applied research, E2S UPPA bets on the dissemination of the work-link training model, especially at the postgraduate level. This type of training, based on a close partnership between academic departments and private companies, promotes our master degrees thus increasing their appeal.

Another important challenge for us is to increase the number of companies using our technology platforms to train their employees.

INDICATORS FOR 2018

- **Degrees based on a work-link training model (continuous and with apprenticeship):** 3 Master degrees, 7 programmes
- **Part of the university's capital resulting from the development of lifelong learning :** 2283 k€

PYREN

AIM

For the last 6 years, within the framework of the IDEFI « PYREN », the UPPA has been developing partnerships with Spanish cross-border universities such as the University of the Basque country, the Public University of Navarre and the University of Zaragoza.

This project, which matches one of UPPA's strategic axes of development, aims to pave the way for the emergence of a European, cross-border and trilingual university. In April 2017, PYREN was integrated into the I-SITE. Since then, PYREN has become one of E2S UPPA's actions: not only is it dedicated to cross-border relations but it also acts as a laboratory within the scope of E2S UPPA's internationalisation strategy, especially in regard to universities of the Spanish-speaking world.

Four strategic axes have been identified in order to build up a cross-border, multidisciplinary and trilingual area of higher education:

- Support language training
- Generate a collaborative dynamic while establishing relationships
- Promote common training (multi-university course)
- Promote existing joint degree

INDICATORS FOR 2018

- **Virtual mobility:** 39 people registered
- **Tandem language exchange:** 192 students
- **A new trilingual Master degree in Management and Innovation of Local Authorities**
- **Language skills and proficiency:** 1194 teaching hours, among which 408 hours dedicated to personal
- **Erasmus+ long lasting mobility:** 35 outgoing, 30 incoming
- **Short mobility:** 161 students
- **Teachers mobility:** 88 lecturers

LIAISON BUREAU

AIM

The socio-economic world has a wide variety of relationships with the UPPA, but this diversity goes hand in hand with the University's equally complex organization, which can be confusing and may lead to a loss of opportunities for partnerships. **To cope with this issue, the University has created a *Liaison Bureau* whith the goals of providing guidance to those actors from the socio-economic world, and to provide university personnel reaching out to businesses with the necessary knowledge related to their own institution and the previous partnership relations.**

INDICATORS

- **Customer Relationship Management (CRM) operational** in September 2019

SUPPORT FOR PROFESSIONAL INTEGRATION AND ENTREPRENEURSHIP MENTORING

AIM

The objective is to disseminate and stimulate the entrepreneurial spirit within the UPPA. More specifically, this action aims to:

- inform students, at all levels of education (from bachelor's to doctoral level), about entrepreneurial activities through existing courses (especially through the implementation of a course intended to raise students' awareness of entrepreneurship), in conjunction with PEPITE ECA*,
- propose new actions to students, researchers and teacher-researchers (vacation for start-up creation, residential entrepreneurial seminars, Jeud'Innov: a fun approach via an Escape Game...)

INDICATORS FOR 2018

- **Course unit intended to raise students' awareness implemented:** 250 participants (all disciplines included)
- **Jeud'Innov - Escape game intended to raise people's awareness of entrepreneurship :** 100 participants

* PEPITE ECA is a student cluster dedicated to innovation, technology transfer and entrepreneurship

TECHNOLOGY TRANSFER

AIM

This call for projects consists in supporting the development of innovative projects, from laboratories and research institutes, with high transfer and/or socio-economic potential. This call is intended to support transfer projects regardless of their position throughout the chain; from pre-maturation (proof of concept, improvement or application of the law) to industrial-scale implementation in order to accelerate the diffusion of technologies, products or services.

INDICATORS

- **Projects supported since the label « I-Site » was obtained:** 3
- **In 2018:** 3
- **Allotted budget:** about 50 k€

Christophe DERAIL
Professor - College STEE
IPREM

INTERVIEW

The MECAPEAU project aims develop an original device dedicated to monitor the mechanical properties of *ex vivo* human skin samples and their potential modifications as a result of different external stresses related to medical treatment, pollution, mechanical solicitation, make-up or cream. This device will enable the study of the adhesion of wound dressings or patches deposited on the skin. Through this innovative instrumentation to measure mechanical properties of *ex vivo* skin samples, MECAPEAU aims to provide data that do not exist as of today. This E2S UPPA funding is an indispensable lever to achieve a first prototype. If the results are convincing, MECAPEAU will be pursued with a maturation project financed by Aquitaine Sciences Transfer and would allow the establishment of a partnership with a company wishing to purchase this technology to deploy it on a high potential market.

PROJECT

MECAPEAU - Evolution of mechanical properties of *ex vivo* human skin and impact of environmental stresses

PHD GRANTS

AIM

E2S UPPA wishes to attract candidates who are noticeable by their scientific excellence, with a clear passion for research and who are excited by the opportunity to provide future solutions for energy and environment. They will be exposed to the intellectual and practical challenges of a research project, which enhances the doctorate holder's creativity, leadership, rigor and ability to cope with the unexpected. All these skills are part of the results of our doctoral training and will be valued in many of the future work environments of our PhDs.

INDICATORS

- **PhD grants funded since the label « I-Site » was obtained:** 25
- **In 2018:**
  - **Candidates:** 268 among which 92.54 % come from abroad
  - **Laureates:** 13 among which 53.85 % come from abroad

Njomza IBRAHIMI

Doctoral school Exact Sciences and their Applications (ED 211)
College STEE
IPRA / SIAME

INTERVIEW

I obtained my bachelor's degree at the Department of Electric Power Systems of the University of Pristina (UP-Kosovo) in 2015. My master studies at UP were combined with an exchange study period at the Norwegian University of Science and Technology. I have experience in working in the power engineering field, whether in the industry or in an academic environment. I am the author of three conference papers, all published in *IEEE Digital Library*, and one journal paper, published in the *Journal of Renewable and Sustainable Energy*. Currently, I am a PhD researcher at SIAME laboratory of the Université de Pau et des Pays de l'Adour. My PhD project aims at developing a new pulsed power system for medical and military fields. My main goal after completion of my doctoral degree is to be engaged in academia and have the opportunity to conduct further research towards developing advanced solutions for the environment and the society.

PHD THESIS

Design, development and test of a new ultra-wide-band bipolar high pulsed power source for civilian and military applications

JUNIOR CHAIRS

AIM

These chairs are directed towards promising early stage researchers, typically with a research experience of 1-3 years after their Ph.D. The call for applicants is opened and widely advertised internationally. Recipients are offered a five-year tenure track position and a starting support package including a doctoral fellowship, five one-year post-doctoral fellowships and support for direct costs. Chair holders are expected to reach a level allowing them to apply for an ERC starting grant with success.

INDICATORS

- **Junior chairs funded since the label « I-Site » was obtained:** 2
- **In 2018:** 3 (2 academic ones and 1 with private partnership)
- **Origin:** University of California, Berkeley - Sciences Po Bordeaux, Pessac / Université Laval, Québec - Université de Pau et des pays de l'Adour
- **Research, Facilities and Administration costs for a junior chair:**
  - **Duration:** 5 years
  - **Contract lecturer-researcher:** 1
  - **PhD:** 1 (for 3 years)
  - **Post doctoral fellows:** 5 (for 1 year)
  - **Budget :** 100 k€

Sébastien CHAILLEUX

University lecturer
College SSH
Passages - Pau

INTERVIEW

The Junior Chair analyses how the utilisations of the subsurface for the energy transition produce - or not - a politicisation, i.e. how it sets a debate or a conflict about the stakes of a project. Studying the characteristics of both the projects (mines, gas or energy waste storage, geothermal production, hydrocarbons) and the territories, our work outlines the trajectories making some utilisations of the subsurface more credible and legitimate in a given governance frame. Comparing various projects in different settings (metropolitan and overseas), our research enables, on one side, a better understanding of the conflicts through a work on actors' narratives and actions, and on the other side, an analysis of the rigidities of the governance frame, in its local implementation but also in the national debates that may occur. The main goal is to better understand the role of each actor and to use potential conflicts as an opportunity to redefine existing links between local residents and their environment, but also between project promoters and the territories and the scenario for the energy transition.

PROJECT

PolSSol - The politicisation of the subsurface

INSTRUMENTAL SERVICE CENTER

AIM

The instrumental service center « UPPA Tech » brings together all the powerful experimental equipments available within the research labs hosted by the university.

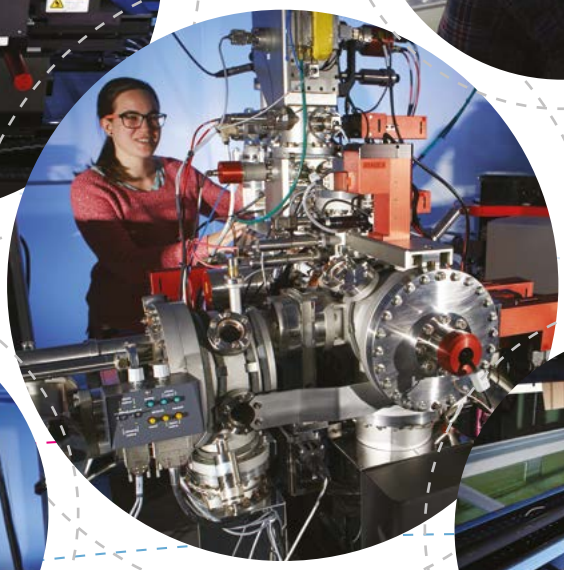
By pooling together both the equipments and expertise distributed in independent thematic platforms, UPPA Tech acts as a support and optimization system serving territorial innovation and development, in phase with both the university's research policy and E2S UPPA's action plan.

UPPA Tech hence offers high-level scientific and technical services to meet the needs of both academic research and local, national and international socio-economic actors.

INDICATORS FOR 2018

- **Progressive implementation of a new set up for financial management**
- **Coordination and support of two projects led by the region *Nouvelle Aquitaine*:** opened and shared service centre
- **Beginning of an in-depth study of UPPA Tech:** reflexion on UPPA Tech's statutes, with the support of both a strategy consulting firm and a law office
- **Implementation of two steering committees:** one dedicated to the equipment and the other to UPPA Tech's in-depth study
- **Deployment of a new communication strategy:** organisation of thematic visits on the different platforms, participation in fairs, congresses or corporate visits and exchanges with competitiveness clusters. Setting up and implementation of new communication tools: website, promotional film and booklet.



SUMMER SCHOOLS

AIM

These thematic schools aim at training students and young researchers to a specific topic within the scope of E2S UPPA. Beyond their scientific, methodological and social purposes, these schools are also intended to allow E2S UPPA to become an attractive international reference in the topics of the Energy and environment transitions. Not only are they claiming the excellence of the consortium's researchers on the topics addressed, but they are also attracting the best international students and building communities of young researchers. Their programme combines scientific lectures with discussions and periods dedicated to the discovery of the university's environment.

INDICATORS

- **Summer schools funded since the label « I-Site » was obtained:** 3
- **In 2018:** 3
  - Petroleomics, Summer School - *Brice Bouyssière*
  - Future of organic photovoltaic, FOREVER - *Christine Lartigau-Dagron*
  - Exposome-Surf64 - *Benoit Liquet*

Christine LARTIGAU-DAGRON

University lecturer
College STEE
IPREM

INTERVIEW

In a context of energy transition, coupled with the E2S UPPA project, it seemed obvious to me to propose this school in the field of photovoltaics. Indeed, I have been working for a dozen years in organic photovoltaics, in which I am strongly involved at UPPA but also outside (responsibility of the French network NANORGASOL, participation in various steering committees). It was an opportunity to bring together renowned researchers who trusted me to organize this event, and to propose a current and cutting-edge programme. The feedback from the participants of this school was very positive and they even suggested that it could become recurring. In addition, the official opening of public buildings integrating this technology nearby Pau was an outstanding event for all and was tweeted around the world by participants and guests.

PROJECT

The Future of Renewable Energies: What place for Organic PhotoVoltaics?

INTERNATIONAL DOCTORAL MOBILITY

AIM

The requirements on the outcomes of doctoral education have changed significantly in recent years. Although the doctoral degree is obtained through the presentation of novel research in the form of a thesis, the main outcome of doctoral education is now the doctoral candidate, who has acquired both a particular mindset and specific skills, mainly thanks to an international experience in research. PhD students constitute a true talent pool and is one of the foundations of E2S UPPA-driven cooperation with highly ranked worldwide universities specialized in the field of energy and environment. These international doctoral mobility grants are offered to support and promote such an approach.

INDICATORS

- **Mobility projects supported since the label « I-Site » was obtained:** 10
- **Destinations:** United States of America, Canada, Denmark, Germany, Australia, Poland, and Norway
- **In 2018:** 10
- **Mobility funded up til now:** 38 months
- **Allotted budget:** 4500 € for each laureate

Mohamed SAIDOUN

PhD
Doctoral school Exact Sciences and their Applications (ED 211)
College STEE
IPRA / LFCR

INTERVIEW

On top of a warm welcoming, an initiation to the experimental and to the modelling techniques was first given to me by a PhD student of Professor Fogler's research group (University of Michigan). The 9 subsequent months were completed autonomously with, in addition to the research work, extra-tasks of managing 3 intern students, logistics and administrative aspects of the laboratory, which are part of the empowering culture of a PhD student in the USA. Out of the scientific content, the immersion in one of the most renowned university campus of the USA was personally and professionally extremely rewarding. In short, this project was not only useful to gain a better understanding of the research subject, but it also served my personal evolution and the growth of an international network recognizing the expertise of the UPPA in research related to complex fluids such as crude oils.

PHD THESIS

Understanding asphaltene destabilization under oil and gas production conditions

INTERNATIONAL GUEST CHAIR

AIM

International chairs are part time visiting professor positions. Their duration is for five years. Applicants should have a track record demonstrating their high-level scientific achievements and strong international visibility. The call for applicants is opened and widely publicised internationally. Applicants are appointed upon recommendation of the external scientific committee of E2S UPPA. Recipients commit themselves to spending on average two months per year at E2S UPPA. Two doctoral fellowships and a five-year postdoctoral fellowship are offered in order to strengthen the relationships between their group and our laboratories.

INDICATORS

- **International chairs supported since the label « I-Site » was obtained:** 3
- **In 2018:** 3
  - Kerrie Mengersen - Queensland University of Technology - AU
  - Bucur Novac - Loughborough University - UK
  - Shih-Yuan Liu - Boston College - USA
- **Research, Facilities and Administration costs for an international guest chair:**
  - **Duration:** 5 years, with at least two months per year at the university
  - **PhD:** 2 (for 3 years)
  - **Post doctoral fellows:** 5 (for 1 year)
  - **Allotted budget:** 125 k€

Kerrie MENGERSEN

Researcher
Queensland university of technology
Australia
IPRA / LMAP

INTERVIEW

My principal field of research is Bayesian statistics. I am interested in Bayesian modelling, computation and application. Regarding modelling, I focus on representations of complex systems, such as those with latent structures (e.g., mixture models) or interacting structures (e.g., networks). Regarding computation, I am currently interested in approximate simulation methods (e.g. ABC) and methods for tackling high dimensional problems. Regarding applications, I focus mainly on substantive problems in ecology and environment, health and society.

In this research programme, I will focus on Bayesian statistical approaches to resolve problems related to ecology and the environment, such as the identification of anomalies in water quality and the conservation of coral reefs. This will require the development of new Bayesian methods and efficient algorithms for highly structured big data and systems data.

PROJECT

Bayesian modelling and analysis of complex data : addressing new problems in ecology and environmental science

AMBASSADORS

AIM

This action aims to:

- encourage and support researchers willing to establish and develop international research and academic collaborations with prominent universities abroad,
- form international collaborative projects or to set up the necessary networks for the development and the institutionalisation of international collaborations.

INDICATORS

- **Project supported since the label « I-Site » was obtained:** 2
- **In 2018:** 2
- **Missions can last for** 3, 9 or 12 months
- **Destination:** Canada

Lucie MARANDEL

Researcher

MIRA / NumeA, Inra (French National Institute for Agricultural Research)

INTERVIEW

My research project focuses on epigenetic regulation induced by nutrients in trout. The Ambassador fellowship, completed with an Agreenskills+ European fellowship, allowed me to spend 4 months at the University of Ottawa to develop a new collaboration with Dr Mennigen, a specialist in miRNA whose skills are complementary to mine and are especially interesting for my research project. During this period, I supervised a master student and set-up a summer school centred on epigenetics mechanisms and related technics. I also had the opportunity to present the E2S UPPA project to different publics including researchers, teachers and administrative, and the pleasure to meet with the research deputy dean to explore possibilities for student exchanges between our 2 universities. Finally, this experience abroad offered me the chance to discover a different working context and develop international collaborations.

PROJECT

Hepatic miRNA regulation by dietary carbohydrate intake in rainbow trout

INTERNATIONAL WELCOME DESK

AIM

The International Welcome Desk (IWD) aims to smoothen international researchers and students' arrival in France and at the university and to accompany them throughout their stay at the UPPA.

The main objectives are:

- advising international students, researchers, and researchers' family members on a wide range of topics such as immigration, university enrollment, housing, health coverage, and income tax,
- participating in the university-wide internationalisation agenda by providing assessments and recommendations on internal procedures to be adapted in an international perspective.

INDICATORS FOR 2018

- **Students accepted in Master degrees within the scope of E2S UPPA:** 60 among which 26 actually registered
- **Researchers accompanied:** 78
  (between March and December, in Pau, and between September and December in Anglet and Bayonne)

INTERNATIONAL PROJECT UNIT

AIM

The objectives of this action are:

- to promote and develop relationships with selected high level universities, ranging from bilateral collaboration to institutionalised partnership,
- to monitor calls for European projects both in the educational and research areas,
- to provide logistical support in the search for partners and funding,
- to help draft proposals in answer to calls for projects.

INDICATORS FOR 2018

- **Signed agreements:**
  - 21 inter-university cooperation agreements
  - 31 Erasmus agreements
- **Submitted projects -** 38 European projects, whose:
  - 6 INTERREG projects
  - 32 H2020 projects
- **Signed conventions:** 5, for a total of 561 k€

COLLEGES: A NEW SET-UP

REPORT

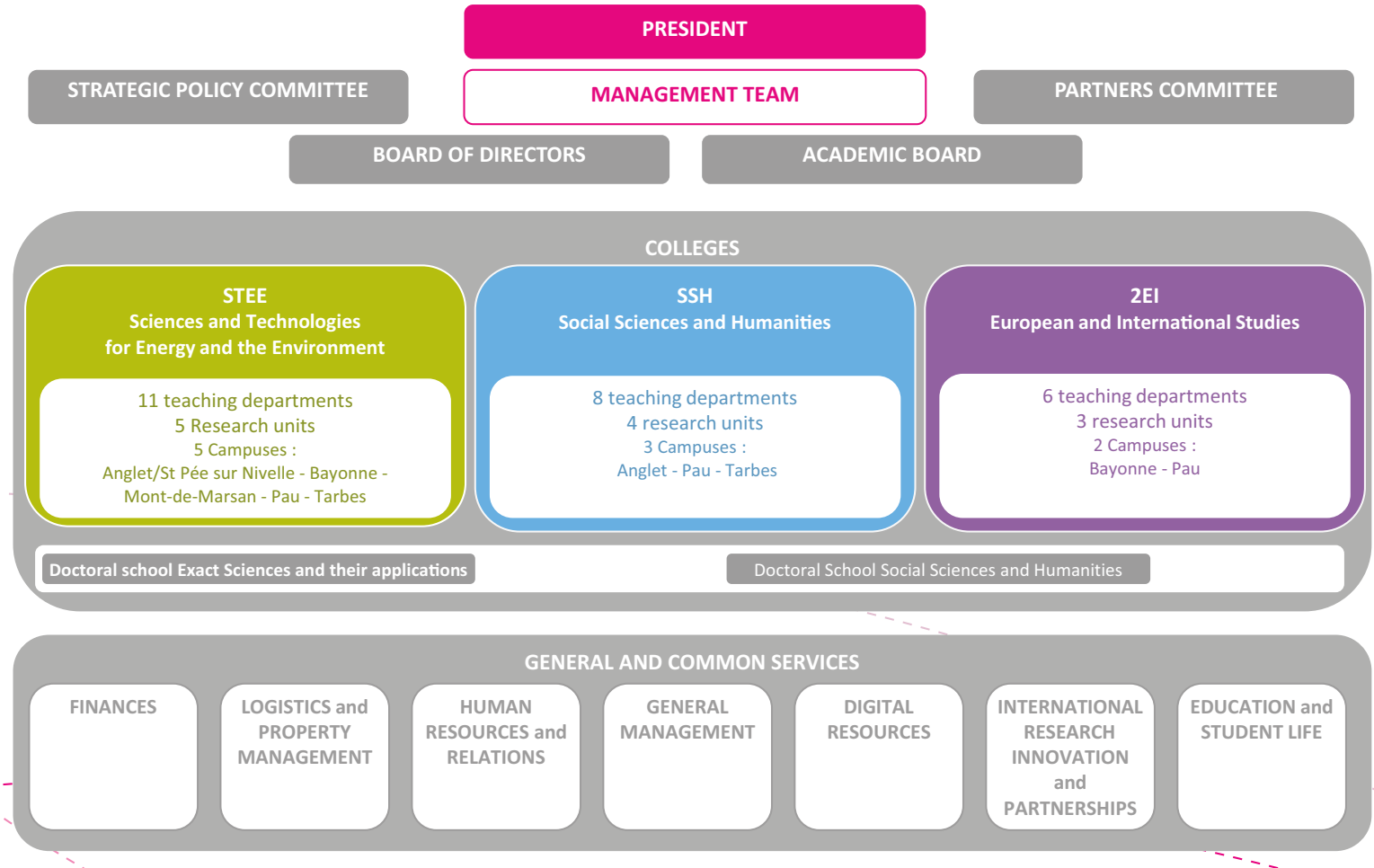
2018 was the stage for the setup of the university's new organisation, which turns out to be innovative in many respects.

The UPPA now includes economic partners in its governing bodies - mainly through the creation of a "partners committee", in close relation with the university's presidence - so as to strengthen its relationship with its socio-economic environment.

On January 1st, following a modification of its statutes, the UPPA has created three colleges by grouping together its former faculties – previously independent; each college is divided in a first «Licence» sub-level and a second «Master/PhD/Research» sub-level. As a result, the university governance is now decentralised and performed through a power delegation from central bodies (board of directors and Academic Board) to colleges services such as the college council (elected) and the Directors committee. For each college, the policy dialogue - in terms of management and strategic orientations - between the university's presidence and each college is defined by a several years' contract specifying objectives and resources.

Last but not least, the university's operating was questioned - especially in regard to the coordination between its central services and the colleges general services - so that each administrative body efficiently serves both its mission as a public service and the ambitions of the project E2S UPPA.

ORGANISATION CHART

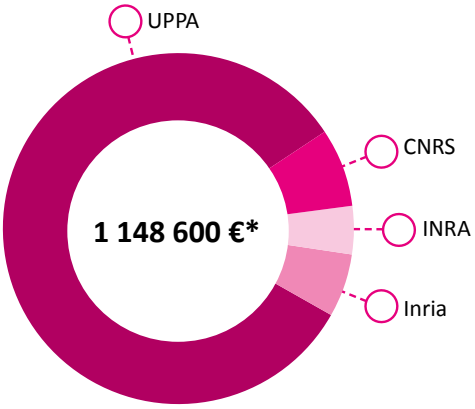


INDICATORS

- **Creation of 3 colleges:**
  - Social Sciences and Humanities (SSH),
  - European and International Studies (2EI),
  - Sciences and Technologies for Energy and Environment (STEE).
- **Setting up the college's central bodies and executive authorities** through a democratic process which mobilised the entire academic community.
- **Setting up the college's administrative organisation** dedicated to its operation as well as education and research.
- **Establishment of a new management policy strenghtened,** through the implementation of several years' contracts specifying objectives and resources.

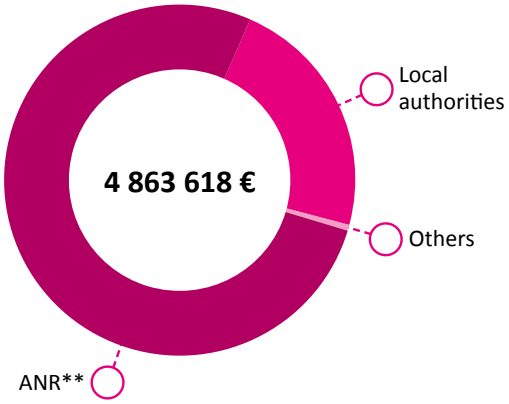
Resources

RESOURCES PROVIDED BY THE CONSORTIUM

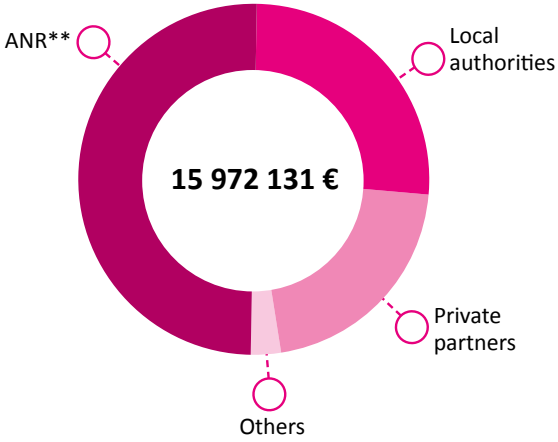


*without Research Administration, Facilities and Administration Costs

CONTRACTS AND SUBSIDIES RECEIPTS



CONTRACTS AND SUBSIDIES ACCOUNTING COMMITMENTS



**French National Research Agency

Expenses

EFFECTIVE EXPENSES

E2S UPPA field of action	Expense
Structuration and governance	1 241 835 €
Research	338 019 €
Education	425 737 €
Technology transfer	81 341 €
Attractiveness	864 059 €
International relations	233 474 €
Student life	5 616 €

ACCOUNTING COMMITMENTS

E2S UPPA field of action	Commitments taken over the duration of projects
Structuration and governance	1 721 823 €
Research	5 515 493 €
Education	1 197 885 €
Technology transfer	1 191 671 €
Attractiveness	8 209 465 €
International relations	2 775 343 €
Student life	120 524 €

PYREN
Transfrontalier et Pluridisciplinarité

- The IDEFI project « Pyren » ended on August 31st, 2018.
- A second phase is now led within the framework of the project E2S UPPA.
- For E2S UPPA, expenses related to actions carried out by Pyren in 2018 amount to 55 877 €.