

# research

Sciences Technology Health



## Henri Poincaré University, a leader for research in the fields of sciences, technology and health.

Henri Poincaré University's laboratories develop high-level international research, structured into three major divisions: Sciences, Technology and Health. The university draws upon its excellency centres that participate to the most recent developments in the world of science, such as the emergence of ICST and discoveries in biology, to derive applications from its findings in fundamental science.

That foundation is the springboard for new projects, as embodied by the recently-created Federative Research Institutes and the new transversal lines (Biological Macromolecules and Environmental Resources).

UHP carries out its research policy relying on five scientific doctoral schools, which are managed in conjunction with neighbouring universities (two of the schools are under direct supervision of UHP).

By developing shared research centres, organising frequent international conventions, hosting researchers and teachers – eminent guest researchers – and maintaining a high quality scientific environment, UHP hopes to increase its appeal and broaden its European dimension.

The circulation of scientific and technical information is also one important components of this policy.

Research within UHP is organised into six research sectors and along two transversal lines. It encompasses 42 laboratories and three technological research teams, all under contract with the Ministries of National Education and Research. 20 of them are affiliated with CNRS, 2 with INRIA, 6 with INRA and 3 with INSERM.

The research topics explored by the laboratories partly reflect the university's history and its support for regional industrial activity, but also, and increasingly so, the evolution of modern science. Research at UHP is therefore known for its strong positioning in traditional excellence sectors such as mathematics, chemistry, materials and geology, alongside significant advances in the fields of computer engineering, automatics and production engineering, as well as in life sciences and health.

The Vice President of the Scientific Board

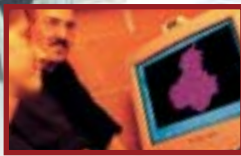
# UHP Research: Facts and Figures

45	officially-recognised research laboratories (42 of which are direct supervision of UHP)
31	units linked with major research institutions (CNRS: 20 - INRA: 6 - INRIA: 2 - INSERM: 3)
15	university laboratories supported by the Ministry of National Education and Research
3	technological research teams
990	researchers and teacher-researchers, including 229 PSTE researchers (working in public scientific and technical establishments)
5	doctoral schools
25	"Diplômes d'Etudes Approfondies" (Masters)
813	doctorate and post-doctorate candidates
160	HDRs (senior research fellow approvals)
28	qualified to direct research
279	Ph.D.s in health (medicine, pharmacy, dental surgery)
134	research contracts with industry
3	3 business creations developed at the Lorraine Incubator: Fine Chemistry, Biotechnology, Environment
3	laboratories and 1 shared research centre applying for ISO 17025 accreditation (COFRAC)
6	research sectors and 2 transversal lines
15	shared research centres
71804	m <sup>2</sup> devoted to research

Data 2002

# How UHP research is structured

Research at UHP is structured into six research sectors and along two transversal lines, encompassing 42 laboratories and 3 technological research teams. These are under contract with the Ministry of National Education and Research. 20 of them are affiliated with CNRS, 2 with INRIA, 6 with INRA and 3 with INSERM.



## The 6 Scientific Sectors

### ● Computer Engineering, Automatics, Electronics + Mathematics (IAE+ M)

UHP has strengthened its partnership with CNRS and INRIA in this field, as part of the UMR (Mixed Research Units) projects at Institut Elie Cartan (Mathematics) and LORIA (Computer Science), as well as through Research in Automatics (UMR CRAN). Research in Electronics is developed by fostering the emergence of a specific topic focused on the design and implementation of new components, instrumentation and electronic systems (LIEN). The Nancy-based Electrotechnics and Electronics Research Group (UMR GREEN), which uses a laboratory shared by UHP and INPL, also contributes to the sector's vitality.

- i 304 permanent staff members, including 246 professor-researchers and 58 PSTE researchers
- i 219 doctoral and post-doctoral candidates

**Contacts for this Sector:** Daniel BARLET • Mail: Daniel.Barlet@iecn.u-nancy.fr  
Francis LEPAGE • Mail: Francis.Lepage@cran.u-nancy.fr

### ● Physics and Chemistry of Matter and Materials (PCMM)

This sector encompasses 4 UMRs: the Chemistry of Mineral Solids Laboratory (LCSM), the Physics of Material Laboratory (LPM), the laboratory of Crystallography and Modelling of Mineral and Biological Materials Laboratory (LCM3B) and the Physics of Ionised Mediums and Applications Laboratory (LPMIA). The main research topics explored there deal with plasma physics and deposit processes, structural and functional materials, as well as with physical methods, including crystallographic methods. The scientific strategy is run by UHP's "Physics and Chemistry of Matter and Materials (PCMM)" Centre. The "Nancy Materials Centre" FRI gathers the PCMM Centre and the INPL's two laboratories where some UHP staff carry out their research: LSG2M and LSGS.

- i 166 permanent staff members, including 122 professor-researchers and 44 PSTE researchers
- i 129 doctoral and post-doctoral candidates

**Contact for this Sector:** Patrick ALNOT • Mail: patrick.alnot@lpmi.uhp-nancy.fr

## ● Energy, Mechanics, Process Engineering

This sector deals in particular with the development of fluid mechanics, energy thermics and structure calculation, topics that are specific to UMR 7563 LEMTA and the EA 1116 Digital Interfaces, Modelling and Materials in Civil Engineering Research Team. LEMTA participates in the work carried out at the Research Centre on the Mechanics of Complex Fluids and at the National Technological Research Centre on Fuel Cell Batteries and Interfaces for Transport. The LERMAB UMR INRA ENGREF 1093 centre looks into aspects of finalised research on the forest and the use of wood as an industrial material. LSCG, a unit specific to CNRS 6811, also hosts professor-researchers from UHP.

- i 152 permanent staff members, including 125 teachers-researchers and 27 PSTE researchers
- i 154 doctoral and post-doctoral candidates

**Contacts for this Sector:** Michel FEIDT • Mail: mfeidt@ensem.u-nancy.fr  
André ZOULALIAN • Mail: Andre.Zoulalian@lermab.uhp-nancy.fr

## ● Geosciences

Resources in this sector are grouped into a Research Federation (FR-633), which is responsible for developing, at the international level, research regarding the understanding of natural geological or biological systems, and how to manage, protect and/or make use of them. UHP has gathered its resources into UMR 7566, entitled “Geology and Management of Mineral and Energetic Resources” (G2R), which receives highly significant industrial support from a civil-society company (CREGU), and in FRE 2440, entitled “Laboratory on Interactions between Micro-organisms, Minerals and Organic Matter in Soil” (LIMOS). This sector maintains close relations with UPR 2300, the Centre for Petrographic and Geochemical Research (CPRG), whose research focuses on planetology-cosmochemistry, magma processes and modelling of tectonic processes, as well as on environments and paleo-environments.

- i 65 permanent staff members, including 35 professor-researchers and 30 PSTE researchers
- i 78 doctoral and post-doctoral candidates

**Contact for this Sector:** Pierre BARBEY • Mail: Barbey@crpg.cnrs-nancy.fr

## ● Molecular Chemistry

At LCPME (Physical Chemistry and Microbiology for the Environment), research on analytical chemistry and electro-chemistry, physical chemistry (spectroscopic analysis of interfaces) and microbiology contribute to improving present understanding of aqueous media. Resources in theoretical chemistry, organic chemistry and organic and colloidal physical chemistry have been brought together within the “Structure and Reactivity of Complex Molecular Systems” UMR, whose aim is to design and prepare new molecular structures, whose physical, chemical and biological properties are predicted, measured and explained. The Methodology of Nuclear Magnetic Resonance FRE, which develops methods and instrumentation for the Solids RMN along with solutions for structural and dynamic determinations, also belongs to this sector. It is co-ordinated by the Nancy Institute of Molecular Chemistry (INCM).

- i 74 permanent staff members, including 52 teachers-researchers and 22 PSTE researchers
- i 68 doctoral and post-doctoral candidates

**Contact for this Sector:** Yves CHAPLEUR • Mail: yves.chapleur@meseb.uhp-nancy.fr

## ● Biology and Health

This sector covers a wide range of topics and expertise. Overall, it comprises 21 recognised structures, including 2 CNRS UMRs, 3 INRA UMRs along with 2 research units under contract, 1 INSERM unit, a combined INSERM team, and one team belonging to a Parisian INSERM unit, and 13 hosting teams. The strategy implemented in this sector consists in grouping together research teams within Federative Research Institutes, according to scientifically consistent principles. Two IFRs have thus been created: IFR 110 “Genetics, Physiology and Ecology of Microbial Interactions” and IFR 111 “Bioengineering: Enzymes, Peptides, RNA and Biomaterials”.

- i 229 permanent staff members, including 181 professor-researchers and 48 PSTE researchers
- i 165 doctorate and post-doctorate candidates

**Contacts for this Sector:** Patrick NETTER • Mail: netter@facmed.u-nancy.fr  
Guy BRANLANT • Mail: Guy.Branlant@maem.uhp-nancy.fr

# How UHP research is structured

## 2 transversal lines

The 2 transversal lines set out at UHP are based on the use of complementary approaches, thereby optimising research potential and resources and participating in the multi-disciplinarity desired by the University.

### ● Environmental Resources

This line links together 7 laboratories and includes 150 permanent staff members, including 96 teachers-researchers and 54 PSTE researchers – 152 doctorate and post-doctorate candidates.

#### Contacts for this line:

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Jean Pierre JACQUOT • Mail: Jean-Pierre.Jacquot@scbiol.u-nancy.fr

### ● Biological Macromolecules

This line brings together 9 laboratories and groups 227 permanent staff members, including 154 teachers-researchers and 73 PSTE researchers - 181 doctorate and post-doctorate candidates.

#### Contacts for this line:

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## FRIs and Research Federations

They are responsible for scientific co-ordination in the following fields:

### Bioengineering: Enzymes, Peptides, RNA, Biomaterials (IFR 111)

Director: Christiane BRANLANT

Faculté des Sciences et Techniques - Bld des Aiguillettes - BP 239 - 54506 Vandœuvre-lès-Nancy Cedex

Mail: christiane.branlant@maem.uhp-nancy.fr

### Genetics, Physiology and Ecology of Microbial Interactions (GPEIM) (IFR 110)

Director: Bernard DECARIS

Faculté des Sciences et Techniques - Bld des Aiguillettes - BP 239 - 54506 Vandœuvre-lès-Nancy Cedex

Mail: decaris@nancy.inra.fr

### Nancy Materials Centre (Physics, Chemistry, Metallurgy, Surfaces)

Director: Christian G'SELL

Ecole des Mines de Nancy (LPM) - École des Mines de Nancy - Parc de Saurupt - 54042 Nancy Cedex

Mail: gsell@mines.u-nancy.fr

Assistant Director: Edward Mc RAE

Faculté des Sciences et Techniques - Laboratoire de Chimie du Solide Minéral (LCSM) - Faculté des Sciences et Techniques - Bld des Aiguillettes - BP 239 - 54506 Vandœuvre-lès-Nancy Cedex

Mail: Edward.Mcrae@lcsm.uhp-nancy.fr

### Nancy Institute of Molecular Chemistry INCM (FR CNRS 1742)

Director: Philippe COUTROT

Faculté des Sciences et Techniques - Bld des Aiguillettes - BP 239 - 54506 Vandœuvre-lès-Nancy Cedex

Mail: Philippe.Coutrot@incm.uhp-nancy.fr

Assistant Director: Daniel CANET

Faculté des Sciences et Techniques - Bld des Aiguillettes - BP 239 - 54506 - Vandœuvre-lès-Nancy Cedex

Mail: Daniel.Canet@rmn.uhp-nancy.fr

### Water -Soil - Land Environment

Director: Christian FRANCE LANORD

CRPG - 15, rue Notre Dame des Pauvres - BP 20 - 54501 Vandœuvre-lès-Nancy Cedex

Mail: CFL@crpg.cnrs-nancy.fr

Assistant Director: Jacques BERTHELIN

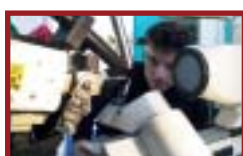
LIMOS - 17, rue Notre Dame des Pauvres - BP 5 - 54501 Vandœuvre-lès-Nancy Cedex

Mail: bertelin@cpb.cnrs-nancy.fr

# 15 Shared Research Centres: enabling cutting-edge analysis and experimentation capabilities

The quality of the research carried out in areas related to the Sciences of Matter, Earth Sciences and Life Sciences is partly due to the high-performance facilities set aside for analysis and experimentation. For over 20 years, UHP's Scientific Board has taken action to support the development of the shared research centres, which are open both to our laboratories and to users from the world of public and private research.

DEPARTMENT OR EQUIPMENT	DIRECTOR		TEL. NUMBER
<b>PHYSICS AND CHEMISTRY OF MATTER AND MATERIALS Sector</b>			
<b>CRYOGENICS</b>	Professor Alain SCHUHL	School of Sciences and Technology	(33-3) 83 68 48 04
<b>SHARED MAGNETISM CENTRE</b>	Professor Alain SCHUHL	School of Sciences and Technology	(33-3) 83 68 48 04
<b>ELECTRONIC PROBE ANALYSIS</b>	Professor Pierre STEINMETZ	School of Sciences and Technology	(33-3) 83 68 46 12
<b>PHOTOEMISSION</b>	Professor Daniel MALTERRE	School of Sciences and Technology	(33-3) 83 68 48 09
<b>DIFFRACTOMETRY OF MONOCRYSTALS</b>	Professor Claude LECOMTE Dr André AUBRY	School of Sciences and Technology	(33-3) 83 68 48 69
<b>TRANSMISSION ELECTRON MICROSCOPY</b>	Professor Denis BILLAUD	School of Sciences and Technology	(33-3) 83 68 46 22
<b>NEAR-FIELD MICROSCOPY</b>	Professor Philippe MANGIN	School of Sciences and Technology	(33-3) 83 68 48 02
<b>ENERGY MECHANICS AND PROCESS ENGINEERING Sector</b>			
<b>ELECTRONIC PARAMAGNETIC RESONANCE</b>	Professor André MERLIN	School of Sciences and Technology	(33-3) 83 68 48 37
<b>GEOSCIENCES Sector</b>			
<b>X-RAY FLUORESCENCE</b>	Professor Pierre BARBEY	School of Sciences and Technology	(33-3) 83 68 47 69
<b>MOLECULAR CHEMISTRY Sector</b>			
<b>NUCLEAR MAGNETIC RESONANCE</b>	Professor Daniel CANET	School of Sciences and Technology	(33-3) 83 68 43 49
<b>ORGANIC MASS SPECTROMETRY</b>	Dr Jean-Marie ZIEGLER	School of Sciences and Technology	(33-3) 83 68 49 66
<b>BIOLOGY - HEALTH Sector</b>			
<b>PROTEIN SEQUENCING</b>	Dr Gérard HUMBERT	School of Sciences and Technology	(33-3) 83 68 49 80
<b>ELECTRON MICROSCOPY</b>	Professor Bernard FOLIGUET	School of Medicine	(33-3) 83 68 36 11
<b>BIOLOGY, PHYSICS AND CHEMISTRY OF MOLECULAR INTERACTIONS</b>	Professor Guy BRANLANT	School of Sciences and Technology	(33-3) 83 68 43 04
<b>BIOLOGICAL STUDIES IN ELECTRON MICROSCOPY</b>	Professor Jean-Claude PARGNEY	School of Sciences and Technology	(33-3) 83 68 42 34



Training in and through research

## 5 Doctoral Schools



# Computer Engineering, Automatics, Electronics, Electrotechnics, Mathematics

IAEM LORRAINE ED N° 0077

## Fields of Instruction at the Doctoral School:

- | Computer Engineering
- | Automatics
- | Electronics- Electrotechnics
- | Mathematics

Director: Jean-Louis CLERC

To write to the Doctoral School: Université Henri Poincaré • 24-30, rue Lionnois - B.P. 60120 - 54003 Nancy Cedex

Tel: (33-3) 83.68.20.35/32

<http://www.iaem.uhp-nancy.fr/>

## UHP Laboratories Linked to the Doctoral School:

- | UMR 7039 - Nancy Automatics Research Centre (CRAN)
- | UMR 7502 - Elie Cartan Institute of Nancy (IECN)
- | UMR 7503 - The Lorraine Computer Engineering and Applications Research Laboratory (LORIA)
- | UMR 7037 - Nancy Electrotechnics and Electronics Research Group of (GREEN)
- | EA 3440 - Nancy Electronic Instrumentation Laboratory of (LIEN)

## DEAS (MASTERS) OFFERED AT THE DOCTORAL SCHOOL

## DEA DIRECTOR

## MAIL

Lorraine Computer Engineering "Software Intelligence"	Dominique MERY	Mail: mery@loria.fr
Modelling and Simulation of Built Space	Jean-Marie PIERREL, Jean-Claude BIGNON	Jean-marie.Pierrel@loria.fr bignon@crai.archi.fr
Control, Signals and Communication	Claude IUNG	claudie.iung@ensem.u-nancy.fr
Automated Production	Gérard MOREL	Gerard.Morel@cran.uhp-nancy.fr
Processes and Processing of Electric Energy (PROTEE)	Alain MAILFERT	Alain.Mailfert@ensem.u-nancy.fr
Instrumentation and Microelectronics	Mustapha NADI	nadi@lien.u-nancy.fr
Mathematics	Francis CONRAD	conrad@iecn.u-nancy.fr
Applied Mathematics	Tillmann WURZBACHER	croisil@poncelet.univ-metz.fr



# Training in and through research

## Biology Health Environment

BIOSE ED N°0266

### Fields of Instruction at the Doctoral School:

- ┆ Structural Molecular and Cellular Biology
- ┆ Chemistry and Microbiology of Water
- ┆ Enzymology
- ┆ Epidemiology and Public Health
- ┆ Genetics
- ┆ Biological and Medical Engineering
- ┆ Sciences of Medicine



**Director:** Bernard DECARIS

**To write to the Doctoral School:** Université Henri Poincaré - 24-30, rue Lionnois - BP 60120 - 54003 NANCY Cedex  
Tel: (33-3) 83 68 20 34 or (33-3) 83 68 20 32

### UHP Laboratories linked to the Doctoral School:

- ┆ UMR 7036 - Crystallography and Modelling of Mineral and Biological Materials Laboratory (LCM3B)
- ┆ UMR 7561 - Articular Physiopathology and Pharmacology
- ┆ UMR 7563 - Theoretical and Applied Energetics and Mechanics (LEMTA)
- ┆ UMR 7564 - Laboratory of Environmental Physical Chemistry and Microbiology (LCPME)
- ┆ UMR 7565 - Structure and Reactivity of Complex Molecular Systems (SRSMC)
- ┆ UMR 7567 - RNA Maturation and Molecular Enzymology Laboratory (MAEM)
- ┆ UMR\_A 1128 - Genetics and Microbiology Laboratory (LGM)
- ┆ UMR\_S 420 - Health Work Epidemiology (EST)
- ┆ UMR\_S Team 4 - Team 4 - Gene-Environment Interactions and Cardio-Vascular Disease (IGEMCV)
- ┆ EMI 0014 - Cellular and Molecular Pathologies in Nutrition
- ┆ EA 3452 - Preparation and Evaluation of Materials of Therapeutic and Biological Interest
- ┆ EA 3441 - Human Molecular Cytogenetics
- ┆ EA 3442 - Genetics, Signalling and Differentiation (GSD)
- ┆ EA 3443 - Bronchial Oncogenesis: Epithelial Chemoprevention and Immuno-Modulation
- ┆ EA 3444 - Clinical Epidemiology, Prevention, Quality of Life
- ┆ EA 3445 - Biochemistry of Gram+ Bacteria (LBBG+)
- ┆ EA 3446 - Peroxysome Proliferators (PROLIFERATEURS DE PEROXYSOMES)
- ┆ EA 3447 - Lesions – Cellular Repairation – Cardiac and Arterial Remodelling - Interactions with Target Organs (LRC-RCA)
- ┆ EA 3448 - Physiopathology and Pharmacology of Cardio-Vascular Ageing Laboratory
- ┆ EA 3449 - Food Biosciences Laboratory (LBSA)
- ┆ EA 3450 - Respiratory Regulations Systems in Adults and Children: Theoretical, Experimental and Clinical Aspects (EA Régulation Respiratoire)
- ┆ EA 3451 - Animal Sciences Laboratory (LSA)
- ┆ EA 3453 - Neuromodulating Systems Affecting Ingestive Behaviours, Genetics and Development (SNCI)

### DEAs (MASTERS) OFFERED AT THE DOCTORAL SCHOOL

#### DEA DIRECTOR

#### MAIL

Microbiology-Enzymology-Nutrition	Guy BRANLANT	<a href="mailto:guy.branlant@maem.uhp-nancy.fr">guy.branlant@maem.uhp-nancy.fr</a>
Pharmacology: Metabolism and action mechanisms of medicinal products; Clinical Pharmacology	Marie-Madeleine GALTEAU	<a href="mailto:Galteau@pharma.uhp-nancy.fr">Galteau@pharma.uhp-nancy.fr</a>
Bioengineering-Biomaterials	Jean-François STOLTZ	<a href="mailto:Stoltz@hemato.u-nancy.fr">Stoltz@hemato.u-nancy.fr</a>
Clinical Epidemiology and Evaluation of Health Actions	Serge BRIANÇON	<a href="mailto:briancon@sante-pub.u-nancy.fr">briancon@sante-pub.u-nancy.fr</a>
Chemistry and Microbiology of Water	Jean-Claude BLOCK	<a href="mailto:Jean-Claude.Block@pharma.uhp-nancy.fr">Jean-Claude.Block@pharma.uhp-nancy.fr</a>
Biology of Bone and Joints and Biomaterials from Calcified Tissue	Patrick NETTER	<a href="mailto:netter@facmed.u-nancy.fr">netter@facmed.u-nancy.fr</a>

# Molecular chemistry

SESAMES ED N°0412

## Fields of Instruction at the Doctoral School:

- | Organic, Bio-Organic and Macro-Molecular Chemistry
- | Spectroscopy, Physicochemical Analyses and Characterisations
- | Theoretical Chemistry and Physics; Modelling, Simulation and Computer Engineering
- | Physicochemistry of Surfaces and Interfaces
- | Reactivity, Chemical Kinetics and Catalysis
- | Structures and Properties of Molecular, Macromolecular and Supramolecular Systems
- | Analytical Chemistry and Electrochemistry
- | Laser Material Ablation
- | Photochemistry and Photophysics
- | Colloidal Systems, Formulation, Organised Molecular Systems
- | Chemical Thermodynamics
- | Carbon Materials, Conductor and Composite Polymers
- | Physics and Chemistry of Fluids, Interfaces and Complex-Structure Matter

**Director:** Daniel CANET

**To write to the Doctoral School:** Laboratoire de Méthodologie RMN - Faculté des Sciences et Techniques  
BP 239 - 54506 Vandœuvre-lès-Nancy Cedex

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<http://www.sesames.uhp-nancy.fr>

## UHP Laboratories linked to the Doctoral School:

- | UMR 7555 - Chemistry of Mineral Solids Laboratory (LCSM)
- | UMR 7036 - Crystallography and Modelling of Mineral and Biological Materials Laboratory (LCM3B)
- | UMR 7564 - Laboratory of Environmental Physical Chemistry and Microbiology (LCPME)
- | UMR 7565 - Structure and Reactivity of Complex Molecular Systems (SRSMC)
- | UMR 7567 - RNA Maturation and Molecular Enzymology Laboratory (MAEM)
- | FRE 2415 - NMR Methodology Laboratory (RMN)

## DEAs (MASTERS) OFFERED AT THE DOCTORAL SCHOOL

Molecular Chemistry and Physicochemistry

## DEA DIRECTOR

Claude SELVE

## MAIL

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Informatic and Theoretical Chemistry

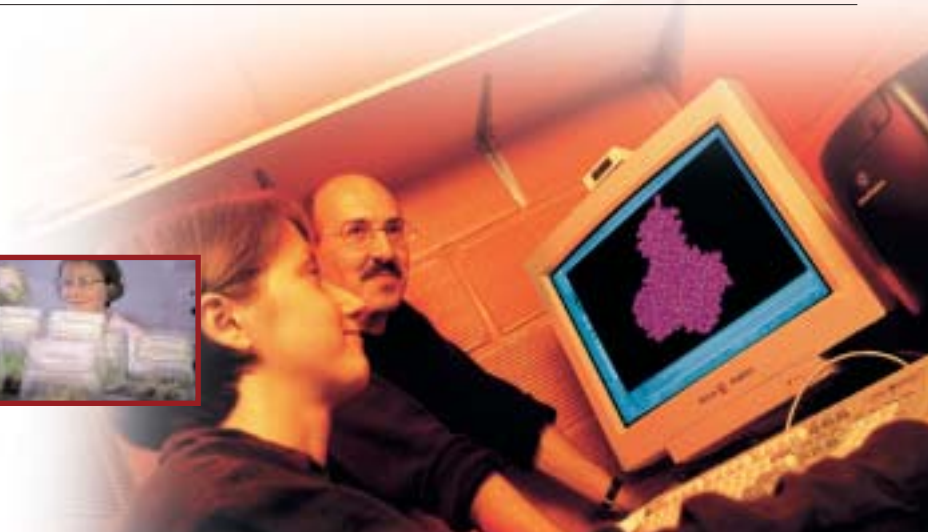
Jean-Louis RIVAIL

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Physics and Physicochemistry of Matter and Materials

Joseph HUGEL

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# Training in and through research

## Energy, Materials, Mechanics

EMMA ED N°0409

### Fields of Instruction at the Doctoral School:

- Chemistry-Physics for the Engineer, Materials for Industry
- Engineering of Material Elaboration Processes
- Chemistry-Physics for the Engineer, Materials for Industry
- Engineering of Material Elaboration Processes
- Physical Metallurgy
- Phase Properties, Transformations and Transitions
- Fluid Mechanics, Thermics, Ionised Mediums, Energetics
- Complex Fluids
- Hydrodynamics and Thermics of Porous Mediums
- Mechanics of Solids and Materials
- Surfaces and Interfaces
- Lasers and Active Optic Functions, Materials for Optics, Optoelectronics
- Thin Layers; Microsystem Technology
- Mecatronics, Robotics, Management of Computer-Assisted Production

**Director:** Michel LÉBOUCHE

**To write to the Doctoral School:** ENSEM - 2, av. de la Forêt de Haye - B.P. 160 - 54504 Vandœuvre-lès-Nancy Cedex

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### UHP Laboratories Linked to the Doctoral School:

- UMR 7555 - Chemistry of Mineral Solids Laboratory (LCSM)
- UMR 7036 - Crystallography and Modelling of Mineral and Biological Materials Laboratory (LCM3B)
- UMR 7040 - Physics of Ionised Mediums and Applications Laboratory (LPMIA)
- UMR 7556 - Materials Physics Laboratory (LPM)
- UMR 7563 - Theoretical and Applied Energetics and Mechanics (LEMTA)
- UMR 7564 - Laboratory of Environmental Physical Chemistry and Microbiology (LCPME)
- UMR 7570 - Science and Engineering of Surfaces Laboratory (L.S.G.S.)
- UMR 7584 - Science and Engineering of Materials and Metallurgy Laboratory (LSG2M)
- EA 1116 - Digital Interfaces, Modelling and Materials in Civil Engineering Research Teams (ERIN)

### DEAs (MASTERS)

#### OFFERED AT THE DOCTORAL SCHOOL

#### DEA DIRECTOR

#### MAIL

Materials, Mechanics, Structures, Processes

Laszlo TOTH

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Physics and Chemistry of Matter and Materials

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# Environmental Resources, Processes and Products

RP2E ED N°0410

## Fields of Instruction at the Doctoral School:

- ┆ Geosciences
- ┆ Agronomic and Forest Sciences, Biology and Ecology, Biotechnologies
- ┆ Product, Process and Industrial System Engineering

**Director:** Françoise HOMAND

**Address of the Doctoral School:** LAEGO - ENSG - Rue du Doyen Marcel Roubault - B.P.40 - 54501 Vandœuvre-lès-Nancy Cedex - Tel: (33-3) 83.59.63.01

[http://www.ensic.inpl-nancy.fr/ED\\_RP2E/](http://www.ensic.inpl-nancy.fr/ED_RP2E/)

## UHP Laboratories Linked to the Doctoral School:

- ┆ UMR 7566 - Geology and Management of Mineral and Energy Resources (G2R)
- ┆ UMR\_A 1093 - Wood-Material Study and Research Laboratory (LERMAB)
- ┆ UMR\_A 1136 - Tree-Micro Organism Interactions (IaM)
- ┆ UMR\_A 1137 - Forest Ecology and Ecophysiology (EEF)
- ┆ UPR 2300 - Centre for Petrographic and Geochemical Research (CRPG - CNRS)
- ┆ FRE 2440 - Laboratory on Interactions Between Micro Organisms, Minerals and Organic Matter in Soil (LIMOS)
- ┆ EA 3451 - Animal Sciences Laboratory (LSA)

DEAs (MASTERS) OFFERED AT THE DOCTORAL SCHOOL	DEA DIRECTOR	MAIL
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Process Engineering	Michael MATLOSZ	vanwal@ensic.inpl-nancy.fr
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Earth: Dynamics, Resources, Environment	Christian FRANCE-LANORD	cfl@crpg.cnrs-nancy.fr
Protection, Planning and Use of Soils and Sub-Soils (PAE3S)	Michel BUES	Michel.Bues@cpb.cnrs-nancy.fr
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Wood Sciences	André ZOULALIAN	Andre.Zoulalian@lermab.uhp-nancy.fr
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# Putting research to use

## Interface with the Corporate World

The Transfer and Application Department (Service Transfert et Valorisation) is responsible for tracking and promoting UHP's capabilities with the industrial world. Its legal skills allow it to assist researchers in negotiating industrial partnerships. UHP wishes to take advantage of the opportunities opened up by the recent Law on Innovation (12 July 1999) and to set up one single structure to either commercialise expertise and services to industry or foster links between the university's different fields of expertise to better fulfil industrial demand, and bring in projects for new activities from the market, in order to rationalize its practices in terms of commercial rates and intellectual property strategy. In the area of hightech entrepreneurship, which relies heavily on research and laboratory capabilities, UHP, along with the Lorraine region's three other universities, has created a business incubator, which received the Ministry's recognition in November 1999.

## Quality Approach

UHP wishes to broaden its undertakings in the fields of industrial relations and business creation at the European level. The rules of the European Community require the development of quality certification procedures, in particular with respect to the ISO 17025 standard, so as to comply with the eligibility criteria for contracts linking Universities and Enterprises.

## Your Contacts:

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## Transfer and Application Department

Université Henri Poincaré  
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# directory

of laboratories at Henri Poincaré University

Automatics

Mathematics

Mechanics Materials

Health Environment

Computer Engineering

Molecular Chemistry

Electronics  
Electrotechnics

Biology



## Computer Engineering, Automatics, Electronics + Mathematics

### UMR 7037 GREEN

#### Nancy Electrotechnics and Electronics Research Group

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 rezzoug@green.uhp-nancy.fr  
 Web: <http://www.green.uhp-nancy.fr>

**KEY WORDS:** electrotechnics, power electronics, command, diagnosis, fields, supraconductors

### UMR 7039 CRAN

#### Nancy Automatics Research Centre

**Director:** Francis LEPAGE  
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 Francis.Lepage@cran.uhp-nancy.fr  
 Web: <http://www.cran.uhp-nancy.fr>

**KEY WORDS:** automatics, signal processing, production engineering, diagnosis, operating safety, engineering for health products, communications networks, hybrid systems, identification, command

### UMR 7502 IECN

#### Institut Elie Cartan in Nancy

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**KEY WORDS:** mathematics

### UMR 7503 LORIA

#### Lorraine Computer Engineering and Applications Research Laboratory

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 kirchner@loria.fr  
 Web: <http://www.loria.fr>

**KEY WORDS:** logic, parallelism and distribution, man-machine communications, proof, algorithms, software construction, imaging, constraint resolution, perception and reasoning, modelling

### EA 3440 LIEN

#### Nancy Electronic Instrumentation Laboratory

**Director:** Mustapha NADI  
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 nadi@lien.uhp-nancy.fr  
 Web: <http://www.lien.uhp-nancy.fr/>

**KEY WORDS:** microelectronic design, medical electronic instrumentation, electronic systems and instrumentation, electronic measurements, integrated circuit architecture, electromagnetic fields and health

## Physics and Chemistry of Matter and Materials (PCMM)

### UMR 7036 LCM3B

#### Crystallography and Modelling of Mineral and Biological Materials

**Director:** Claude LECOMTE  
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 Web: <http://www.lcm3b.uhp-nancy.fr>

**KEY WORDS:** electronic density, methodology of x-ray diffraction, crystalline structures, proteins, molecular materials, porous materials, ferroelectrics

### UMR 7040 LPMIA

#### Physics of Ionised Mediums and Applications Laboratory

**Director:** Bernard WEBER  
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 Web: <http://www.lpmi.uhp-nancy.fr>

**KEY WORDS:** hot plasma, magnetic turbulence, thermonuclear fusion, reactive plasmas, microsystems, science of surfaces

### UMR 7555 LCSM

#### Chemistry of Mineral Solids Laboratory

**Director:** Pierre STEINMETZ  
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 Web: <http://www.lcsm.uhp-nancy.fr>

**KEY WORDS:** insertion, carbon, intermetallics, corrosion, thermodynamics, glass, lead, alloys

### UMR 7556 LPM

#### Physics of Materials Laboratory

**Director:** Philippe MANGIN  
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 Web: <http://www.lpm.uhp-nancy.fr>

**KEY WORDS:** materials, nanomaterials, surfaces, magnetism, photoluminescence, statistical physics, mechanical properties, thermoelectricity, polymers, glass

### UMR 7570 LSGS

#### Science and Engineering of Surfaces Laboratory

**Director:** Henri MICHEL  
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 Web: <http://www.mines.uhp-nancy.fr/www/sgs/>

**KEY WORDS:** thermo-chemical treatments, diffusion/precipitation, cool plasmas and post-shock, atom-surface interactions, physical and chemical deposits in vapour phase, microstructures (analytical MET, MEB), behavioural laws, fragility and adherence, tribology

### UMR 7584 LSG2M

#### Science and Engineering of Materials and Metallurgy Laboratory

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 dubois@mines.uhp-nancy.fr

**KEY WORDS:** metallurgy, elaboration, solidification, microstructures, nanomaterials, processes, alloys, simulation

## Energy, Mechanics, Process Engineering

### UMR 7563 LEMTA

#### Theoretical and Applied Energetics and Mechanics Laboratory

Director: Christian MOYNE

Address: LEMTA

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Christian.Moyne@ensem.inpl-nancy.fr  
Web: <http://www.ensem.inpl-nancy.fr/LEMTA>

**KEY WORDS:** fluid mechanics, solid mechanics, thermics, energetics, porous mediums, fluid and thermic metrology, biomechanics, hydrodynamics, rheology, thermic radiation

### UMR\_A 1093 LERMAB

#### Wood-Material Study and Research Laboratory

Director: Xavier DEGLISE

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Xavier.Deglise@lermab.uhp-nancy.fr  
Web: <http://www.enstib.uhp-nancy.fr>

**KEY WORDS:** drying, wood chemistry, adhesion-adhesives, surface treatments, preservation, re-engineering for power, mechanics, civil engineering

### UPR 6811 LSGC

#### Sciences of Chemical Engineering Laboratory

Director: Michel SARDIN

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Web: <http://www.ensic.u-nancy.fr/ENSIC/LSGC/>

**KEY WORDS:** separators, modelling, acquisition, information processing, pilot models, simulation, optimisation, control, command, reactors

### EA 1116 ERIN

#### Digital Interface, Modelling and Materials in Civil Engineering Research Teams

Director: Michel GUEURY

Address: ESSTIN. 2, rue Jean Lamour  
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Web: <http://esstin.uhp-nancy.fr/erin/>

**KEY WORDS:** finished components, structure calculation, professional software, vibratory dynamics, flexible mechanisms

## Geosciences

### UMR 7566 G2R

#### Geology and Management of Mineral and Energy Resources

Director: Jacques LEROY

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jacques.leroy@g2.uhp-nancy.fr

**KEY WORDS:** geology, environment, raw materials, hydrocarbons, fluids

### FRE 2440 LIMOS

#### Laboratory on Interactions Between Microorganisms, Minerals and Organic Matter in Soils

Director: Corinne LEYVAL

Address: 17, rue Notre-Dame des Pauvres

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leyval@cpb.cnrs-nancy.fr

**KEY WORDS:** interactions, minerals, organic matter, micro-organisms, soils, rhizosphere, pollution

### UPR 2300 CRPG - CNRS

#### Centre for Petrographic and Geochemical Research

Director: Bernard MARTY

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Web: <http://www.crpg.cnrs-nancy.fr>

**KEY WORDS:** geochemistry, petrology, geodynamics, cosmochemistry, SARM, ionic probes, geostandards

## Molecular Chemistry

### UMR 7564 LCPME

#### Laboratory of Environmental Physical Chemistry and Microbiology

**Director:** Jean-Jacques EHRHARDT  
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**KEY WORDS:** analytical chemistry and electrochemistry, physical chemistry and spectroscopy, microbiology, chemistry of aqueous milieus, water and the environment, adhesion and aggregation of microorganisms

### UMR 7565 SRSMC

#### Structure and Reactivity of Complex Molecular Systems

**Director:** Yves CHAPLEUR  
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 Web: <http://www.srsmc.uhp-nancy.fr>

**KEY WORDS:** theoretical chemistry, molecular modelling, organised molecular systems, colloids, fluoride tensioactives and amphiphile polymers, vectorisation, reactivity, complexation, molecular recognition, organic synthesis

### FRE 2415 RMN

#### NMR Methodology Laboratory

**Director:** Daniel CANET  
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 Web: <http://www.rmn.uhp-nancy.fr>

**KEY WORDS:** nuclear magnetic resonance (NMR), biomolecules, NMR microscopy, NMR of solids, liquid state, spin relaxation, structure and molecular dynamics, methodology, instrumentation, molecular diffusion

## Biology and Health

### UMR 7561

#### Articular Physiopathology and Pharmacology

**Director:** Patrick NETTER  
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 patrick.netter@medecine.uhp-nancy.fr

**KEY WORDS:** cartilage, biomaterials, imaging, pharmacology, inflammation, glycosyltransferases

### UMR 7567 MAEM

#### RNA Maturation and Molecular Enzymology Laboratory

**Director:** Christiane BRANLANT  
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**KEY WORDS:** RNA structure, 2d - 3d function, splicing, post-transcriptional modifications, HIV, enzymology, dehydrogenase, methionine sulfoxide reductase, tuberculosis, pseudopeptides

### UMR\_A 1128 LGM

#### Genetics and Microbiology Laboratory

**Director:** Bernard DECARIS  
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 Web: <http://www.streptomyces.u-psud.fr>

**KEY WORDS:** lactic bacteria, genetic instability, streptomyces, stress response, horizontal transfer, secondary metabolism

### UMR\_A 1136 IAM

#### Tree-Micro Organism Interactions

**Director:** Francis MARTIN  
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**KEY WORDS:** microbiology, forest, tree, symbiosis, genomics, diversity

### UMR\_A 1137 EEF

#### Ecologie et Ecophysiologie Forestières

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**KEY WORDS:** environmental constraint, cellular and molecular biology, workings of the ecosystem and plant community, carbon flows and balances and water, climate change

### UMR\_S 420 EST

#### Health Work Epidemiology

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 Web: <http://www.grand-est.nancy.inserm.fr/u420>

**KEY WORDS:** epidemiology, risk, environment, work, respiration, accident

### UMR\_S EQUIPE 4 DE L'U 525 IGEMCV

#### Team 4 - Gene-Environment Interactions and Cardiovascular Diseases

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 30, rue Lionnois - 54000 Nancy  
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 visvikis@cmp.u-nancy.fr

**KEY WORDS:** cardiovascular disease, genetic epidemiology, genetics, candidate genes, intermediate phenotypes, pharmacogenomics

## Biology and Health

### EMI 0014

#### Cellular and Molecular Pathology in Nutrition Laboratory

Director: Jean Louis GUEANT  
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Tel: (33-3) 83 68 32 92 - Fax: (33-3) 83 68 32 79  
Jean-Louis.Gueant@medecine.uhp-nancy.fr

**KEY WORDS:** nutrition, B vitamins, neurodegenerative diseases, cellular biology, molecular biology, methylation

### EA 3441

#### Human Molecular Cytogenetics Laboratory

Director: Philippe JONVEAUX  
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Avenue du Morvan - 54511 Vandœuvre-lès-Nancy  
Tel: (33-3) 83 15 37 71 - Fax: (33-3) 83 15 37 72  
christian.dournon@scbiol.uhp-nancy.fr

**KEY WORDS:** chromosomal aberrations, mental retardation, RETT syndrome, positional cloning, x chromosomes, micro-deletional syndromes

### EA 3442 GSD

#### Genetics, Signalling, Differentiation

Director: Christian DOURNON  
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Tel: (33-3) 83 68 42 50 - Fax: (33-3) 83 68 42 61

**KEY WORDS:** aromatase, biology of reproduction, calcium, granulocytes, lymphocytes, crista

### EA 3443

#### Bronchial Oncogenesis: Epithelial Chemoprevention and Immuno-modulation

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**KEY WORDS:** lung, oncogenesis, retinoids, immunomodulation, epithelia, prevention

### EA 3444

#### Clinical Epidemiology, Prevention, Quality of Life

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briancon@sante-pub.u-nancy.fr  
Web: <http://www.sante-pub.u-nancy.fr/esp>

**KEY WORDS:** public health, quality of life, clinical research, chronic illness, cancer, adolescents

### EA 3445 LBBG +

#### Biochemistry of Gram+ Bacteria Laboratory

Director: Henri PETITDEMANGE  
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Tel: (33-3) 83 68 42 75 - Fax: (33-3) 83 68 42 76  
hpetitde@lcb.uhp-nancy.fr

**KEY WORDS:** clostridia, bifidobacteria, molecular physiology, cellulolysis, probiotics, anaerobiosis

### EA 3446 PROLIFERATEURS DE PEROXYSONES

#### Peroxisome Proliferators

Director: Michel DAUCA  
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dauca@scbiol.uhp-nancy.fr

**KEY WORDS:** peroxisome proliferators, PPARs, nuclear receptors, nutritional diseases, cancer, oxydative stress

## Biology Health

### EA 3447 LRC-RCA

#### Lesions – Cellular Repair – Cardiac and Arterial Remodelling – Interactions with Target Organs

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**KEY WORDS:** heart, clinical electrophysiology, vessels, ischemy, pharmacotherapeutics, cellular communication

### EA 3448

#### Physiopathology and Pharmacology of Cardio-Vascular Ageing Laboratory

Director: Jeffrey ATKINSON  
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atkinson@pharma.uhp-nancy.fr

**KEY WORDS:** brain circulation, haemodynamics, cardiovascular ageing, intracellular transduction, extracellular matrix

### EA 3449 LBSA

#### Food Biosciences Laboratory UC885 Inra

Director: Jean-Luc GAILLARD  
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Jean-Luc.Gaillard@scbiol.uhp-nancy.fr

**KEY WORDS:** proteases, structure/function relationship, lactic bacteria, thermic treatments

### EA 3450 EA RÉGULATION RESPIRATOIRE

#### Interactions of Respiratory Regulation Systems in Adults and Children: Theoretical, Experimental and Clinical Aspects

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**KEY WORDS:** asthma, ventilatory regulation, respiration, circulation, muscular afferences, chemoreception

### EA 3451 LSA

#### Animal Sciences Laboratory

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**KEY WORDS:** nutrition, food chain, animal products, milk fish, micropollutants

### EA 3452

#### Preparation and Evaluation of Materials of Therapeutic and Biological Interest

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vigneron@pharma.u-nancy.fr

**KEY WORDS:** bioengineering, biomaterials, haematology, cancerology

### EA 3453 SNCI

#### Neuromodulating Systems affecting Ingestive Behaviour. Genetics and Development

Director: Arlette BURLET  
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**KEY WORDS:** neuropeptides, hypothalamus, obesity, behaviour, specific appetites, stress



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#### SERVICE DE LA RECHERCHE ET DES ECOLES DOCTORALES

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#### SERVICE TRANSFERT ET VALORISATION

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