



## Marie Skłodowska Curie Meet-Up USPC Call for proposals

**Are you a post-doc or experienced researcher and would you like to expand your experience with a stay in a French research group? Are you ready for a new challenge and an international career? Do you want to broaden your network and mature as an independent researcher? Then the Marie Skłodowska-Curie individual fellowships will be of interest to you.**

The **Marie Skłodowska-Curie fellowships** provide funding for individual researchers, allowing them to diversify and broaden their scientific knowledge and skills. They are international fellowships, meaning you must move (or have moved) to a different country. The grant usually covers two years' salary, a mobility allowance, research costs and overheads for the host institution. Individual researchers submit proposals for funding in liaison with their planned host organisation. Proposals are judged on their research quality, the researcher's future career prospects, and the support offered by the host organisation.

For more information on MSCA IF : [http://ec.europa.eu/research/mariecurieactions/about/individual-fellowships\\_en](http://ec.europa.eu/research/mariecurieactions/about/individual-fellowships_en)

***USPC launches a call to attract future Fellowship candidates and help them with their IF2018 applications.  
Beneficiaries of the USPC call will be funded for two days in Paris for meeting, training and support.***

### What is the Marie Curie Meet-up?

**A two-day meeting in Paris, 11 & 12 June 2018:**

- **Day 1: welcome by the USPC European Research Network, training to write "Individual Fellowships" proposals and individual interviews with the European correspondent of the host institution**
- **Day 2: visit the laboratory and exchange with the supervisor**

**The grant will cover all the meeting expenditures (travel, hotel and subsistence expenses for 2 days and 2 nights).**

**Université Sorbonne Paris Cité (USPC)** is a world class comprehensive university in and around Paris. It brings together 14 universities and research and higher education institutions, with more than 10 000 academics working in all fields of human knowledge. It combines first-rate research (more than 100 European Research Council grants over 251 research units) with quality teaching (30 doctoral schools, 115 Masters degrees).

For more information on USPC: <http://www.sorbonne-paris-cite.fr/>

## How to apply?

If you are interested in the thematic areas described below, please :

1. Identify in the list below the priority field, supervisor and lab you are interested in
2. Fill out the Manifestation of Interest form (attached to this document)
3. Send the completed Manifestation of Interest form by email to:

[packeuropeaccess@uspc.fr](mailto:packeuropeaccess@uspc.fr)

The deadline for submission is 15 February 2018

Results in March 2018

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Priority fields open to candidates

USPC includes world-class institutions with a wide scope of priority fields open to candidates. The institutions cover all fields including humanities, social sciences, health and life sciences, exact sciences and engineering. The priority fields are listed by institution below. The supervisor is named when he is known.

- Ecole des Hautes Etudes en Santé Publique
- Fondation Maison des Sciences de l'Homme
- Institut National des Langues et Cultures Orientales
- Institut de Physique du Globe de Paris
- Sciences Po
- Université Paris 13
- Université Paris Descartes
- Université Paris Diderot

## **EHESP - Ecole des Hautes Etudes en Santé Publique**

The EHESP is a public establishment with a dual role of education and research into public health and social welfare. It encourages synergy between the disparate cultures of public health and management.

**Lab ARENES** (<http://www.aren.es.eu/>) :

- *William Sherlaw*: Inclusive approaches towards health and disability: Drawing on social representations / Capacities and Rights of Vulnerable people (Users in Disability Situations in Particular)
- *Eric Breton*: Promotion and prevention in the territories: actions in public health (encouraging the development of knowledge and health promotion programmes and policies through research)
- *Cyrille Harpet*: Territorial disparities and environmental health; risks and capacities of the populations
- *Claude Martin*: child well-being and its determinants (Social Policy analysis)
- *Sylvie Ollitrault*: Violence, radicalization, trauma (in collaboration with the university hospital from Rennes: mental health, Prof Dayan)
- *Jean-Pierre Le Bourhis*: Health, environment, risks / Bureaucracies, networks of actors and instruments of environmental policies and environmental health (water, risks, toxic) / Sociology of public action
- *Romain Pasquier*: multi-level territorial governance: territories and energy transition (sustainable development policies, socio-economic policies)

**Lab REPERES** (<https://www.ea-reperes.com/>) :

- *Nolwenn Le Meur*: Outpatient surgery (length of hospital stay < 12 hours) has shown to present medical and economic benefits. However, the situation in France is very contrasted. While this practice is prevalent for varicose veins surgery, outpatient surgery for lower limbs arterial disease concerns less than 2% of interventions. According to vascular surgeons, the lack of comparative studies, notably on complications after surgery, is slowing down its development. Studies are needed to better assess the health impact of outpatient surgery for lower limbs arterial disease.

## **FMSH - Fondation Maison des Sciences de l'Homme**

As an international crossroads for Humanities and Social Sciences, the *Foundation Maison des Sciences de l'Homme* works in synergy with international scientific communities and networks, and fosters collaboration amongst scientific fields. The Collège d'études mondiales (School of World Studies), created in 2011 by sociologist Michel Wieviorka, is an academic centre for the development of projects by international researchers in a firmly multidisciplinary environment. The School's scientific activity is organised around three key areas: new norms and institutions ; rethinking social justice ; subjectivities: production and knowledge.

**Collège d'Etudes Mondiales (CEM)** (<http://www.fmsch.fr/en/college-etudesmondiales/>)

- *François Gipouloux* : Writing the economic history of Europe and Asia from the 16th to the 20th century: perspectives and cross views on divergences between Europe and Asia through the analysis and systematic comparison of economic institutions and commercial practices.
- *Emmanuel Picavet* : What application of the principles of institutional ethics ? Analysis of the relationship between trust in institutional ethics, implementation of its norms and principles and methods of dialogue in the face of collective risks.
- *Geoffrey Pleyers* : Social movements at the global age. This research will analyse both "progressive" and "reactionary" movements (and their interactions) in Latin America or in a country currently understudied by the international literature (Eastern Europe, Africa, India, Indonesia...)

## *Inalco - Institut national des langues et civilisations orientales*

Since its creation in 1669, [Inalco](#)'s mission has been to teach foreign languages and civilizations by seeking to spread knowledge and skills in order to foster understanding at the cultural, social and professional levels. Over the centuries, Inalco, proud of its rich tradition of teaching languages and civilizations from Central and Eastern Europe, Africa, Asia, the Americas and Oceania, has become a unique and unparalleled institution in the world. It offers research and training in civilizations and circa 100 languages that encompass various disciplines: **sciences of the language, orality and literature, social sciences such as history, geography, sociology, social anthropology, economy, political science, international relations, art, history of religious thought** etc. Below, the research units of Inalco listed by areas and disciplines.

### Research units by area:

- [ASIEs Research Center](#) is a multi-disciplinary research unit specialized in the social sciences and humanities covering Asia from East Asia to the Western Indian Ocean.
- [Southeast Asia Center \(CASE\)](#) leads interdisciplinary researches (history, anthropology, archaeology, geography, ethnomusicology, linguistics) covering all the countries of the Southeast Asia and some of its neighbors (mixed research unit).
- [Center for Japanese Studies \(CEJ\)](#) covers Japan from its origins to our times in literature, art, linguistics, law, political art, history, sociology and anthropology.
- [Europe-Eurasia Research Center \(CREE\)](#) focuses on Central Europe, the Balkans, Russia and Central Asia, covering different but complementary fields: literature, arts, languages, history, company, geopolitics, economy, law, and environment.
- [Middle East and Mediterranean Research Center \(CERMOM\)](#) offers research in linguistics, history, literature, dialectology bringing together the Center of Research on the Arab world, the Center of Hebraic Studies, the Interdisciplinary Research team on the Muslim Mediterranean Societies.
- [Center for Languages and Cultures of North Africa and Diasporas \(LACNAD\)](#) studies the languages and the local cultures of the North Africa (Berber, Maghrebi Arabic and Maghrebi Judeo-Arabic), particularly in the western Mediterranean Sea Region and in Europe.
- [Center for Iranian and Indian Worlds \(MI\)](#) is team of multidisciplinary research centered on the languages, the texts, the history, the cultures and the societies of the Iranian and Indian worlds, from the 6th century BC to our times (mixed research unit).

### Research units by discipline:

- [Center for Language Structure and Dynamics \(SeDYL\)](#) is specialized in language sciences and focuses on the regions of the Americas and French overseas territories, the Baltic and Slavic areas, the Mediterranean, the Balkans, and Asia (mixed research unit).
- [Linguistics Research Center on East Asia \(CRLAO\)](#) offers studies in phonology, morphology, syntax and semantics of the languages of Eastern Asia, such as Sinitic, Tibeto-Burman, Japanese, Korean, Altaic, Austronesian or Austrasia languages (mixed research unit).
- [Center for Languages and Cultures of Sub-Saharan Africa \(LLACAN\)](#) focuses on parsing, typology, comparatism, reconstruction, language and pragmatics covering Sub-Saharan Africa (mixed research unit).
- [Center for Oral languages and cultures \(LACITO\)](#) is specialized in the description, documentation and analysis of under-documented languages of the world carrying out linguistic and anthropological fieldwork on all continents (mixed research unit).
- [Center for Texts, Computing, Multilingualism \(ER-TIM\)](#) carries out researches in linguistics engineering; semantics of texts, the development of methodology for the engineering of texts and multilingual digital documents, production of multilingual resources.
- [Language teaching and learning \(PLIDAM\)](#) has a multidisciplinary research area, from applied linguistics to language/culture teaching, pedagogy and education, social sciences, geopolitics and language policies, information and communication sciences, as well as educational technology.
- [Center for the world's written and oral literature \(CERLOM\)](#) possesses a unique research expertise on arts, oral and written literatures of five continents; thirty geocultural areas of Eastern Europe, the Near and the Middle East, Asia, America and Africa.
- [America, Africa and Asia Center for Social Sciences \(CESSMA\)](#) is multidisciplinary team gathering historians, geographers, sociologists, anthropologists, economists and demographers conducting researches on Central and South America, Africa, the Arab world, South Asia, the Southeast and Eastern Asia (mixed research unit).

## **IPGP - Institut de Physique du Globe**

The **Institut de Physique du Globe de Paris** (<http://www.ipgp.fr>) is one of the very few institutions worldwide involved in intensive research in Earth, environment and planetary sciences. It hosts 16 research groups and a large computer facility, runs several networks of observatories (to monitor seismological, volcanic and magnetic activity, as well as erosion processes and the so-called critical zone, where interactions between mineral matter, life and human activity occurs), is involved in many campaigns at sea and on continents, and takes an active role in space missions. The array of research carried out is very broad and opportunities for young promising scientists are numerous. Current areas of priority, shared by all groups, involve four main themes: Earth and planetary interiors, Natural hazards, Earth system science, Origins. Applications relevant to any of these priority themes are particularly welcome.

## **Sciences Po**

Sciences Po (<http://www.sciencespo.fr/en>) is an international research university, both selective and open onto the world, ranking among the finest institutions in the fields of humanities and social sciences. The faculty study transformations at work in the modern world and challenges they represent. Research contributes to knowledge and debate in five overarching disciplines: law, economics, history, political science and sociology (<http://www.sciencespo.fr/en/research/our-fields-study>).

### **Centre d'histoire de Sciences Po (CHSP)**

- *Guillaume Piquetty*: French cultural resistance in the world during the Second World War
- *Gerd Rainer Horn*: Transnational Movements and Ecclesiastical Change

### **Observatoire Sociologique du changement (OSC)**

- *Ettore Recchi*: The intersection of international mobility and social inequalities
- *Ettore Recchi*: Longitudinal data-based analyses of spatial mobility careers
- *Louis-André Vallet*: French Permanent Demographic Sample - Social mobility, socio-professional and life trajectories of individuals
- *Emmanuelle Ferragina*: Welfare regime theory, family and labor market policy and social capital

### **Centre de sociology des organisations (CSO)**

- *Emmanuel Lazega*: The emergence of a new European intellectual property regime and its propensity to encourage/discourage innovation with a focus on network analyses (1. dynamics of multilevel -social and organizational; networks; 2. comparing social networks)
- *Sophie Dubuisson-Quelier*: Food governance - the institutions, actors, rules, norms, and power relations that shape the practice of governing, how food is produced, distributed, and accessed.

## **Université Paris 13**

Truly multi-disciplinary in nature, Paris University 13 is a major centre of teaching and research in the north of Paris.

### **Lab Physique des Lasers** (<http://www-lpl.univ-paris13.fr/FR/>)

- *Azzedine Boudrioua*: Use metallic nanoparticles (Ag, Au) to improve the optical and electrical performances of OLEDs thanks to localized surface plasmon. These optimized plasmonic-OLEDs will be associated with a microcavity for the study of laser effect under pulsed electrical pumping.
- *Benoît Darque*: Precise spectroscopic measurements with cold molecules in the gas phase. Experimental research at the forefront of cold molecule research and frequency metrology which opens possibilities for using polyatomic molecules to perform tests of fundamental physics and explore the limits of the standard model.

### **Lab Traitement Transport de l'Information** (<http://www-l2ti.univ-paris13.fr/>)

*Anissa Mokraoui*: Radiomics for cancer diagnoses using PillCam capsule endoscopy based on Deep Learning approach.

**Research Center in Epidemiology and Biostatistics Paris Sorbonne (CRESS)**

(<http://www.cress-umr1153.fr/equipes/index.php?equipe=9>)

*Mathilde Touvier* : The gut microbiota as a central piece in the association between nutrition and health : an epidemiological approach studying the gut microbiota composition in relation to nutrition, characterized in a detailed and multifaceted way, and the incidence of several diseases.

**Université Paris Descartes**

With its nine Training and research departments (UFR) and its Institute of Technology (IUT), Paris Descartes University encompasses all the fields of knowledge of human and health sciences. It is the only university of the Ile-de-France region to offer medical, pharmaceutical and odontological studies; its health department is renowned in Europe and in the whole world for the high quality of its training and the excellence of its research.

**Lab Institut Necker Enfants Malades (INEM)**

- *Guillaume CANAUD* : The Canaud's team investigates the biology of overgrowth syndrome. Our research projects combine in vivo and in vitro approaches, experimental models of overgrowth syndrome on genetically modified mice. We are seeking a highly motivated and enthusiastic individual to thrive in a highly supportive environment. The ideal candidate will have molecular and cell biology training. Experience with mouse handling, in vitro culture and unbiased approaches (including microarray, phosphoproteome analysis, secretive...) are required
- *Elizabeth MACINTYRE* : The Macintyre/Asnafi team studies cellular and molecular mechanisms controlling T-cell Receptor VDJ rearrangements during human T-cell ontogeny and their implication in (epi)genetic deregulation in T-lymphoid oncogenesis, in order to develop targeted therapeutics for leukemia and lymphoma in children and adults.

**Lab Chemical and Biological Technologies for Health**

*Nathalie MIGNET* : Our team is interested in the conception and development of new nanovectors as diagnosis agent or as a therapeutic agent. We are also interested in the study of combined approaches using nanotechnologies and physical methods, such as ultrasound or electroporation. The team is multidisciplinary and attracts numbers of PhD from everywhere.

**Laboratory of Informatics Paris Descartes (LIPADE)**

- *Nicole VINCENT et Pavlos MORAITIS* : Multi-Agent based Decision Making applied to the characterization of human emotions from video analysis : Firstly, we want to investigate at a theoretical level the combination of machine learning techniques and multi-agent cooperation for aggregating multiple points of view in order to make collective decisions. Secondly, we want to apply our theoretical approach on the concrete and difficult problem of detection of human emotion from videos through analysis of the movement of hands, legs and face elements with both shape and movement study.
- *Pavlos MORAITIS* : Structured Control Argumentation Frameworks and Applications : This project is related to the further exploration (especially with respect real world applications such as risk management, design of self-adaptive systems, etc.) of a new family of argumentation frameworks we recently proposed, called Control Argumentation Frameworks (CAFs). This is a new approach that generalizes existing techniques, namely normal extension enforcement, by accommodating the possibility of uncertainty in dynamic scenarios.

**Lab cristallographie et RMN Biologiques**

*Bruno SARGUEIL* : Our research aims at understanding host pathogens relationships at the molecular level, focusing on protein translation. Here we propose to investigate the mechanisms by which the Dengue and Zika viruses shut down the host translation while up regulating the expression of their own gene pool. This project will be lead in collaboration with Dr. Locker (UK) and Dr Ruggieri (EMBL Germany) where the experiments on viruses will be lead. The trainee will follow the project from the in vitro to the in vivo aspect.

**Cochin Institute**

- *Rémi CHEYNIER* : Our project aims at developing a mucosal vaccine strategy based on the new property of IL-7 we identified. Indeed, we showed that mucosal administration of IL-7 rapidly triggers local induction of chemokine expressions and immune cell homing into mucosae. This cytokine is already used in clinical trials, without

deleterious side effects. We will exploit this property of IL-7, adsorbed on PLA nanoparticles, to favor the uptake of mucosally administered antigens and stimulate the establishment of local protective immune responses.

- *Julie COCQUET*: Spermiogenesis is the process during which haploid germ cells (named spermatids) differentiate into spermatozoa. During this step, profound morphological and functional changes essential for male fertility occur. In particular, the chromatin is extensively remodeled to properly compact the paternal genome and preserve its integrity until fecundation. The regulation of spermiogenesis requires a specific genetic program with ~3000 genes only expressed at that time. The aims of the present proposal are i) to study gene regulation and chromatin remodeling during spermiogenesis, and ii) to investigate the consequences on the embryo when this process is abnormal.

#### IMAGINE Institute

- *Gaël MENASCHE*: New molecular effectors and therapeutic targets regulating stimulus-secretion coupling of mast cell degranulation responsible for allergic diseases : The Mastarget project proposes to understand the molecular mechanisms of vesicular trafficking regulating stimulus-secretion coupling of MC degranulation and CCL2 chemokine secretion in order to identify new therapeutic targets for MC-driven allergic diseases. A large scale proteomic analysis coupled to high-throughput siRNA screening will be used to identify and study functionally new effectors of MC degranulation and cytokine/chemokine secretion.
- *Mickaël MENAGER* :Single-cell Network Inference as a new Approach to better Characterize Autoinflammatory Syndromes: We propose to perform state of the art single-cell transcriptomic analysis of peripheral mononuclear cells (PBMC) from patients suffering from interferonopathies, resulting from an excessive and uncontrolled type I Interferon (IFN) production. Data will be curated at the single-cell level and combined with machine learning algorithms, to infer regulatory networks of transcriptomic changes responsible for the establishment of autoinflammation. Network inference will help us to generate new and unbiased hypotheses, that will need further in vitro and in vivo validation at the molecular level.

#### Lab Technologies Chimiques et Biologiques pour la Santé

*Salima HACEIN-BEY-ABINA* : Our aim is to study the side effects associated with the clinical use of recombinant Erythropoietin (EPO). We already identify the mechanisms regulating platelet heterogeneity that may have an important impact in prevention and treatment of atherothrombosis. We are currently deciphering the EPO action on tumor growth by studying EPO impact on tumor infiltrating immune cell recruitment and functions.

#### Research Center in Epidemiology and Biostatistics Paris Sorbonne (CRESS)

*Patricia DARGENT MOLINA* : New technical, methodological and statistical developments to assess the combined impact of sleep, movement and other non-movement behaviours on child health: The interactions and clustering among sleep, movement and non-movement behaviours suggest that all components of the 24-h movement continuum should be targeted in order to optimize health benefits and, in particular, to prevent childhood obesity.

#### IMAGINE Institute

*Nadine CERF-BENSUSSAN*

- Our aim is to study the molecular characterization of monogenic disorders affecting the epithelial or the immune components of the gut barrier, which will be identified by high-throughput sequencing in a cohort of children with very early onset diarrhea. Excellent expertise in molecular & cellular biology, in immunology + a strong background in bioinformatics with programming skills and familiarity with next-generation sequence data and analysis tools.
- Given the central role of the microbiota in host health and disease, the laboratory has developed gnotobiotic mouse models to identify members of the community shaping intestinal immune responses and, conversely, to identify mechanisms which preserve the intestinal ecosystem in response to different environmental perturbations. Strong skills in microbiology, mouse models and bioinformatic analysis of omics data to develop a project of functional ecology.

#### Saints Pères.

*Dominique Gauguier*: We aim to generate novel insight into metabolic disease etiology by unraveling epigenetic signatures underlying risk of obesity and type 2 diabetes caused by environmental stressors, including predominantly dietary changes, in preclinical models. Extensive analyses of the gut microbiome and microbial metabolites captured through metabolomic profiling will test the hypothesis of an influence of the gut flora on epigenetic regulations in diabetes and obesity.



## Institut Cochin

*Anne Hosmalin* : Our laboratory develops an in vitro neuronal-like cell model from peripheral blood monocytes and a microglial-cell model allowing us to study primary cell responses from patients or individuals at risk for psychotic transition. We wish to understand the mechanisms of inflammation mediated by microglial cells submitted to infectious stress on neuronal cells, and the particular role of these genetic polymorphisms.

## Université Paris Diderot

Paris Diderot is a comprehensive university, where academic disciplines and knowledge come together right. It offers opportunities of research in different fields.

### Lab Recherche sur les Cultures Anglophones (LARCA) (<http://www.larca.univ-paris-diderot.fr>)

- *François BRUNET* : The international circulation of images in the 19th century: production (lithography, photography, printing and publishing), legal issues (intellectual property and privacy), cultural contexts (exhibitions, world fairs, illustrated books and periodicals, etc.). (Images, circulation, 19th-century, reproduction, photography, lithography, publishing, copyright, exhibitions)
- *Cécile ROUDEAU* : Habitabilities of the Nineteenth Century: we welcome projects in conjunction with other disciplines in the Humanities or Sciences that revisit C19 US literatures as habitable spaces for 21st-century scholars despite, or because of, their epistemic and political foreignness to us. (American Literature, Long Nineteenth Century, Boundaries of Literature, History, Politics, Philosophy, Science, Interdisciplinarity)

### International College of Territorial Sciences (CIST) (<http://www.gis-cist.fr/en/>)

*Claude GRASLAND* : The EU needs a new geopolitical vision. Through the interdisciplinary school of thought of critical geopolitics, the proposed project should bring together critical academic analysis and applied research with journalistic and political elites. It should contribute to elaborate new perspectives on management of the borders of the Union and the relations with its neighbourhood toward East and South. (Critical Geopolitics, European Union, Borders, Neighbourhood)

### Osteo-Articular Bioengineering and Bioimaging (B2OA) (<http://www.b2oa.eu/E0%20Homepage.htm>)

*Hervé PETITE* : Understanding the role of biophysical, biochemical and/or physico-chemical cues on the osteogenic potential of stem cells with the aim of developing optimal matrices that promote osteogenesis for the treatment of large bone defects. (Stem cells, bone, regenerative medicine, Scaffold, biomaterial, osteogenesis)

### Physiopathologie et Epidémiologie des Maladies Respiratoires (<http://u1152.e-monsite.com/>)

- *Bruno CRESTANI* : Identification of an antifibrotic immune response in the lung in IPF.
- *Ignacio GARCIA-VERDUGO* : Our aim will be to develop new adjuvants base on nanoparticle formulations to improve the efficiency of vaccines administrated by the respiratory route. We will evaluate the efficiency of these new formulations in mouse models of bacterial (*Pseudomonas aeruginosa*) and viral (Influenza virus) infections.

### Epigenetics and Cell Fate (<http://parisepigenetics.com/en/>)

*Jonathan WEITZMAN* : Hijacking the Host: genomic and epigenomic aspects of host-pathogen interactions. We are studying genomic and epigenomic aspects of host-pathogen interactions and how intracellular parasites hijack their host cells. We explore the plasticity of cellular phenotypes, the determinants of cell identity and the evolutionary strategies of pathogens. (Epigenetics, host-parasite interactions, cell transformation, pathogens)

### Institut Jacques Monod (IJM) (<http://www.ijm.fr/en/>)

*Jérôme COLLIGNON* : We have set up a system that uses mouse embryonic stem cells to recapitulate early embryonic patterning in vitro. We plan to use it, in combination with genomic, transcriptomic and proteomic approaches, to tease out the cellular and molecular details of how specific signals pattern the mouse embryo. (Mouse embryo development, regulation of gene expression, embryonic stem cells, TGFbeta signalling, enhancers, transcription factors)



**Unit of Functional and Adaptive Biology (BFA)** (<http://www.bfa.univ-paris-diderot.fr/?lang=en>)

*Christophe MAGNAN* : Study of lipotoxicity in rodent preclinical models and its involvement in metabolic dysfunction and the setting of type 2 diabetes: a role for ceramides and dihydroceramides, from diabetes susceptibility biomarkers to a causative link between lipid excess and organs dysfunction (Lipids, glucose homeostasis, hypothalamus, pancreatic beta-cell, liver, adipose tissue)

**Interfaces Traitements Organisation et DYnamique des Systèmes (ITODYS)** (<http://www.itodys.univ-paris7.fr/fr/>)

- *Frederic KANOUI* : Ultrasensitive optical superlocalisation of electrocatalytic events within nanostructures: novel approaches from the deciphering of fundamental mechanisms to the benchmarking of nanomaterial for energy conversion (Electrochemistry, nanoparticule, single entity study, optical microscopy, electrocatalysis)
- *Hyacinthe RANDRIAMAHAZAKA*: Multifunctional Nanomaterials and Interfaces for energy storage (supercapacitor, redox flow and organic battery) and bio-inspired systems (artificial photosynthesis, artificial muscle, drug delivery). (ionic liquid, localized electrochemistry, nanocarbon)

**Laboratoire d'Electrochimie Moléculaire (LEM)** ([http://www.lemp7.cnrs.fr/Index\\_en.htm](http://www.lemp7.cnrs.fr/Index_en.htm))

*Benoit LIMOGES* : Development of innovative nanostructured photocathodes based on multicomponent metal oxides layers and earth abundant, low-cost metal-based molecular catalysts for efficient and selective photoelectrochemical conversion of CO<sub>2</sub> into CO and other high-value added compounds or fuels. (Solar fuels, Photoelectrocatalysis, CO<sub>2</sub> splitting, Photocathode, Renewable energy, Molecular catalysts, Artificial photosynthesis)

**Laboratoire Interuniversitaire des Systèmes Atmosphériques (LISA)** (<http://www.lisa.univ-paris12.fr/en>)

*Paola FORMENTI* : Break-through experimental study of the fundamental aerosol-radiation interactions which rule the effect of atmospheric aerosols on the Earth's climate, and its changes. The study is based on laboratory simulation in the advanced smog chamber of LISA (UMR CNRS, University Paris Diderot), part of the Eurochamp-2020 research infrastructure, as well as field observations. (Aerosols, climate, climate change, radiation, absorption, atmosphere, experiments, observations)

**Lab Materials and Quantum Phenomena (MPQ)** (<https://www.mpq.univ-paris-diderot.fr/>)

- *Sara DUCCI* : On-chip generation and manipulation of quantum states of light: The goal of this project is to develop novel quantum devices based on AlGaAs and to experimentally engineer quantum states of light for various quantum information applications. The project will also include the development of hybrid devices combining the most promising material platforms. (Integrated quantum optics, Quantum information, Semiconductor devices.)
- *Giuseppe LEO* : Nonlinear metaoptics based on arrays of coupled optical antennas with sub-wavelength size and separation. This project will set a new paradigm of photonics: a nanostructured chip for wavefront engineering of harmonic fields and quantum-state engineering of photon pairs generated by spontaneous parametric down-conversion. (Nanophotonics, Nanoantennas, Nonlinear optics, Optical metasurfaces)

**Centre for Nanoscience and Nanotechnology (C2N)** (<https://www.c2n.universite-paris-saclay.fr/en/>)

*Rémy BRAIVE* : The project aims at enlarging the potential use of noise-aided processes with strong impact in noise-assisted applications (signal processing or sensing). It will extend their application in novel playground formed by single and coupled optomechanical photonic crystal suspended membrane. (Optomechanics, nonlinear dynamics, photonic crystal, noise)

**Lab AstroParticles and Cosmology (APC)** ([http://www.apc.univ-paris7.fr/APC\\_CS/en](http://www.apc.univ-paris7.fr/APC_CS/en))

- *Thomas PATZAK* : Long-baseline neutrino oscillations with the DUNE experiment
- *Véronique VAN ELEWYCK* : Neutrino astronomy with the ANTARES and KM3NeT detectors, and exploration of multi-messenger connections to identify and study the sources of high-energy cosmic radiation. (Neutrinos, cosmic, multi-messenger astronomy, ANTARES, KM3NeT)

**Laboratoire d'Etudes Spatiales et d'Instrumentation en Astrophysique (LESIA)** (<http://lesia.obspm.fr/>)

*Philippe ZARKA*: Detecting for the first time non-thermal low-frequency radio emissions from exoplanets, originating from their magnetosphere or their interaction with their parent star, using the radiotelescopes LOFAR and NenuFAR, in preparation for a key programme of SKA (Exoplanets, Radioastronomy, Low-frequencies, LOFAR, SKA)

**Lab Matières et systèmes complexes (MSC)** (<http://www.msc.univ-paris-diderot.fr/>)

- *Pascal HERSEN* : Cybergenetics: exploring, developing and using external feedback loop control to remotely pilot gene expression and cellular behaviour at the single cell level. The hosted researcher will take part in the development of this novel field of research, with a focus on optogenetic control of cellular functions and synthetic circuits. (Systems Biology, Synthetic Biology, Microfluidics, Single cell Microscopy, Optogenetics, Cybergenetics, Biophysics)
- *Alain PONTON* : Optimized elaboration and multi-scale investigation of thermomechanical properties of smart composite materials derived from an organic matrix with surface modified magnetic nanoparticles to be used for wound healing process modulated magnetic field. (Nanoparticles, biopolymers, stimuli responsive, rheology, wound healing)