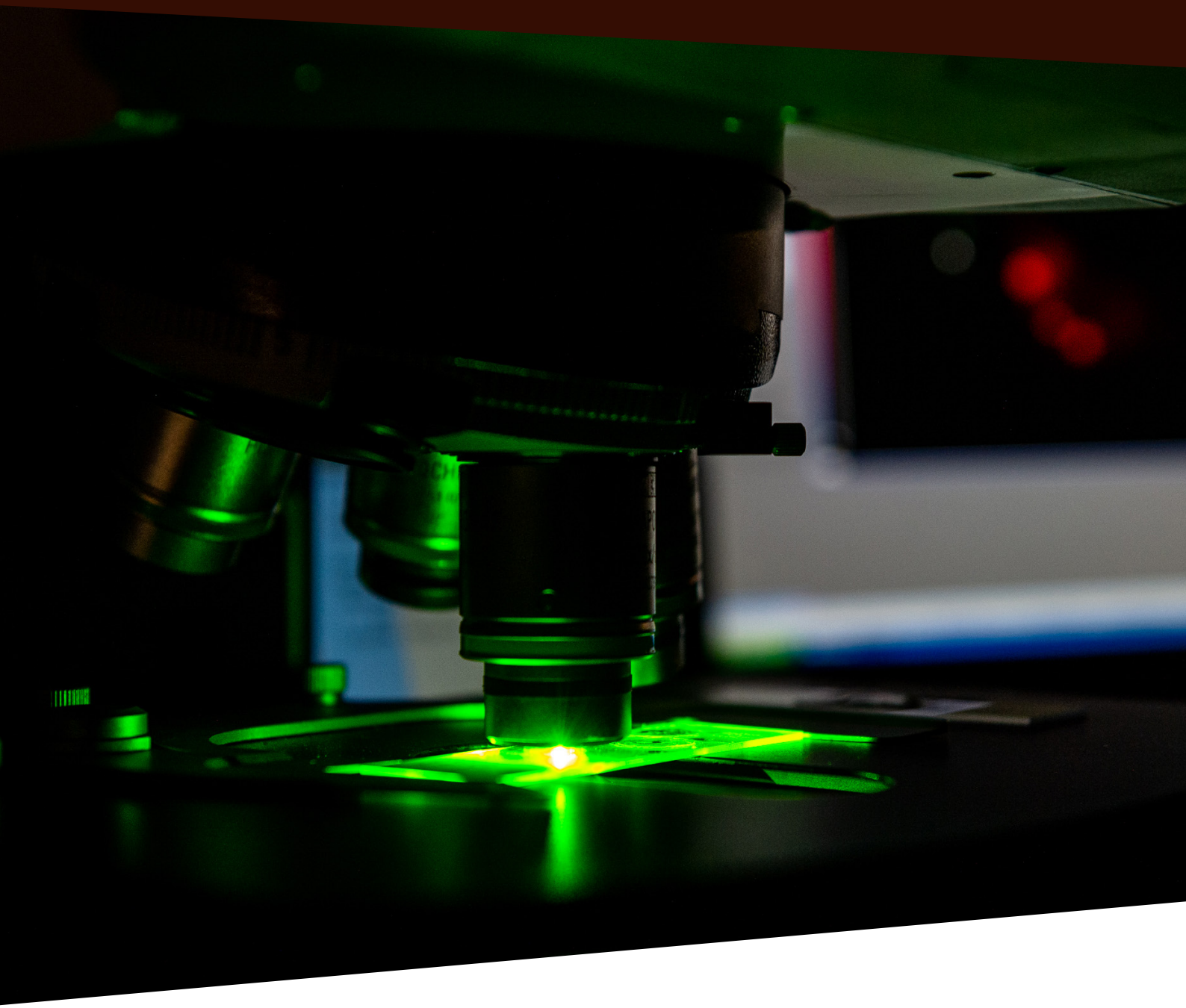
Research Groups

Department of Biological and Medical Sciences



Département de recherche
SBM | Sciences biologiques et médicales

université de BORDEAUX

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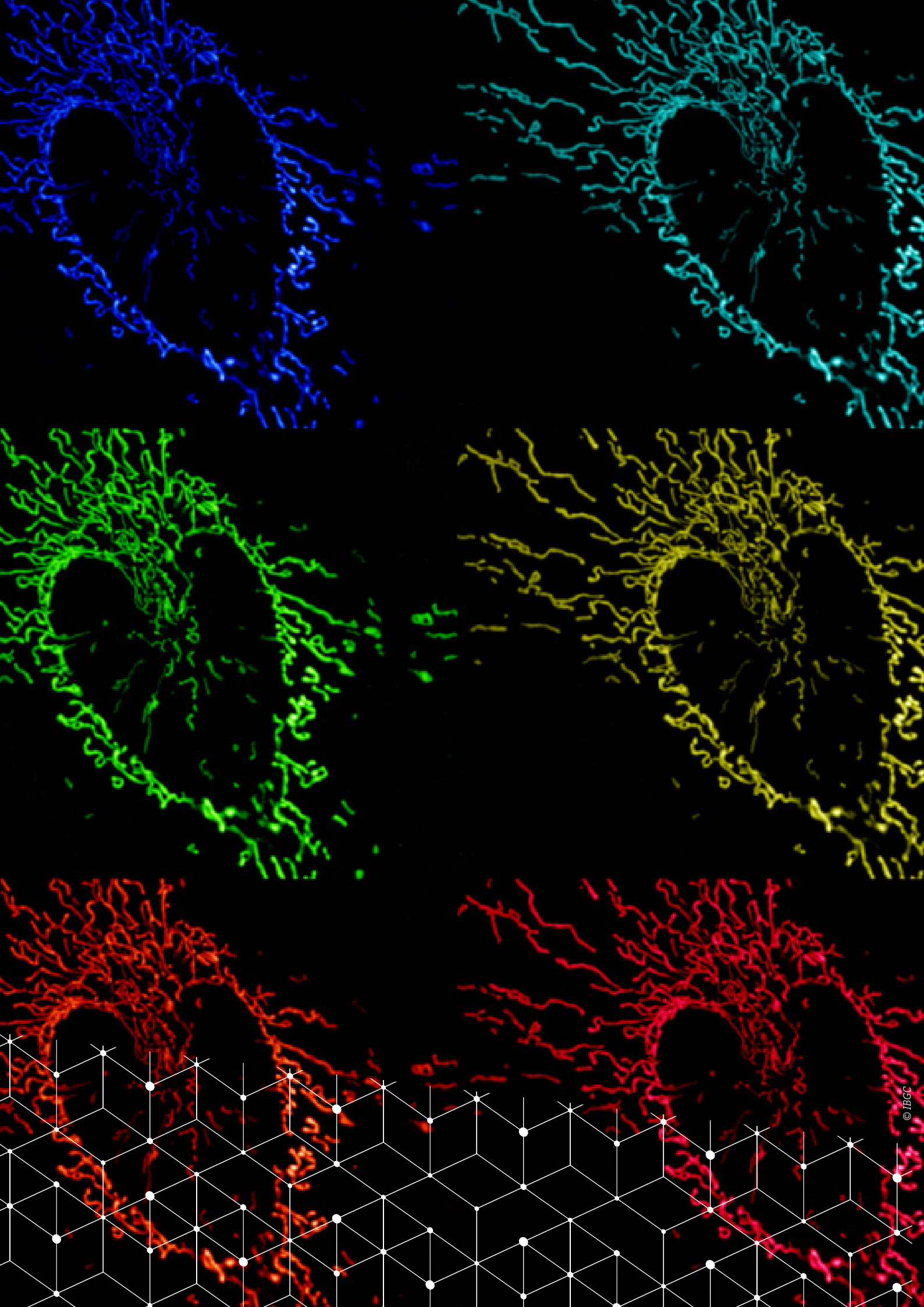
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Institut de Biochimie et Génétique Cellulaires (IBGC UMR CNRS 5095)

› MITHICS Mitochondria & Therapeutics
Déborah Tribouillard-Tanvier

The **MITHICS** team is interested in mitochondrial diseases, understanding their mechanisms and exploring therapeutic avenues, in yeast and patient cells, and mouse models of these diseases.

To learn more: https://www.ibgc.cnrs.fr/la-recherche/mithics-mitochondria-therapeutics/

Keywords: mitochondria, ATP synthase, cardiolipin, NARP syndrome, Barth syndrome, mitochondrial disease modeling, genetic and pharmacological suppressors, screenings, therapeutic repurposing, synthetic biology

› Quiescence & Multicellularity
Isabelle Sagot

The **quiescence and multicellularity** team explores cell fate decisions using *S. cerevisiae* as a model organism. The team focusses on quiescence establishment and exit, with a particular interest for the remodeling of cellular machineries such as actin and microtubules. They also study the relationships between quiescence and multicellularity.

To learn more: https://www.ibgc.cnrs.fr/la-recherche/quiescence-and-multicellularity/

Keywords: quiescence, yeast, microtubule, actin, multicellularity, cell fate, microscopy

› PRIMA - Protein Instability and Molecular Aging
Muriel Priault

The **PRIMA** team focusses on the spontaneous instability of proteins and the functional modifications entailed by deamidation, in particular Bcl-xL oncogene as a model protein and its deamidation state as a new biomarker of ageing. They work at the molecular scale with recombinant proteins, up to whole organisms (yeast, mice). Biochemical and biophysical techniques are used to charachterize how deamidation modifies Bcl-xL structure, interactions and functions.

To learn more: https://www.ibgc.cnrs.fr/la-recherche/protein-instability-and-molecular-aging/

Keywords: deamidation, post-tranlational modification, ageing, cancer, apoptosis, autophagy, membrane proteins, protein reconstitution in membranes, protein folding, protein interaction

› SyntheCell
Damien Coudreuse

The **SyntheCell** team is interested in different domains of research in cell biology, from deciphering cell proliferation and evolution to exploring the control and function of intracellular biophysics, in particular during aging. To this end, they couple a genetically amenable yeast model, *S. pombe*, with state-of-the-art methodologies in genetics, microscopy, experimental evolution and microfluidics.

To learn more: http://www.synthecell.org/

Keywords: cell cycle, cellular evolution, cell volume, biophysics, aging, *S. pombe*, genetics, experimental evolution, microscopy, microfluidics, modeling, automated image analysis

› Non-self recognition in fungi
Sven Saupe

The **Non-self recognition in fungi** team explores the evolutionary origin and mechanisms of non-self-recognition in fungi with emphasis on dissection of regulated cell death pathways. They aim at a comparative immunology to flesh out communalities and differences between immune cell death processes occurring in fungi and other branches of the tree of life (metazoans, plants and bacteria)

To learn more: https://www.ibgc.cnrs.fr/la-recherche/non-self-recognition-in-fungi/

Keywords: filamentous fungi, regulated cell death, NLRs, necroptosis, pyroptosis, gasdermines, amyloid signaling, prions, meiotic drive, genomics

› Chromosome biology
Jean-Paul Jarverzat

The **Chromosome biology** team explores the relationship between environmental cues, chromosome architecture and cell fate decisions with a special focus on signalling pathways to cohesin.

Keywords: Cohesin, genome architecture, cell fate decisions, signalling, fission yeast

› Computational Biology and Bioinformatics
Macha Nikolski

The **Computational Biology and Bioinformatics** team develops and validates computational methods for the integrative data-driven study of complex diseases with a particular focus on cancer. They are interested in both primary data analysis as well as integration of heterogeneous biological data (omics and cellular imaging) and downstream analysis and interpretation.

To learn more: https://www.ibgc.cnrs.fr/la-recherche/computational-biology-and-bioinformatics/

Keywords: bioinformatics, biostatistics, computational biology, omics, data integration, artificial intelligence, biomarkers, phenotype prediction

› Genome Dynamics and Maintenance
Jenny Wu

The **Genome Dynamics and Maintenance team** is interested in understanding how the genetic material is copied and maintained as well as the interplay between genome organization, gene expression, and cellular physiology. These processes are highly controlled and coordinated, and their alteration has been linked to a variety of diseases. To address these fundamental biological questions, the team takes a multidisciplinary approach, combining state-of-the-art genome-wide and single-cell methodologies.

To learn more: www.gdmlab.org

Keywords: DNA replication, cell cycle, genome integrity, genome organization, chromatin regulation, fission yeast, gene regulation

› Control and dynamcis of cell division
Anne Royou

The **Control and dynamcis of cell division** team is interested in the mechanisms that prevent aneuploidy. Using live imaging combined with *Drosophila* genetics they are studying the response to DNA damage during mitosis and the coordination of chromosome segregation with cytokinesis.

To learn more: https://royoulab.info/research.html

Keywords: mitosis, *drosophila*, cytokinesis, chromosome segegation, asymmetric cell division, RhoGTPase, RhoGEF, cytoskeleton, contractile ring, cell cycle, checkpoint, kinetochore, DNA damage, DNA repair

› BioDynaMit
Arnaud Mourier & Thomas Daudon

The **BioDynaMit** team investigates the importance of mitochondrial ultrastructure and dynamics on cell energy metabolism. Their research combined inovative strategies and models to elucidate mechanisms underpinning peripheral neuropathies or glioblastoma and their aim is to open new diagnostic and therapeutical avenues.

To learn more: https://www.ibgc.cnrs.fr/la-recherche/biodynamit/

Keywords: mitochondrial energy metabolism, mitochondrial dynamics, mitofisin, peripheral neuropathy CMT2A, glioblastoma, tumor invasion

› Dynamics of cell growth & cell division
Derek McCusker

The **Dynamics of cell growth & cell division** team focusses on understanding how cell polarity, the asymmetric organization of cellular constituents, is spatially and temporally regulated during the cell cycle. Their research is relevant to basic cell functions including cell division, migration and development.

To learn more: http://www.iecb.u-bordeaux.fr/teams/MCCUSKER/McCuskerlab/Welcome.html

Keywords: cell cycle, cell growth, cell polarity, Rho GTPase, cell signaling, super-resolution microscopy, PALM, protein reconstitution, *Saccharomyces cerevisiae*

› Cell Energy Metabolism
Anne Devin

The **Cell Energy Metabolism** team focusses on control and regulation of cell energy metabolism, Crabtree and Warburg effects, OXPHOS modelling.

Keywords: mitochondria, biogenesis & function, OXPHOS, ATP synthase, mitochondrial OXPHOS modeling, crabtree & Warburg

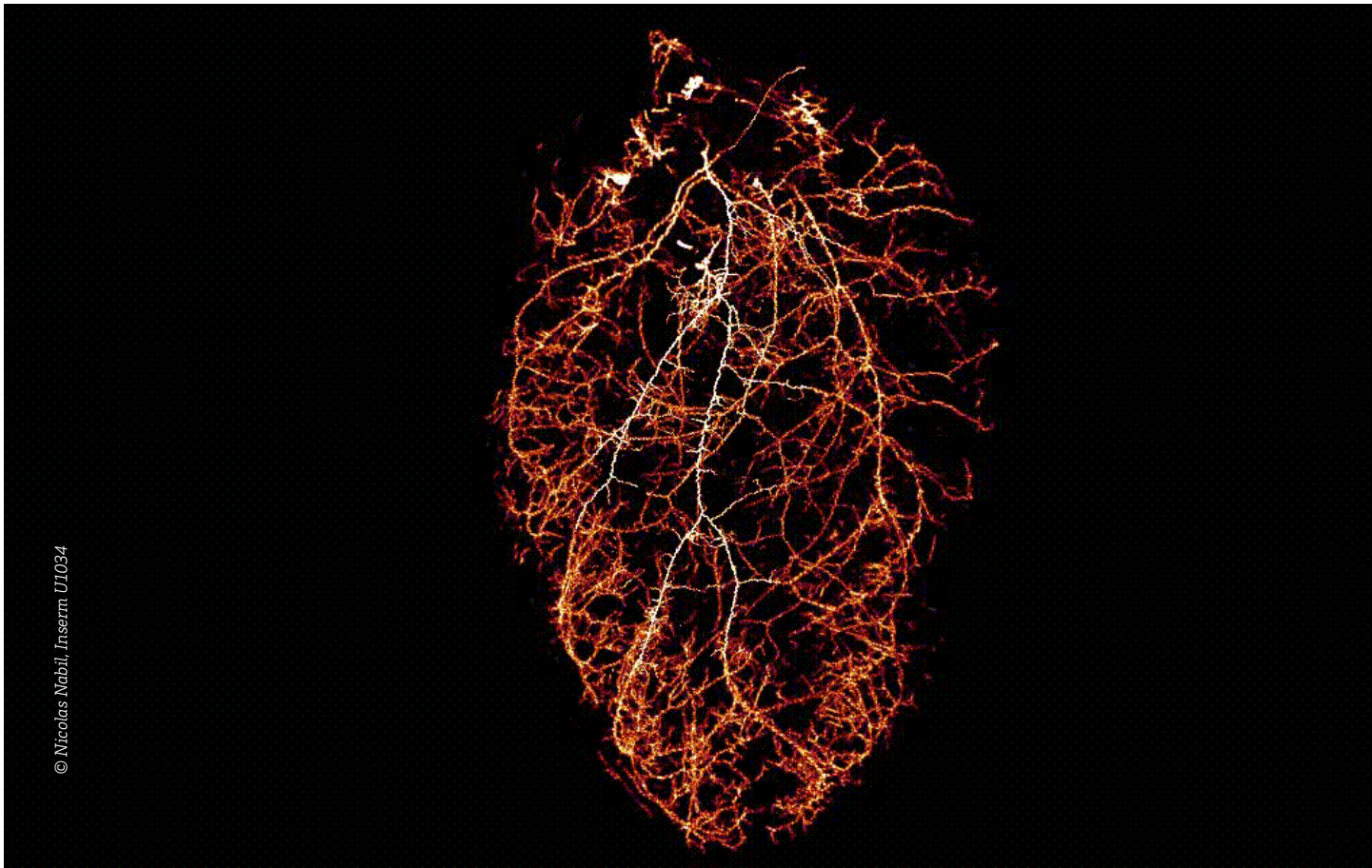
Biologie des Maladies Cardiovasculaires (BMC INSERM U1034)

› **Biology of Cardiovascular Diseases**
Thierry Couffinhal

The **BMC** Unit is a team dedicated to improve small vessel knowledge and to understand how small vessel interacts with its microenvironment. They are interested in understanding endothelial and other vascular cell machinery in the control of vessel maintenance and function in different pathological settings.

To learn more: https://u1034.bordeaux.inserm.fr

Keywords: cardiovascular and neurovascular diseases, vascular biology, endothelial function, thrombosis, heart failure, vascular cognitive impairment & dementia, animal models, vessel imaging, vascular cell culture



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ImmunoConcEpT (CNRS UMR 5164)

› Team 1: Vulnerability and ageing of the immune system
Victor Appay & Julie Déchanet-Merville

The **Vulnerability and ageing of the immune system** team focusses on questions related to the causes of the immune competence deterioration during the course of adult life, and their consequences on human health. Besides chronological age, weakening of the immune system can result from clinical situations associated to an accelerated immune ageing such as infections, transplantation and cancer. This gain of knowledge is important in fundamental immunology but is also directly relevant to the development of adapted immunotherapies and is a public health priority.

To learn more: https://immunoconcept.cnrs.fr/vulnerability-and-ageing-of-the-immune-system/

Keywords: ageing, immunomonitoring, CMV and HIV infections, cancer, organ and HSC transplantion, decline of immune competence, immunosuppression, αβ and γδ T-lymphocytes, B-lymphocytes, multi-parametric flow cytometry, single cell, drug targeting, vaccination, sepsis

› Team 2: Origins and pathogenesis of autoimmune and inflammatory disorders
Patrick Blanco & Marie-Elise Truchetet

The **Origins and pathogenesis of autoimmune and inflammatory disorders** team focusses on questions related to the pathogenesis of autoimmune and inflammatory disorders, with the ultimate goal to propose new therapeutic options to patients. Because inflammatory disorders, the third cause of mortality in developped country, share common pathogenic mechanisms, independly of the phenotypic presentation, the group is composed of complementary expertises to tackle all relevant scientific questions in the field.

To learn more: https://immunoconcept.cnrs.fr/origins-and-pathogenesis-of-autoimmune-and-inflammatory-disorders/

Keywords: B lymphocyte, fibrosis, lupus, multiple sclerosis, DNA sensing, systemic sclerosis, obesity, vitiligo, tisuse resident lymphocyte, multi-parametric flow cytometry, cell culture, drug targeting

› Team 3: Immunology of Cancer and Inflammatory Diseases
Nicolas Larmonier & Maya Saleh

The **Immunology of Cancer and Inflammatory Diseases** team is interested to fine map the landscape of the innate immune compartment, with a focus on myeloid cells, in cancer and inflammatory diseases. We wish to study their phenotypes and functions in cancer initiation, promotion and metastasis, immune suppression and evasion, anti-tumor immunity, as well as irAEs in response to immunotherapies. Another axis of the team is centered on understanding the role of the intestinal and local microbiome in tumorigenesis and inflammatory reactions.

To learn more: https://immunoconcept.cnrs.fr/immunology-of-cancer-and-inflammatory-diseases/

Keywords: immunomonitoring, cancer, immune, related adverse events, chronic inflammation, immunosuppression, myeloid cells, innate immunity cells, single cell, mouse models, drug targeting

› Team 4: Conceptual Biology and Medicine
Thomas Pradeu & Maël Lemoine

The **Conceptual Biology and Medicine** team contributes to the solution of scientific problems in biology and medicine with conceptual tools borrowed from analytic philosophy of science. Although its main focus is cancer, it brings together expertise on immunity, the microbiota, neuroinflammation, nutrition science, systems biology and aging.

To learn more: https://immunoconcept.cnrs.fr/conceptual-biology-medicine/

Keywords: conceptual biology, analytic philosophy, cancer, microbiota, immunity, aging, neuroinflammation, nutrition science, systems biology

Laboratoire de Microbiologie Fondamentale et Pathogénicité (MFP CNRS UMR 5234)

› Group 1: Antiviral drug development, viral replication and regulation (Andevir)
Marie-Line Andréola

The **Andevir** team is interested in viruses replication, antiviral host response, escape mechanism to the host's defenses, and antiviral drug development. Using in vitro and cellular approaches, they develop fondamental, translational and clinical research, in particular in the domain of retroviruses, arboviruses, and emerging viruses, such as HIV-1, SARS-CoV2, Zika, Chikungunya.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/andevir/

Keywords: infection in L3 confinment, viral replication, transduction, cellular regulation of integration, G-quadruplexes, NGS sequencing, molecular interactions (i.e. AlphaLisa), cell imaging, antiviral drug development

› Group 2: Spatial and temporal control of virus-host interactions
Harald Wodrich & Marie-Edith Lafon

The **SpacVir** team focusses on relevant host-pathogen interactions concerning innate recognition of viruses during infection onset (focus on membrane damage and autophagy) and viral nucleic acid metabolism (transcription, chromatin remodeling, replication). They are specialized in advanced imaging applications especially nucleic acids (quantitative & qualitative, assay development) and use HIV-1, SARS-CoV-2, Adenovirus and Herpesvirus as models.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/spatial-and-temporal-control-of-virus-host-interactions/

Keywords: adenovirus, virus entry, membrane damage, autophagy, virus trafficking, viral chromatin, chromatin remodelling, transcription, replication, quantitative and high-resolution imaging, life-cell imaging, single molecule imaging, DNA & RNA imaging

› Group 3: Membrane Protein Mechanisms
Nicolas Reyes

The **Membrane Protein Mechanisms** team aims to unravel molecular mechanisms underlying the function and pharmacology of medically relevant membrane solute carriers. To achieve this, they combined high-resolution cryo-electron microscopy with functional approaches, and integrate information on the structure, dynamics, and thermodynamics of the solute carriers.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/membrane-protein-mechanisms/

Keywords: Solute carriers, membrane transport, structural biology, viral entry, endogenous retrovirus

› Group 4: Structure & function of bacterial nano machines
Rémi Fronzes

The **Structure & function of bacterial nano machines** team focusses on understanding the molecular mechanism of bacterial adaptability.
Bacteria are extremely adaptable and adjust their lifestyle very quickly when changes occur. One dramatic illustration of this capacity is the spread of antibiotic resistance among bacterial pathogens. In this context, it is crucial to understand the molecular mechanisms of bacterial adaptability to ultimately target and limit this ability.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/structure-and-function-of-bacterial-nano-machines/

Keywords: bacterial pathogens, structural biology, CryoEM

› Group 5: Candida and Pathogenicity
Thierry Noël

The **Candida and Pathogenicity** team conducts research on the molecular determinism of resistance to antifungals in Candida pathogenic yeasts of medical interest. They develop innovative systems such as Organ-on-Chips for the study of host-pathogen interactions and also new biotherapies for the treatment of superficial and mucosal infectious pathologies of fungal etiology.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/candida-et-pathogenicite/

Keywords: candida, resistance to azole and echinocandin, fungal cell integrity rescue pathways, synthetic biology, organ-on-chip, host-pathogen interaction, immunotherapy of fungal infectious diseases

› Group 6: Protist Parasite Cytoskeleton (ProParaCyto)
Derrick Robinson & Mélanie Bonhivers

The **ProParaCyto** team focusses on the biogenesis of the cytoskeleton of protist parasites that cause Trypanosomiasis and Leishmaniasis and Toxoplasmosis. They identify, characterise and test, at the molecular level, protein components of the cytoskeleton to understand how they work together to control cell growth, division and infectivity.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/proparacyto/

Keywords: genetic manipulation of parasites, cytoskeleton biogenesis, yeast two-hybrid interaction assays, electron and optical microscopy, ultra-expansion microscopy for high-resolution protein and structure localization, nanobody production and knockdown assays, monoclonal antibodies in mice

› Group 7: Intermediate and energy metabolism of trypanosomes (IMET)
Frédéric Bringaud

The **IMET** team is mainly interested in the study of the central carbon metabolism of parasites, in particular African trypanosomes responsible for the human sleeping sickness in Africa and animal diseases worldwide.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/intermediate-and-energy-metabolism-of-trypanosomes-imet/

Keywords: central carbon and energy metabolism, metabolic adaptation to available carbon sources, peroxisomal and mitochondrial metabolism, phospholipases and pathogenesis, NMR and mass spectroscopy approaches to study catabolism/anabolism

› Group 8: Mobility of pathogenic genomes and chromatin dynamics (MobilVir)
Vincent Parissi

The **MobilVIR** team is mainly interested in the study of the molecular mechanism oif genome mobility in human pathogens. Their goal is to identify molecular exchanges between pathogenic mobile elements (viral and pseudoviral) and the host.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/groupe-v-parissi/

Keywords: retrovirus, HIV-1, SARS-CoV2, integration, chromatin, nucleosome, DNA repair, cellular and structural biology, viral infection and transduction, cell imaging, drug design

› Group 9: Antimicrobial Resistance in MYcoplasmal and gram-NEgative bacteria (ARMYNE)

Cécile Bébéar

The **ARMYNE** team is working on fundamental and applied aspects of AMR in Gram-negative bacteria and urogenital mycoplasmas involved in sexually transmitted infections (STIs). They collaborate with the Bacteriology department and with the National Reference Center for bacterial STIs at the Bordeaux University Hospital.

To learn more: https://www.mfp.cnrs.fr/wp/la-recherche/armyne/

Keywords: antimicrobial resistance (AMR), urogenital mycoplasmas, Gram-negative bacteria, enterobacteria, *Pseudomonas aeruginosa*, AMR mediated by chromosomal mutations, mobile genetic elements

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Rare Diseases, Genetics and Metabolism (MRGM INSERM U1211)

› **Rare Diseases, Genetics and Metabolism**
Didier Lacombe

MRGM Unit is a single team. They investigate rare developmental genetic diseases to discover gene alteration, consecutive cellular dysfunctions and mitochondrial diseases. This knowledge is used to develop innovative research models including zebrafish, patients-derived cells and hiPSCs or mouse. The models are used to understanding diseases mechanism and therapeutics. Recent achievements were focused on Rasopathies, Albinism, Rubinstein-Taybi syndrome or Goldehnar syndrome.

To learn more: https://mrgm.fr/

Keywords: rare diseases cohorts, Mutation, epigenetics, energy metabolism, bioenergetics, neurotoxicity, albinism, rasopathies, mitochondrial diseases, Rubinstein-Taybi syndrome, Goldenhar syndrome

BoRdeaux Institute of Oncology (BRIC INSERM U1312)

› Team 1: Tumor and vascular biology laboratory
Andreas Bikfalvi, Lucie Brisson & Thomas Mathivet

The **Tumor and vascular biology** team is primarily focused on malignant brain tumours especially in relationship with the tumour microenvironment with the aim to understand how brain tumours acquire the capacity to invade the brain tissue and to evade anticancer therapies. They also have vascular biology projects as well as tissue engineering (eg artificial vessels and brain tumours organoids).

To learn more: https://www.bricbordeaux.com/en/bric-team/equipe-1-laboratoire-de-biologie-tumorale-et-vasculaire/

Keywords: cancer biology, vascular biology, brain tumor models, invasion, secretome, cell communication, phosphatase, metabolism, autophagy

› Team 2: Reprogramming tumor activitY and associaTed-MicroenvironmEnt (Rytme)
Majid Khatib & Frédéric Delom

The **Rytme** team is interesting in the role of the secretory pathway during tumour initiation and progression, and tumour cells interaction with their microenvironment. Their research is mainly dedicated to the understanding of the role of protein secretion and maturation by the Endoplasmic Reticulum proteostasis and by the proprotein convertases (PCs), in tumor progression, angiogenesis, drug resistance and anti-tumoral immune responses. How the regulation of the activity of these processes will lead to the development of new therapies and diagnostic tools is also investigated.

To learn more: https://www.bricbordeaux.com/bric-team/reprogrammation-de-lactivite-tumorale-et-du-microenvironnement-associe-rytme/

Keywords: breast, colon, lung, ovarian & pancreatic cancer, metastasis, invasion, drug resistance, onco-immunology, zebrafish, KO mice models, drug repurposing, small molecules development

› Team 3: Liver cancers and tumor Invasion
Violaine Moreau & Frédéric Saltel

The **Liver cancers and tumor Invasion** team aims of performing both fundamental and translational research on liver cancers. They have a long-standing expertise on actin-based mechanism involved in cancer cell migration and invasion, and on regulation of proteostasis. They develop projects aiming at understanding liver diseases such as Alpha 1-Antitrypsin Deficiency-mediated liver disease, benign tumors and cancers.

To learn more: https://www.bricbordeaux.com/en/bric-team/liver-cancers-and-tumor-invasion/

Keywords: liver cancer, hepatocellular carcinoma, hepatoblastoma, invasion, actin cytoskeleton, extracellular matrix, proteostasis, proteomics, invadosomes, alpha 1-antitrypsin deficiency, translational reprogramming

› Team 4: Helicobacter-associated digestive cancers, cancer stem cells and therapeutic strategies
Christine Varon

The **Helicobacter-associated digestive cancers, cancer stem cells and therapeutic strategies** team has a long history and international recognition in the field of Helicobacter infection, inflammation and gastric cancer. The team develops fundamental and translational research in digestive oncology. Their research projects concern the modeling of digestive cancers of infectious origin, for the identification of the molecular mechanisms involved and the role of the microbiota in carcinogenesis and the response to treatment, and the development of new diagnostic and therapeutic strategies in oncology, with a particular focus on cancer stem cells at the origin of chemoresistance and metastatic dissemination.

To learn more: https://www.bricbordeaux.com/en/bric-team/equipe-4-cancers-digestifs-associes-a-linfection-par-helicobacter-cellules-souches-cancereuses-et-strategies-therapeutiques/

Keywords: gastric cancer, inflammation, cancer stem cells, microbiota, bacterial toxins, therapeutic strategies, biomarker, cell signalling, mouse models, histopathology, molecular imaging

› Team 5: Translational Research In Oncodermatology and Orphan skin diseases (TRIO2)
Hamid-Reza Rezvani & Marie Beylot-Barry

The **TRIO2** team is working on skin carcinomas and cutaneous lymphomas with a synergistic interaction with Bordeaux University Hospital teams. They study phenotypic and genetic features, oncogenesis, metabolism flexibility and microenvironment in order to develop a comprehensive, multidisciplinary and integrative project on skin cancers. They are interested in photobiology and the effects of solar radiation on physiology and physiopathology of the skin. To this end, different transgenic mouse models, xenopus, and 3D skin equivalents have been developed.

To learn more: https://www.bricbordeaux.com/en/bric-team/recherche-translationnelle-en-cancerologie-cutanee-et-maladies-cutanees-rares/

Keywords: cutaneous lymphoma, skin carcinoma, oncogenesis, skin microenvironment, energy metabolism, biomarkers, 3D models, animal models, multiomics, *xeroderma pigmentosum*, skin engineering

› Team 6: Methods and Innovations for the Research in pediatric cancers (MIRCADE)
Christophe Grosset

The **MIRCADE** team studies solid cancers from the brain, liver and kidneys in children using cell and molecular biology, omics and various animal models. They have a long-standing expertise in microRNA, molecular signaling (Wnt, ERK), lipid metabolism and kinase-dependent receptors. They were the first team to study the bioarchitectural organization of tumor tissue by volumetric imaging, paving the way in the onconanotomy field.

To learn more: https://www.bricbordeaux.com/bric-team/mircade-methodes-et-innovations-pour-la-recherche-sur-les-cancers-de-lenfant/

Keywords: pediatric, cancer, liver, brain, kidneys, hepatoblastoma, diffuse midline glioma, Wilms tumor, drug repositioning, lipid metabolism, chemoresistance, 3D imaging, serial block face-scanning electron microscopy, applied mathematics, AI

› Team 7: Targeting Transcription in Breast Cancer
Martin Teichmann

The **Targeting Transcription in Breast Cancer** team explores triple negative and molecular apocrine breast cancer at the genetic and molecular level and translates basic research into clinical trials.

To learn more: https://www.bricbordeaux.com/en/bric-team/equipe-7-cibler-la-transcription-dans-le-cancer-du-sein/

Keywords: triple negative breast cancer, molecular apocrine breast cancer, AP2beta, POLR3G, genome editing, organoids, PDX

› Team 8: Biotherapies Genetics and Oncology (BioGO)
François Moreau-Gaudry & Sandrine Dabernat

The **BioGO** team gathers strong expertise in gene therapy. They explore CRISPR-CAS genotoxicity, focusing on the oncologic risk, and work on CRISPR-Cas gene therapy safety. Their cell and gene therapy knowledge from non-cancer hereditary diseases is used to propose innovative patient management with porphyria and to create tumor genetic vulnerabilities by cancer gene therapy or with naturally occurring molecules to render tumor cells sensitive to conventional treatments. Their translational program focused on identifying constitutive mutations leading to cancer susceptibility and detecting circulating cancer elements by liquid biopsy.

To learn more: https://www.bricbordeaux.com/en/bric-team/equipe-8-biotherapies-genetique-et-oncologie-biogo/

Keywords: gene therapy, CRISPR-Cas, genetic vulnerability, genome editing, pancreatic cancer, rectal cancer, prostate cancer, phototherapy, radiotherapy, bioactive food components

› Team 9: SARCOTARGET
Antoine Italiano

The **SARCOTARGET** team is devoted to translational research to better understand the therapeutic vulnerabilities of sarcomas. Current lab research efforts focus on learning more about the biology and potential therapies of soft-tissue sarcomas. They investigate the role of DNA damage and repair targeting in soft-tissue sarcomas and the role of epigenetic targets such as PRMT5 and bromodomain inhibitor in soft-tissue sarcomas
New combination therapies are explored by analyzing a large panel of cell lines and mice models established from tumor samples of patients treated at Institut Bergonié.

To learn more: https://www.bricbordeaux.com/en/bric-team/equipe-9-sarcotarget/

Keywords: sarcomas, tumor genetics, microenvironment, radiomics, cell signaling, resistance, combination therapies, DNA damage repair, immuno-oncology

› Team 10: Normal and leukemic hematopoietic stem cells
Jean-Max Pasquet

The **Normal and leukemic hematopoietic stem cells** team is a translational research team working on acute myeloid leukemia with clinicians and biologists to improve treatment, to decicpher response and resistance, to target persistance mechanisms of leukemic initiating cells in the bone marrow. Indeed, the study of leukemia cells in the conditions of the hematopoietic niche demontrates a dialogue between them and the microenvironment which allows large plasticity and adaptative mechanisms allowing the resistance and persistence of leukemic initiating cells.

To learn more: https://www.bricbordeaux.com/bric-team/equipe-10-cellules-souches-hematopoietiques-normales-et-leucemiques/

Keywords: acute myeloid leukemia, tyrosine kinase, resistance, persistance, leukemic stem cells, hematopoietic niche

› Team 11: Modeling transformation and resistance in leukemia
Katie Sawai

The **Modeling transformation and resistance in leukemia** team specializes in developing innovative genetic models to study the *in vivo* functions of hematopoietic stem cells, the impact of aging on hematopoiesis, and the mechanisms that promote transformation and resistance in leukemia. They also perform clinical work on the development of novel tools to improve the healthcare of aged, multimorbid cancer patients.

To learn more: https://www.bricbordeaux.com/en/bric-team/equipe-11-modelisation-des-mecanismes-de-transformation-et-de-resistance-dans-la-leucemie/

Keywords: hematopoietic stem cells, CRISPR-Cas9, *in vivo*, aging, oncogeriatry, leukemia, resistance, leukemic stem cells

Core Facilities

UAR TBMCore
Support and Research Unit of
Biological and Medical Sciences
Technologies and Medical Sciences
Béatrice Turcq
CNRS UAR 3427
INSERM US 05

- *FACSility: Flow cytometry with cell sorter*
- *OneCell: qPCR and single cell*
- *Vect'UB: Development & production of viral vectors*
- *Histopathologie: Histology & histopathology*
- *UB'L3: Experimentation in biosafety level 3 laboratory*
- *OncoProt: Tissue, cellular and subcellular proteomics applied to cancer*
- *CRISP'edit: CRISPR technology for genome editing*
- *SAM: Metabolism Analysis*
- *Vivoptic: in vivo imaging of small animal models*
- *VoxCell: Production of encapsulated 3D cell models*
- *CellOxia: Cell culture in hypoxia*

CBIB
Bioinformatics Center of Bordeaux
Macha Nikolski and Alexis Gropp

Département de recherche
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