

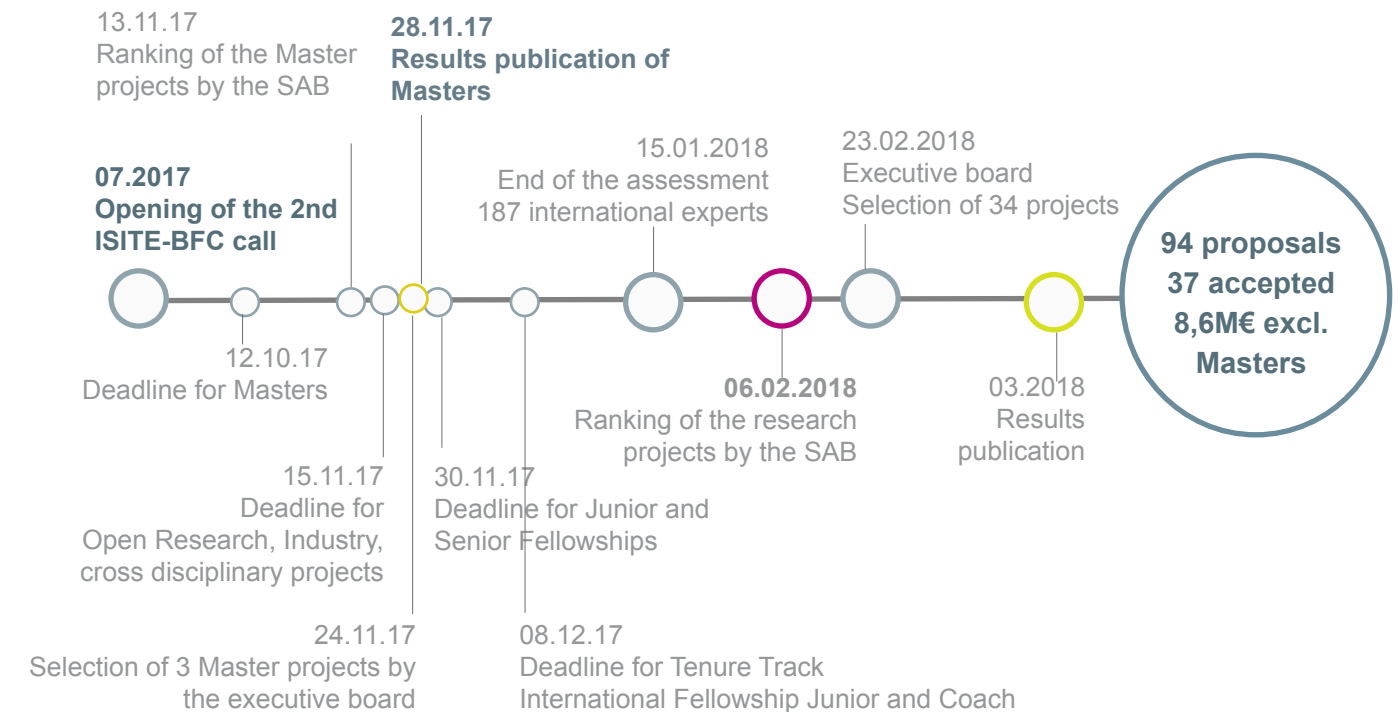
ISITE-BFC

CALL FOR PROJECTS #2
- RESULTS -

ISITE-BFC

RESULTS OF THE #2 CALL FOR PROJECTS 2018

Key dates and process



3 fields of excellence and 9 International experts in the Strategic Advisory board

Axis 1

Advanced materials Waves & Smart systems

Advanced materials, smart systems and energy, quantum and brain inspired photonic computing, programmable matter

Prof. L. Thévenaz, EPFL
Prof. R. Berndt, U. Kiel
Prof. B. Raucent, U. Louvain

Scientific leader: M. Gauthier
CNRS

Axis 2

Territories, Environment, Food

Socio-ecological and food transitions, innovation in agriculture and agrofood industry, soil & territory management strategies

Prof. R. Rees, Scotland R. Col./
Prof. P. Lepoivre, U. Liege
Prof. D. Moran, U. Edinburgh

Scientific leader: B. Schmitt,
INRA

Axis 3

Comprehensive Individual care

Innovative care tools for inflammatory and chronic disease: treatment, integrative patient centred care

Prof. F. Karpe, U. Oxford
Prof. P. Romero, U. Lausanne

Scientific leaders: O. Micheau,
Inserm and D. Masson, uB

Out of axis: Prof. L. Tissot, U. Neuchâtel; Prof. Enrique Fatas, U. East Anglia

ISITE-BFC

RESULTS OF THE #2 CALL FOR PROJECTS

- 4 International Junior Fellowships
- 1 International Coach Fellowship
- 4 UBFC Junior Fellowships
- 3 UBFC Senior Fellowships
- 13 Open Research Projects
- 3 Crossdisciplinary Projects
- 6 ISITE-BFC Industry joint projects
- 3 Masters taught in English

Coordinators and partners of the ISITE-BFC selected projects

Laboratories:

Agroécologie
ArTeHiS
Biogéosciences
CESAER
Chrono-environnement
CIC1431
CSGA
ELLIAD
FEMTO-ST
ICB
ICMUB

IMB

ISTA
Lab. Neurosciences
Lab. Psychologie
Le2i
LEAD
LMB
LNC
MSH
PAM
PEPITE
UTINAM

Industrial partners:

CASIS
Delfingen
Diaclone
Easy global Market*
Gorge Timing*
IxBlue
NextPac*
Oncodesign
Parkeon
Smarttesting

*located out of BFC

International Junior Fellowships (Tenure Eligible Tracks)					
Applicant*	Employer**	Host labs	Expected profile	ISITE support (k€)	Axis
Simon KIMBER	uB	ICB	Chemical physics of materials, surfaces and interfaces, reactivity of solids, advanced materials and processes	450	1
James SCHMIDT	uB	LEAD	Cognitive psychology, learning, modeling	450	3
Susanna MOLAS	UFC	Laboratoire de Neurosciences Intégratives et Cliniques	Neurosciences – Innovative treatment and human performance sciences	450	3
Jeroen VAN BOXTEL	UFC	Laboratoire de Psychologie de Besançon	Cognitive psychology	450	3
International Coach Fellowship					
Pieter VISSCHER	Non applicable	Biogéosciences	Geomicrobiology of sedimentary systems	600	2
*To be confirmed. **Universities which are committed to open a permanent position through a competition within the French service by the end of the ISITE tenure track.					

UBFC Junior Fellowships					
Investigator	Acronym	Project title	ISITE-BFC members / Companies	ISITE support (k€)	Axis
Benjamin POHL	IMVULA	Predictability of Extreme-relevant intraseasonal descriptors of southern African rainfall across scales	uB, CNRS	180	2
Charlotte SINDING	EATERS	Brain mechanisms of odor-induced taste enhancement in normal weight and obese populations	INRA, CHU Dijon, UFC, uB	180	2
Kamal HAMMANI	SoluTION 2.0	Set of nonlinear thermo-optical functions based on Titanium dioxide waveguides for Networks around 2.0 μm	uB, CNRS	180	1
Julien ROGER	SmarTZ	Smart C-H Bond Functionalization at s-Tetrazine for New materials and Medical Applications	uB, CNRS	180	1
UBFC Senior Fellowships					
John DUDLEY	NEXTLIGHT	Next Generation Coherent Light Sources based on Extreme Dissipative Nonlinear Dynamic	UFC, CNRS	400	1
Guy MILLOT	MIRCOMB	Fibred and integrated non linear photonics for mid-IR dual comb spectroscopy	uB, CNRS	400	1
Carmen GARRIDO	HoST-110	Deciphering HSP110 as a target in colorectal cancer: from structure to drug design	INSERM, uB, CHU Dijon, CGFL, INRA, Humanitas Clinical and Research Center (Italie), MIT (Boston), ESRF (Grenoble), Affilogic (Nantes)	400	3

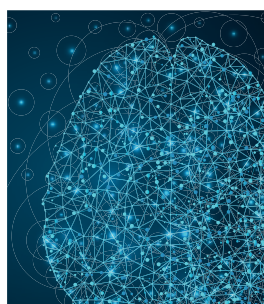
ISITE-BFC Industry joint projects					
Coordinators	Acronym	Project title	ISITE-BFC members/ Companies	ISITE support (k€)	Axis
Bruno LEGEARD	SARCoS	Secure and reliable connected systems using automated domain-specific model-based testing and machine learning	UFC, Parkeon, EGM, Smartesting, Gorgy Timing	392	1
Thierry BARRIERE	COMPOMAG	Innovative micro-structured magneto-caloric composites for sustainable and eco-friendly refrigeration machines and heat pumps	UFC, UTBM, ENSMM, CNRS, DELFINGEN, NEXTPAC	400	1
Laurent LARGER	SYPPER	Compact photonic systems based on whispering-gallery mode resonators	UFC, uB, CNRS, iXblue	140	1
Alain LALANDE	ADVANCES	Automatic detection of viable myocardiac segments considering deep networks	uB, CHU Dijon, UFC, CASIS	309	1,3
Tony MONTESIN	IHTT	Impact of hydrogen on the behavior of titanium alloys welded tubes	uB, UFC, CNRS, NEOTISS	260	1
Cyril BERTHET	BIOCAIR	Biomarkers of T-cell activity in tumours and immunotherapy response	Oncodesign, uB, CHU Besançon, CGFL, EPHE, CNRS, Diaclone	400	3

Crossdisciplinary research projects					
Coordinators	Acronym	Project title	ISITE-BFC members/ Companies	ISITE support (k€)	Axis
Sabine LEFEBVRE	SequaniaID	Sequania: territorial identity and patrimonial dynamics	uB, UFC, ENSAM, CNRS, DRASSM Marseille, MBAA de Besançon	150	2,4
Stéphane ROUX	BIONANOCAR	Bioresorbable nanocarriers for a better exploitation of the radiosensitizing effect of ultrasmall gold nanoparticles	uB, UFC, CGFL, CNRS	150	1,3
Claire SUMONT-ROSSE	ENGAGE	Elderly people living in institution in eating situations	INRA, CHU Dijon, uB, UFC, ARS BFC	150	2,3

Masters taught in english					
Coordinators	Acronym	Project title	ISITE-BFC members/ Companies	ISITE support (k€)	Axis
Nikolaï KITANINE	Math4Phys	Master program in Mathematical Physics	uB, UFC, UTBM	75k€ /y	1
Maxime JACQUOT	PICS	Master's program in Photonics and Applied Physics ; Photonics, micro-nanotechnology, time-frequency metrology, and complex Systems	UFC, ENSMM, uB, UTBM, CNRS	75k€ /y	1
Camille LOUPIAC	MP2	Master MP2 : Microbiology and Physicochemistry for food and wine Processes	AgroSup, uB, INRA, CEA, Nestlé, ETZ, TU Munich	75k€ /y	2

Open Research Projects					
Coordinators	Acronym	Project title	ISITE-BFC members/ Companies	ISITE support (k€)	Axis
Frédéric DEMOLY	HERMES	Spatiotemporal semantics and logical knowledge description of mechanical objects in the era of 4D printing and programmable matter for next-generation of CAD systems	UTBM, uB	150	1
Frédéric DEGLISE	MYAV	Motivic invariants of algebraic varieties	uB, UFC, CNRS	150	4
David MASSON	LIPOMAC	LXR-mediated phospholipid remodeling and macrophage functions: relevance in the context of cardio-metabolic and autoimmune diseases	CHU Dijon, uB, INSERM, UFC, EFS	150	3
Morana CAUSEVIC BULLY	IATEKA	Interdisciplinary approach to the territorial evolution of the Kvarner archipelago (Croatia)	UFC, uB, CNRS, Institute for Anthropology Zagreb, University of Bradford, University of Padova	150	2
Franck CEZILLY	INVACLIM	Interindividual variation in behavioural and physiological responses of invasive invertebrate species to climate change in Burgundy	uB, CNRS	150	2
David WENDEHENNE	NOISE LESS	Structure, function and roles of nitric oxide synthases in algal responses to environmental stresses	uB, AgroSup, INRA	150	2
Frédéric SMEKTALA	SCUVIRA	Supercontinuum fibres lasers covering UV to mid-IR applications	uB, UFC, CNRS	150	1
Jean-Claude WEEBER	CoILS	Nano-platelets based colloidal integrated light sources for low cost opto-chips	uB, CNRS	150	1
Hai Vu PHAM	Food2C	Providing food to city: conditions to have a sustainable local food model. a french-vietnamese comparative study	AgroSup	150	2,4
Eric NEYRAUD	TOM	Taste and oral microbiota	INRA, AgroSup, CGFL	150	2
José LAGES	GNET WORKS	Google matrix analysis of real complex networks	UFC, CNRS	150	1,4
Alexandre BENANI	PlastEAT	Neuro-glial plasticity at meal scale, and eating behavior	INRA, uB, CNRS	150	2
Christel THAUVIN	INGUSP	Identification of New Genes in Unresolved Syndromic Phenotypes with developmental anomalies combining whole genome sequencing and rna sequencing	CHU Dijon, uB	150	3

4 International Junior Fellowships



 **Susanna MOLAS CASACUBERTA, Spain**

Host lab: Laboratoire de Neuro-sciences intégratives et cliniques (Besançon)



Treating neuropathological conditions

Any living organism innately shows a greater behavioral response to a novel stimulus than a previously experienced one. Novelty responses are necessary to evaluate the potential salience of an unknown event and ultimately act as a mechanism for survival. Hence, understanding the neural circuits and neurotransmitter systems that govern novel and familiar responses and, therefore, novelty preference (NP) may provide valuable therapeutic strategies for treating a wide range of neuropathological conditions.

 **James SCHMIDT, Canada**

Theme: Cognitive psychology, learning, modeling

Host lab: Laboratory for Research on Learning and Development (Dijon)

 **Simon KIMBER, UK**

Theme: Chemical physics of materials, surfaces and interfaces, reactivity of solids, advanced materials and processes

Host lab: Laboratoire Interdisciplinaire Carnot de Bourgogne (Dijon)

 **Jeroen VAN BOXTEL, Netherlands**

Theme: Cognitive psychology, learning, modeling

Host lab: Laboratoire de Psychologie (Besançon)

1 International Coach Fellowship

Pieter VISSCHER, Connecticut university, USA

Theme: Geomicrobiology of sedimentary systems



BIOGÉOSCIENCES



The Pieter's application was selected by ISITE-BFC in order to work with the **Biogéosciences lab in Dijon as a joint professor**. Pieter is currently full Professor and researcher among the leaders in the field of **geomicrobiology** and he is -among many other responsibilities- also co-founder of NASA Astrobiology Institute, project leader in major National Science Foundation programs, founder and chief administrator of UConn's Center for Integrative Geosciences and collaborates with the industry (Petrobras, Unisense).

4 UBFC Junior Fellowships



Charlotte SINDING, INRA/CSGA - Collab. CHU Dijon, UFC, uB

Charlotte will investigate the brain mechanisms of Odor-Induced Taste Enhancement (OITE) in obese and normal weight population. This project involves several domains of research, such as perception and therefore sensory evaluation (psychophysics), neurosciences (non-invasive human imagery, fMRI and EEG) as well as cognitive psychology and cognitive neurosciences.

Benjamin POHL, CNRS/Biogéosciences

The IMVULA («rainfall» in Zulu) project aims at characterizing Southern African climate variability, assessing its predictability at different timescales, as well as its impact on carbon fluxes in the soil –a matter of increasing importance under climate change.

Kamal HAMMANI, uB/ICB

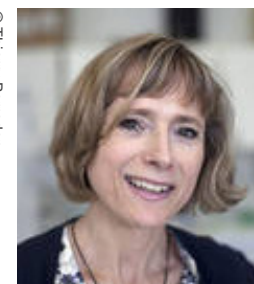
SoluTiOn 2.0 project aims to produce low loss titanium dioxide waveguides in order to demonstrate an integrated broadband wavelength converter from usual telecommunications bands to the new waveband at 2µm.

Julien ROGER, uB/ICMUB

SmarTZ is a chemistry and reactivity project based on the molecular metal catalysis for the development of next generation of tetrazine materials and pharmaceuticals.

3 UBFC Senior Fellowships

© Thierry Borredon



Carmen GARRIDO, INSERM/LNC UMR1231

Collab. INSERM, uB, CHU Dijon, CGFL, INRA, Humanitas Clinical and Research Center (Italie), MIT (Boston), ESRF (Grenoble), Affillogic (Nantes)

Because cancer cells re-wire their metabolism, they need for their survival a high content of stress-inducible chaperones like heat shock proteins (HSPs). This cancer cells' addiction to HSPs is the basis for the use of HSP inhibitors in cancer therapy. Several recent clinical studies have shown that one of them (still quite unknown) called «HSP110» is particularly relevant in **colorectal cancer**. This ISITE project aims at deciphering the role of this HSP in colorectal cancer and to perform studies from structure to drug design in order to propose specific inhibitors that could be used in patients. Toward a more personalized medicine, they propose to demonstrate that HSP110 levels in blood samples correlated with HSP110 expression in tumor biopsies. Therefore, measuring circulating HSP110 levels will help to select the population that may benefit the most from the proposed HSP110-targeted therapy

Guy MILLOT, uB/ICB

Development of an optical spectroscopy method able to perform a noninvasive and realtime detection of volatile organic compounds in the exhaled air of which excessive concentration can indicate serious diseases such as diabetes, Parkinson disease, peptic ulcers, and certain types of cancer.

John DUDLEY, UFC/FEMTO-ST

Development of next generation coherent light sources based on extreme dissipative nonlinear dynamics to address urgent needs in science and engineering for tunable optical radiation over broad wavelength ranges.

6 industry projects



SARCoS
Secure and reliable connected systems using automated domain-specific modelbased testing and machine learning
Coordinator: Bruno LEGEARD, UFC/FEMTO-ST

Internet of Things, connected cars, intelligent parking systems, secured timing, connected cyberphysical systems and air traffic control systems: these all rely more and more on software for flexibility and service delivery. But these complex connected systems face significant challenges regarding security and reliability, and their increasing complexity means that the detection and remediation of business-logic vulnerabilities requires highly-skilled R&D techniques and people.

The SARCoS project aims to develop cutting-edge cognitive and automated techniques and tools for security and robustness testing at a business-logic level that will strongly impact how the industry will reduce the vulnerabilities of such complex and ever more connected systems.

The SARCoS project directly involves four industry partners in four distinct application domains:

- Intelligent parking systems with Parkeon,
- Internet of Things with Easy Global Market,
- Air traffic management systems with Smartesting
- Secure timing with Gorgy Timing.



ADVANCES

Alain LALANDE, uB/CHU Dijon
Collab. UFC, CASIS

Myocardial infarction (MI) is an important cause of death worldwide. One crucial parameter to evaluate the state of the heart after MI is the viability of the myocardial segment, i.e. if the segment can recover functionally upon revascularization. MRI acquired several minutes after injection of a contrast agent (DE-MRI) is a method of choice to evaluate the extent of MI, and by extension, to assess viable tissues after injury.

ADVANCES aims at automatically detecting the different relevant areas using deep learning approaches from a series of short-axis DE-MRI covering the left ventricle and then to make a quantification of the MI. The developed tool will be included in a dedicated and certified software available for the medical community.

SYIPHER

Laurent LARGER, UFC/FEMTO-ST
Collab. iXblue, uB, CNRS

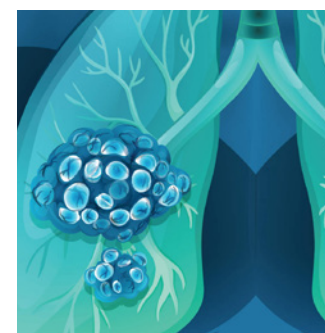
SYIPHER intends to explore the technological and commercial viability of an innovative whispering-gallerymode gyroscope (WGMG) as an alternative of the laser-based gyroscopes currently used in a wide diversity of high-technology systems, such as aeronautics and aerospace engineering, remote vehicle guidance, robotics, and high-precision navigation in general.

This project will be led by the company iXBlue, a global leader in the design and manufacturing of innovative solutions devoted to navigation, positioning and underwater imaging, as well as shipbuilding.



BioCAIR: Biomarkers of t-cell activity in tumours and immuno-therapy response

Cyril BERTHET, ONCODESIGN/Pharmimage
Collab. CHU Besançon, CGFL, ICMUB, LNC, LIIC, Diaclone



In order to propose a targeted and efficient treatment of most advanced non-small cell lung cancer (NSCLC), the BioCAIR project proposes to **identify new biomarkers of clinical response to immunotherapies and develop innovative imaging diagnostic tools**. The consortium is a public-private partnership with skills suitable for molecular imaging studies, from molecular chemistry to preclinical imaging in close vicinity with several hospital clinical departments.

IHTT

Tony MONTESIN, uB/ICB
Collab. NEOTISS, UTINAM

NEOTISS is a world leader in the manufacture of welded thin tubes, including titanium alloys tubes obtained by rolling and welding. As these products are potentially submitted to severe conditions (temperature, pressure, harsh environment), both their initial content in hydrogen as well as the capability to resist to its absorption in service are crucial elements in the qualification process by NEOTISS. ICB and UTINAM will work to improve the manufacturing processes by developing new technological solutions able to limit the hydrogen absorption by the material.

COMPOMAG

Thierry BARRIERE, UFC/FEMTO-ST
Collab. DELFINGEN, NEXTPAC

Nowadays, refrigeration represents 15% of electricity global consumption and over 23% of French domestic electricity consumption. Application areas are various, including buildings, food, biomedical, transportation, etc. The objectives of the project are the design and manufacturing of Innovative micro-structured magnetocaloric composites for sustainable and eco-friendly refrigeration machines and heat pumps.



The city of Osor between the islands of Cres and Lošinj

IATEKA

Interdisciplinary approach to the territorial evolution of the Kvarner archipelago

Morana CAUSEVIC BULLY, UFC/Chrono-Environnement

Collab. ArTeHiS, Biogeosciences, DRASSM Marseille, MDAA Besançon

The islands have the advantage of being geographically well defined spaces, possessing their own particular ecosystems and well definable network of sites and landscape marks. As such, Kvarner archipelago (Croatia, northern Adriatic), has been chosen as the case-study region for the IATEKA project. These islands are already in the focus of ongoing historical and archaeological research concentrated on the territories of two sites : Mirine-Fulfinum (island of Krk), occupied between 1st and 9th c. AD, and the city of Osor (island of Cres), occupied without interruption since the protohistoric oppidum to the present day. This classical approach will be highly enriched and complemented by IATEKA project.

By combining the obtained data from archaeological, anthropological, palynological and more globally paleoenvironmental research, the main goal of this project is to find relevant markers that are likely to provide the elements for the renewed and unprecedented understanding of population dynamics and its consequence on the evolution of these islands natural and anthropic environments.



INVACLIM

Franck CEZILLY, uB/Biogéosciences
Collab. Chrono-Environnement,
CSGA

The possibility that climate change exacerbates the impact of invasive species at the expense of native ones is of major concern for Conservation biologists. The team proposes to develop a multidisciplinary approach to examine the impact of increased temperature and temperature variability on two invertebrate invading species in Burgundy (the spotted wing fly, *Drosophila suzukii* and the freshwater crustacean amphipod, *Gammarus roeseli*), and their «rival» native species *D. melanogaster* and *G. fossarum*.

NOISELESS

David WENDEHENNE, uB/
Agroécologie

The project aims at deciphering the structural, enzymatic and biochemical properties of new Nitric oxides and to investigate their regulation and roles in selected algae. A special focus will be given to their involvement in algae growth, innate immunity and response to abiotic stresses.

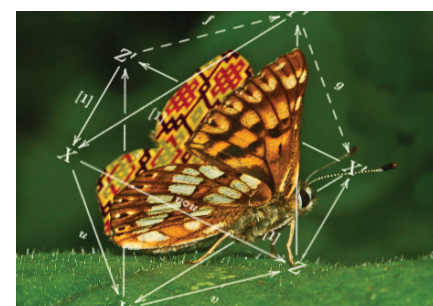


MYAV: Motivic invariants of algebraic varieties

Frédéric DEGLISE, CNRS/IMB in collaboration with LMB



It is a major insight of the preceding two centuries that one can use a geometrical language to study the solutions of a given set of polynomial equations with coefficients in an arbitrary field, such as the complex numbers or even in an arbitrary ring, such as the integers. The corresponding objects, called algebraic varieties, are extremely rich and mysterious due to their dual nature, geometric and arithmetic.



The driving force of the project is the use of the recent and powerful theory of motivic A1-homotopy introduced by Voevodsky to produce new, and study classical, invariants of algebraic varieties of both geometric and arithmetic nature.

The expected applications have a very wide range: advances in the understanding of Voevodsky's theory, producing new knowledge in affine algebraic geometry, extending previously known computations of invariants for families of algebraic varieties, and improvement of our arithmetical knowledge of certain kinds of algebraic varieties.



Food2C

Hai Vu PHAM, AgroSup Dijon/CESAER

Collab. PAM, CSGA, CIRAD, IPSARD, FAVRI

Food2C studies the way that foods are provided to urban consumers today. This multidisciplinary project compares food supply chain organizations in 3 cities in France and Vietnam. Mobilizing the foodshed approach, and considering the use of fermentation as a low-technology method of conservation, Food2C is looking to produce a proof of concept of a low energy local food system, which could be developed in France.

LIPOMAC

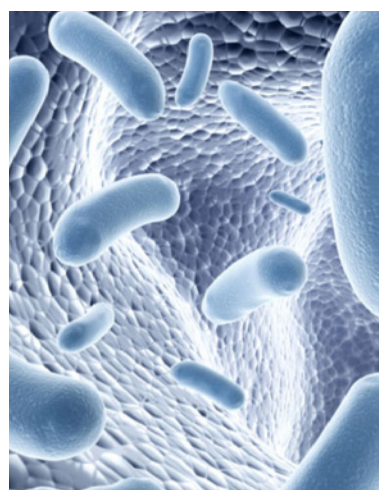
David MASSON, CHU Dijon,
UMR1231 LNC, EFS

Liver X receptors (LXRs) are oxysterol-activated nuclear receptors involved in the regulation of cholesterol homeostasis and in the control of inflammation.

The general goal of this project is to assess how modulation of fatty acid metabolism by LXRs affects macrophage functions in the context of cardio-metabolic diseases and auto-immune diseases with a specific emphasis on the secretion of pro- and anti-inflammatory lipid mediators and efferocytosis (clearance of apoptotic cells by macrophages).

TASTE AND ORAL MICROBIOTA

Eric NEYRAUD, INRA/CSGA in collaboration with CGFL and AgroSup



Eating behaviour is a key determinant of human health and inappropriate behaviours can be at the origin of some of the major pathologies affecting the modern societies (obesity, cardiovascular diseases, diabetes). Among the biological factors known to influence eating behaviour, sensory perception (including the sense of taste) plays an important role. Taste perception varies strongly between individuals but the factors at the origin of this variability are not fully understood. For example, different events occurring at the vicinity of the taste receptors on the tongue could modulate taste perception.

The team has recently suggested that the microbiota at the surface of the tongue could be involved by controlling the taste compounds concentration in the lingual film (the biological material covering the tongue). The aim of this project is to evaluate the contribution of the oral (lingual) microbiota in taste.

INGUSP

Christel THAUVIN, uB/CHU Dijon, UMR 1231 LNC

Identifying the genetic cause of developmental anomalies of previously unknown etiology is the first step towards implementing diagnostic tests, understanding disease biological processes, and guiding tailored patient management.

The main challenges for clinical and molecular delineation of such disorders include access to and careful phenotyping of patients with similar extremely rare disorders, and the mastery of cutting-edge sequencing technologies for data production and interpretation.

This project will play a major role in the Medical Institute of Genomic Medicine and Immunotherapy, GIMI of Bourgogne Franche-Comté, and will contribute to the translational research in the context of the new French "France Genomics Medicine 2025".

PLASTEAT

Alexandre BENANI, CNRS/CSGA

Recent genetic studies formally implicate the brain in obesity pathology and pinpoint genes regulating synaptic plasticity.

Rodent data consistently evidence synaptic plasticity in brain circuits controlling appetite. The team, having strong expertise in neuroscience and physiology, aims at identifying the value of this state-dependent plasticity within brain feeding circuits. High-resolution imaging and modern neuroscience research tools will be leveraged to elucidate how food is integrated in discrete 'soft' circuits at the meal scale. Behavioral effects of meal-related changes in synaptic connection and neuroglial interaction will be fully examined. Such new knowledge about intimate mechanisms of satiety might provide new ways to manage obesity and maladaptive eating behaviors.



BMW prototype Vision Next 100 and their "alive geometry" concept developed by using Rhino/Grasshopper software and 4D printing technology. (c) Photo by CLIFFORD ATIYEH and the manufacturer; <http://www.bmwblog.com/>

HERMES

Mechanical objEcts in the era of 4D pRinting and programmable Matter for nExt-generation of CAD systems

Frédéric DEMOLY, UTBM/ICB - Collab. Le2i

An innovative trend promoted by the unique capabilities of additive manufacturing techniques is about the "4D Printing" concept. It is actually the process by which assemblies and parts embodying smart materials are printed, they are therefore able to react to changes in their environment. As a new way of thinking and manufacturing method, few is known about how to systematically bring such smart products ideas into reality.

The HERMES research project aims at introducing a general framework for designing 4D printed solutions. It delineates the research effort to be made so that designers are sufficiently empowered to design such smart products.

The ultimate goal of HERMES is to extend current CAD systems capabilities to fully embrace 4D printing opportunities and the increase of reasoning capacities embedded in systems and matter.

GNETWORKS

José LAGES, CNRS/UTINAM

GNETWORKS is an interdisciplinary project which will participate to the valorization of the huge amount of data that our society produces into an economic manna. The team will try to make it possible by ranking and organizing these data in order to extract relevant information which could be used by academic research, public institutions, or private companies in various domain such as human and social sciences (digging Wikipedia data), economy (digging world trade data from UN, OECD, WTO), and even health domain (digging omic data).

SCUVIRA

Frédéric SMEKTALA, uB/ICB

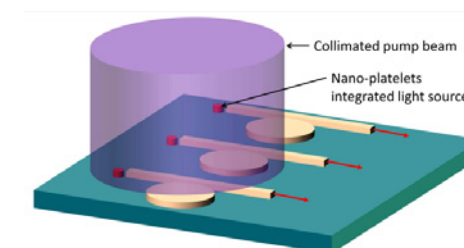
Collab. FEMTO-ST

The key goal of SCUVIRA project is to build, on the current state-of-the-art, the next generation of Supercontinuum fibre-based sources in the mid-IR (1-15µm) and UV (200-400nm) ranges with characteristics tailored to end-user driven applications such as optical detection, spectroscopy, gas and chemical sensing, fluorescence imaging.

CoILS

Jean-Claude WEEBER, uB/ICB

The CoILS project intends to use colloidal emitters for the demonstration of on-chip integrated fluorescent light sources. These colloidal light sources are expected to be a strategic low cost alternative to technologically demanding integrated light emitting diodes (LEDs).



Schematic view of the parallel excitation of the sensing units by using integrated ILS and a collimated pump beam



Sequania: territorial identity and patrimonial dynamics

Sabine LEFEBVRE, uB/ArTeHiS in collaboration with ISTA, Chrono-environnement, LE2i

The project seeks to instigate and strengthen the interdisciplinary continuum within UBFC by bringing together researchers to further our knowledge of the territory of the Sequani in eastern France (partially Bourgogne-Franche-Comté), its boundaries, organization, its population and their habits from the conquest by Julius Caesar to the reforms of Diocletian (1st c. BC – late 3rd c. AD). It involves collecting, indexing, preserving, analysing and restoring data using digital tools (databases, 3D technologies) in order to enhance archives, archaeological sites, numismatic and epigraphic material.

Historians, archaeologists, epigraphists, museum or collection directors are thus at the crux of the questions facing the new region of Bourgogne-Franche-Comté in that they can show how exchanges with neighbouring polities were organized and how economic and cultural networks were formed in Roman times, all of which are contemporary challenges too. The project is therefore very much part of the latest trend of future-oriented research based on a questioning of the past.

BIONANOCAR

Stéphane ROUX, UFC/UTINAM
Collab. ICMUB, EA4267, CGFL

This interdisciplinary project aims to develop some bioresorbable nanocarriers characterized by a long-lasting circulation time in order to plentifully exploit the promising potential of the ultrasmall gold nanoparticles for image-guided radiotherapy used for the control growth of solid tumor.

ENGAGE

Claire SULMONT-ROSSÉ, INRA/CSGA
Collab. CHU Dijon, uB, ARS BFC

In France, 15 to 38% of elderly people living in nursing homes suffer from malnutrition compared with 4 to 10% of elderly people living at home. ENGAGE aims at exploring the potentiality of empowering the elderly in the meals to maintain (or restore) food intake in institution, an essential condition for preventing malnutrition and its burden on autonomy, health and quality of life.



MP2: Microbiology and Physicochemistry for food and wine Processes

Partners: AgroSup, uB, INRA, CEA, Nestlé, ETZ, TU Munich

Camille LOUPIAC, uB/PAM

MP2 is a 2 year, course-based, full-time international research Master's Degree focused on Microbiology and physico-chemistry applied to food and wine processes. This master aims at training future researchers and managers of the food and wine science and industry by providing them with expertise in the field of microbiology and microbiological processes, chemistry and physical chemistry. Students will be encouraged to perform a PhD after this master degree.



In 2017, the University of Burgundy appears for the 1st time in the global ranking of the Universities of Shanghai, as the second university in the field of Food Science in France and in between the 75 to 100 at the international level.

Math4Phys: Mathematical Physics

Partners: uB, UFC, UTBM
Nikolaï KITANINE, uB/IMB

Numerous recent achievements in several fields of theoretical physics (such as high energy physics, astrophysics, quantum and nonlinear optics or condensed matter physics) require numerous very sophisticated mathematical tools. In these frontline research fields, it became clear that a new understanding of physical systems going from cold atom gases to black holes is impossible without a new insight into underlying mathematical structures.

The aim of the Master Program in Mathematical Physics is to provide advanced lectures on the mathematical methods of modern theoretical physics in the framework of a mathematical curriculum.

PICS: Photonics, micronanotechnology, time-frequeCy metrology, and complex Systems

Partners: UFC, ENSMM, uB, UTBM, CNRS
Maxime JACQUOT, UFC/FEMTO-ST

The PICS master's provides a comprehensive program of courses that cover a selection of topics at the interface of physics and engineering sciences. It is open to students with undergraduate physics degrees, and aims to provide complementary courses to prepare students for careers in either industry or for future PhD level study.

The PICS master's is strongly supported by the FEMTO-ST institute and the ICB laboratory, and complete the PPN master's program opened in 2016 and which is focused on quantum optics and nanophotonics.



ISITE-BFC - Appel à Projet n°1

Actualisation des résultats de l'Appel à Projets n°1 ISITE-BFC

27 février 2018



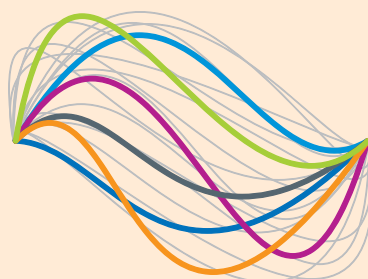
La Région Bourgogne Franche-Comté soutient le projet ISITE-BFC à travers deux projets Junior Fellowships "Mechanical materials for elastic waves control" de Muamer Kadic et "Neural plasticity and mental actions (MENTACT)" de Florent Lebon.

Instrument	Coordinateur*	Titre du projet		Partenaires impliqués / Partenaires socio-économiques	Subvention ISITE ** (k€)	Axe ***
Projets Conjointes ISITE-BFC / Industries	Julien BOURGEOIS (UFC)	Building the basic blocks of programmable matter (B3PM)		UFC, uB, ENSMM, CNRS, PSA Peugeot-Citroën, Tech Power Electronics	373	1
	Xavier ROZARD (UFC)	BAKUP : BAKing of Ultra high Precision		ENSMM, UFC, CNRS, SCODER	400	1
	Nicolas KLINIER-DOLAIN (INRA) Mathieu AUBRY (Agronov)	Agroecology in BFC		AgroSup, uB, CNRS, INRA, Dijon Cereales, Artemis, Agronov, DRAAF, lycées, CA21, CPA BFC, Terrres Inovia, Axialis, Grand Dijon	400	2
Projets UBFC Junior Fellowships	Charles DEVILLERS (uB)	Pi-extension of porphyrins: towards functional materials		uB	179,9	1
	Bertand KIBLER (CNRS)	Breathing LIGHT (BRIGHT)		CNRS, uB	180	1
	Frédérique VEGRAN (INSERM)	NLRP3 role in epigenetic regulation of Th17 cells		uB, CGFL, INSERM	180	3
	Muamer KADIC	Mechanical materials for elastic waves control		UFC, CNRS	178,4	1
e-Education : MOOCs	Florent LEBON	Neural plasticity and mental actions (MENTACT)		uB, UFC	152,7	3
	Marielle ADRIAN (uB)	Open Wine University 2 (OWU2)		uB, BSB, UFC	25	2
Projets de recherches interdisciplinaires	Eric LESNIEWSKA (uB)	High Speed- bio-Scanning Microwave Microscopy (HS-bio-SMM)		INRA, uB	149,8	1,2
	Carmen GARRIDO (INSERM)	HS70-exosomes and their miRNA content : Biomarkers for cancer patients' follow-up and Therapeutic targets		INSERM, uB, CGFL, CHU-Beaumont, CNRS	150	1,3
	Jean-Yves BAUDOUIN (uB)	Deciphering facial emotions against multisensory cues: electrophysiological approaches to understand atypical development		CHU-Dijon, CNRS, INRA, uB	140	2,3
	Edith SALES-WUILLEMIN (uB)	REL@TIONS : Relations – Communication – Santé		CHU-Dijon, UFC, uB	150	3,4
MASTERS dispensés en langue anglaise	Frank CÉZILLY (uB) / Renaud SCHEFLER (UFC)	Biodiversity, Ecology, Evolution		uB, UFC, CNRS	125	2,4
	Stéphane GUERIN (uB)	International master Physics, Photonics and Nanotechnology		uB, UFC, UTBM, CNRS	75	1
	Gaëlle ARYSENET (AgroSup) / Frédérique DATCHE (uB)	Master research in English P2FOOD: Psychological and Physiological Food Choice Determinants		AgroSup, uB, INRA, CNRS	75	2
	Micky RAKOTONDRABE (UFC)	International Master on Control Green Mechatronics		UFC, ENSMM, CNRS, ENIL	75	1
Projets Blancs	Angéla SUTAN (BSB) / François COCHARD (UFC) / Karine BRISSET (UFC)	Behavioral and digital economics for effective management		BSB, UFC	75	4
	Amaud BRAYARD (uB)	Life in the early triassic : the rise of modern ecosystems		CNRS, uB	148,55	4
	Uwe FRANZ (UFC)	Noncommutative and Geometric Methods in Functional Analysis (NC-Geom-FA)		UFC, partenaires internationaux	150	4
	Nicolas CHEMIDIN (AgroSup)	Impact of grassland fertilization on biodiversity and transfers of microorganisms and of chemical contaminants from soil to milk (IFEP)		INRA, UFC, AgroSup, IDELE (Institut de l'élevage), Comité Interprofessionnel de Gestion du Comté (CIGC), Monts et Terrres	149,8	2
Projets Blancs	Frederic HOLWECK (UTBM)	Integrated Quantum Information at the NanoScale (I-QUINS)		uB, CNRS, UFC, UTBM	150	1
	Cédric CLEVY (UFC)	Robotic Nanofactory		UFC, ENSMM, CNRS	150	1

* Les coordinateurs des projets seront contactés par l'équipe de gestion ISITE-BFC pour fixer les modalités de décaissement de leurs projets respectifs.

** Maximum de la base de négociation avec le porteur de projet, sous réserve de validation de : 1) l'éligibilité du budget ; 2) le cofinancement.

*** 1 : Matériaux avancés, ondes et systèmes intelligents; 2 : Territoires, Environnement, Aliments ; 3 : Soins globaux individualisés, 4 : Hors axes ISITE-BFC
Tous les porteurs de projets (sélectionnés ou non) recevront les rapports des experts internationaux concernant leurs projets respectifs.



ISITE-BFC

ISITE-BFC // Contract N°: ANR-15-IDEX-0003

Coordinator: Prof. Alain Dereux

Deputy coordinator: Michel de Labachellerie (VP Research at UBFC)

ISITE-BFC Scientific leaders:

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Axis 2: Bertrand Schmitt

Axis 3: Olivier Micheau and David Masson

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