

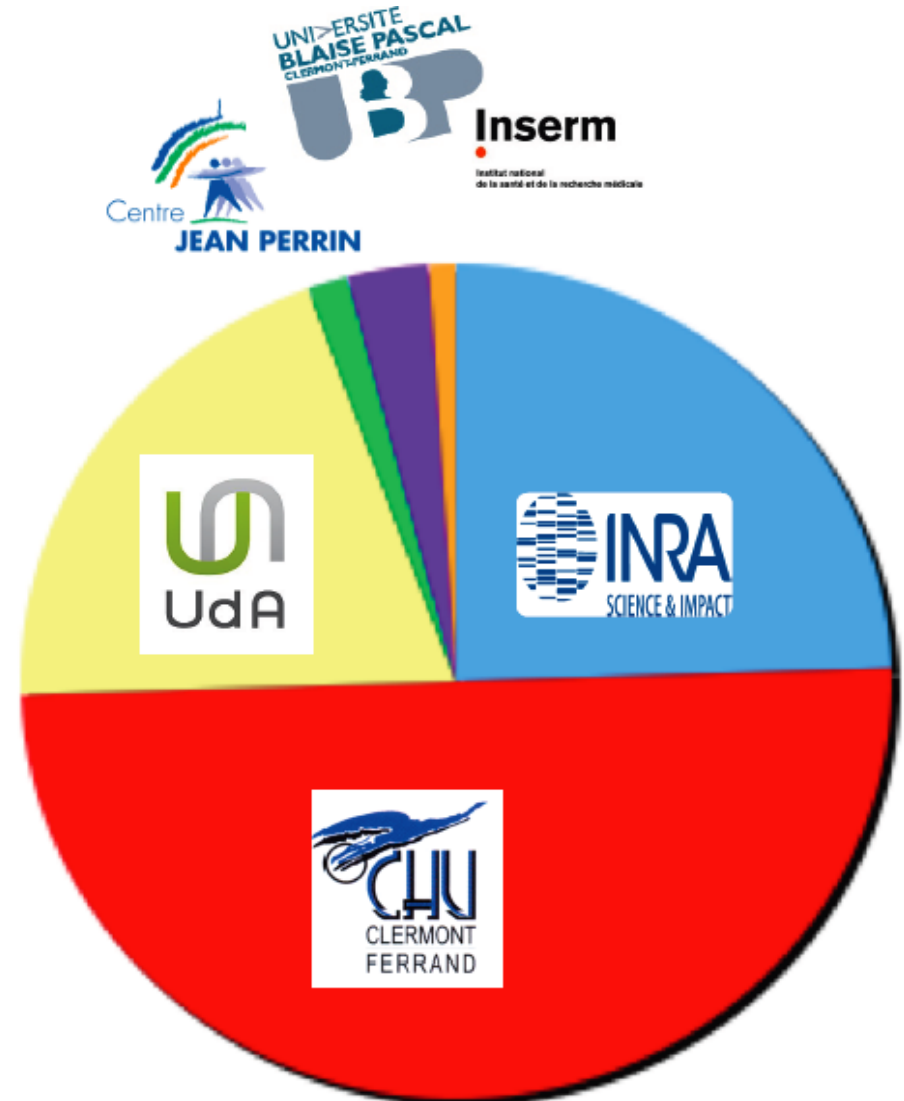
# Human Nutrition Research Centre of Auvergne

CRNH Auvergne

Prof. Noël Cano

## First Human Nutrition Research Centre in France, founded in 1992

- Eight research units
- 16 teams
- 140 scientists (including engineers)
- Nutritional Investigation Platform (NIP) for clinical studies



# Research areas

Two research areas:

- **Prevention of nutrition-related dysfunctions and diseases in the elderly**
- **Improvement of nutrition in chronic diseases**
  
- **Translational Research**
  - Nutrition Investigation Platform (NIP), University Hospital
  - French and international collaborative studies in humans
  
- **Reverse engineering**
  - Collaborative work with international companies
  - Excellence regional cluster 'Nutravita' including more than 60 research, education and industrial partners
  - Qualiment Carnot Institute led by INRA

# CRNH Auvergne structure



**CRNH Auvergne**



**Research Units**

**Nutrition Investigation  
Unit**

# Research units

UMR 1019 INRA/UdA Human Nutrition  
(Head M Ferrara, 8 teams – D Attaix,  
Y Boirie, V Coxam, P Fafournoux, A Mazur,  
JL Sébédio, B Comte, MP Vasson)

EA 3533 AME2P UBP Metabolic adaptation to  
exercise in physiological and pathological  
conditions (Head N Boisseau)

UMR 1071 Inserm / UdA / USC 2018 INRA,  
Microbes, Gut, Inflammation and host  
susceptibility (Head A Darfeuille-Michaud)

UR 454 INRA Microbiology, digestive  
ecosystems (Head R. Talon, 2 teams - R  
Talon, A Bernalier-Donadille)

UMR 1107 UdA/ Inserm Neurodol,  
Pharmacology of Digestive Pain (Head A  
Eschalier, 1 team – D Ardid)

EA CIDAM 4678 UdA Food and Drug  
Processing (Head M Alric)

UMR UdA/UBP/CNRS 6393/Inserm  
U1103 Genetics, Reproduction,  
Development (Head C Vaury, 1 team –  
JM Lobaccaro)

EA 4645 MGR UBP Mitochondrial  
Genome Repair (Head P Vernet)

## Animal facility

Multi catheterized minipigs  
Transgenic mice



# Innovative tools and platforms

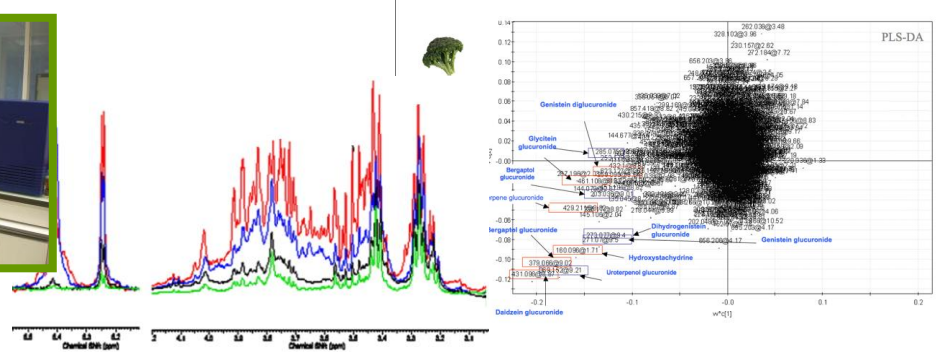
**Animal facility**



**Metabolism study platform**



**Predictive biology, biomarkers**

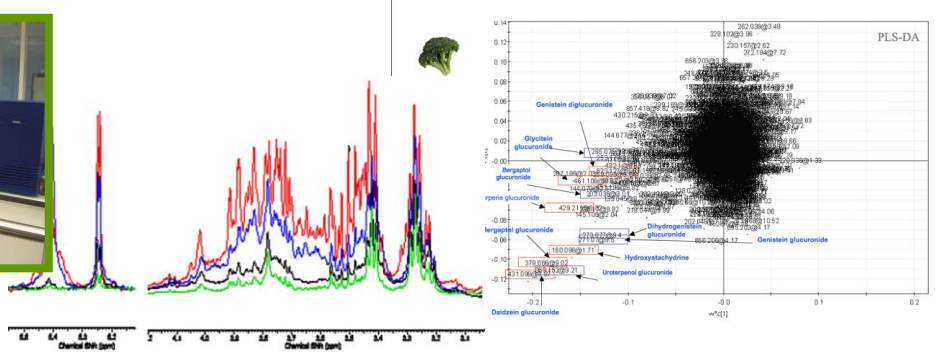


# Innovative tools and platforms

**Animal facility**



**Metabolism study platform**



**Predictive biology, biomarkers**

**Gastro Intestinal Tract modelling tools**

**DIGESTION**

**Stomach and small intestine**



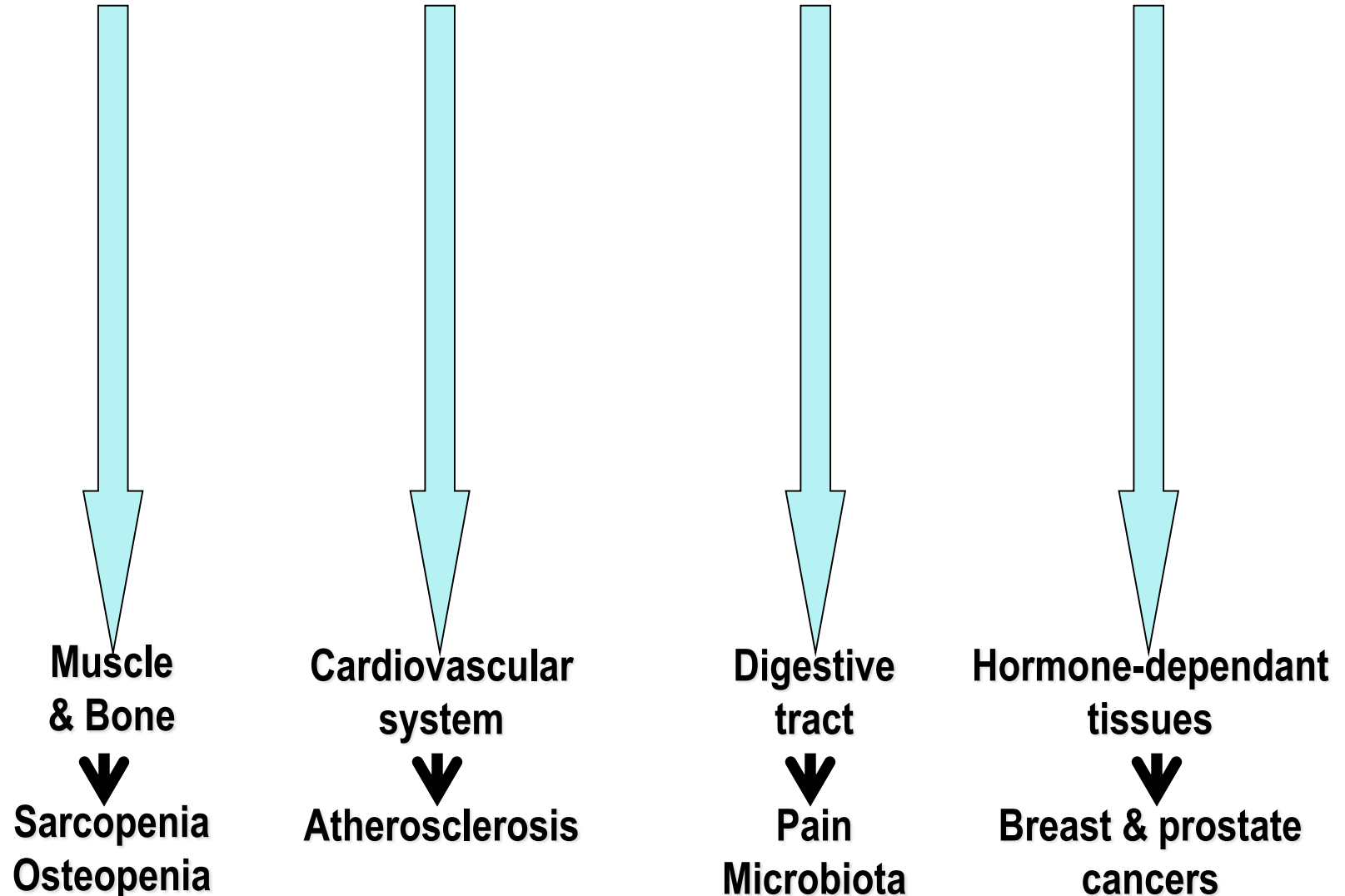
**FERMENTATION**

**Three-stage colon**

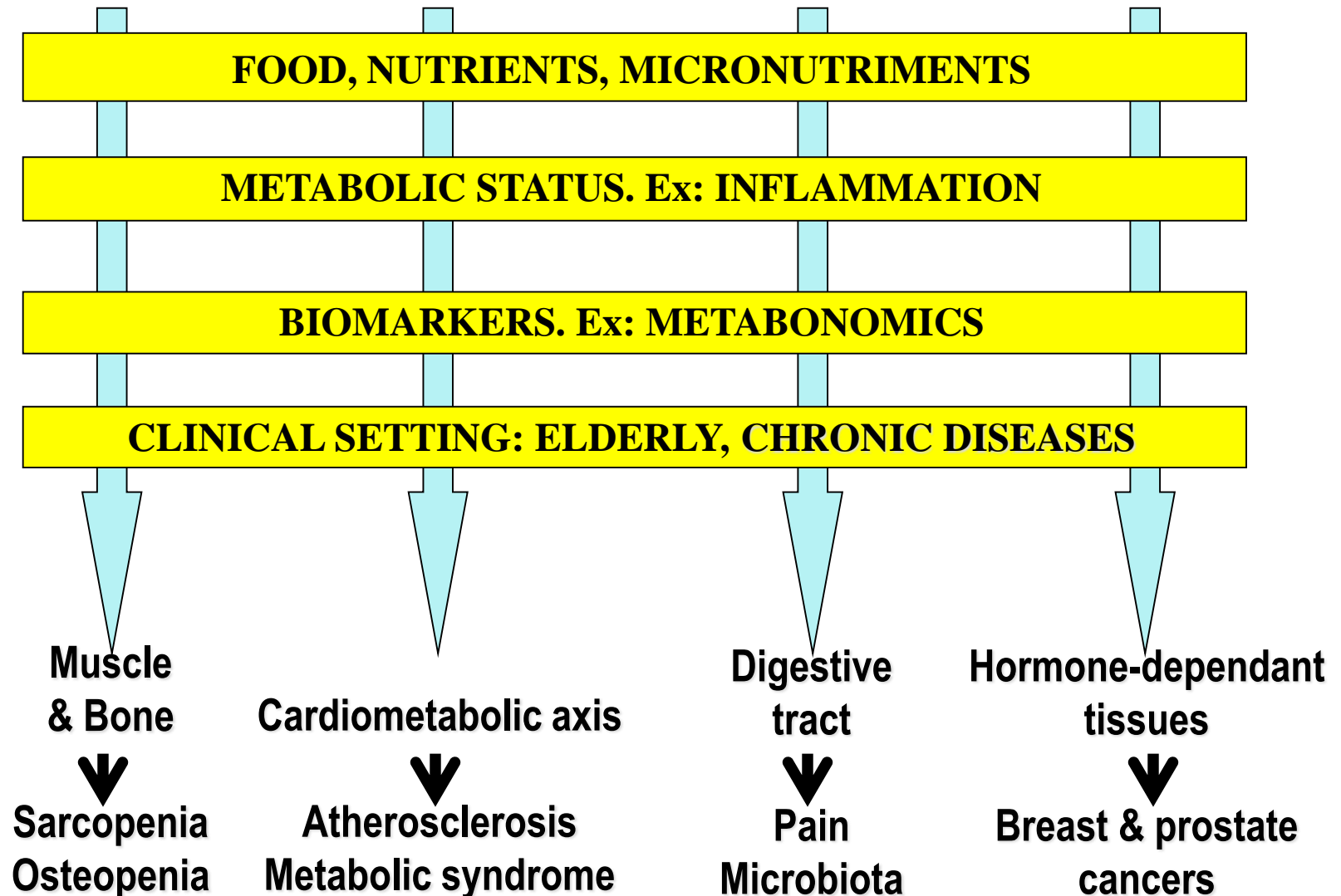




# Scientific project



# Scientific project



# Scientific project

**Cognitive research**

**Finalized research**

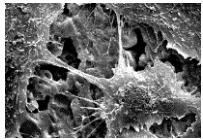


*In vitro*

Animal models

Healthy volunteers  
Patients

« Epidemiology »



Cellular  
approach

Minipig  
Rat  
Transgenic mice

Clinical studies

Quality of aging  
Disease prevention

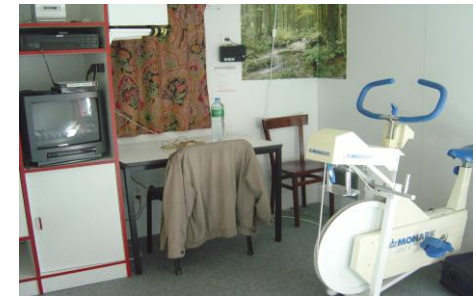
**Guidelines**

**Public health policy**

## *Full clinical research protocols*

### *Facilities : 333 m<sup>2</sup>*

- 5 investigation beds ( 2 beds for invasive investigations)
- 2 calorimetric chambers
- Metabolic kitchen



### **MD investigators**

Yves Boirie  
Noël Cano  
Nicolas Farigon  
Françoise Laporte  
Amandine Prulière

### **Quality Control**

Nathalie Meunier

### **Clin. Res. Assist.**

Nathalie Meunier  
Adeline Blot

### **Dieticians**

Aurélie Caille  
Noëlle Lyon-Belgy

### **Cook**

Guy Manhliot

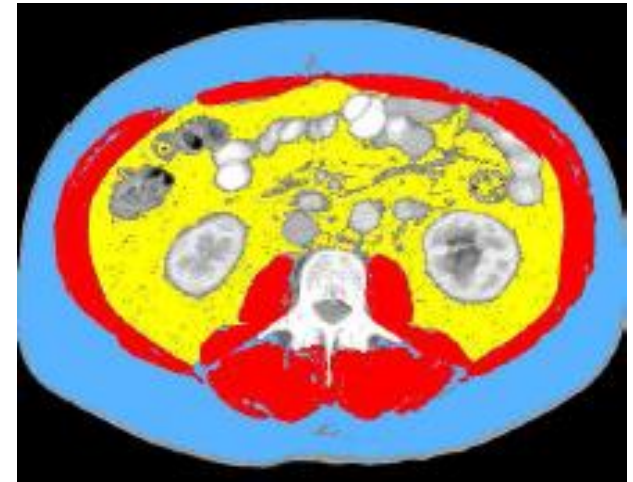
### **Nurses**

Dominique Provenchère  
Hélène Parrot

**Non permanent  
staff**

## Specificity: - Protein-energy metabolism, - Non-energy nutrients

- Dietetic evaluation
- Body composition (BIA, DEXA, CT scan)
- Energy expenditure
- Isotopic tracers
- Insulin clamp
- Whole body AA fluxes
- Upper-arm AA exchanges
- Tissue biopsies (muscle, adipose tissue)



# Clinical research funding



Nestlé



Research contract



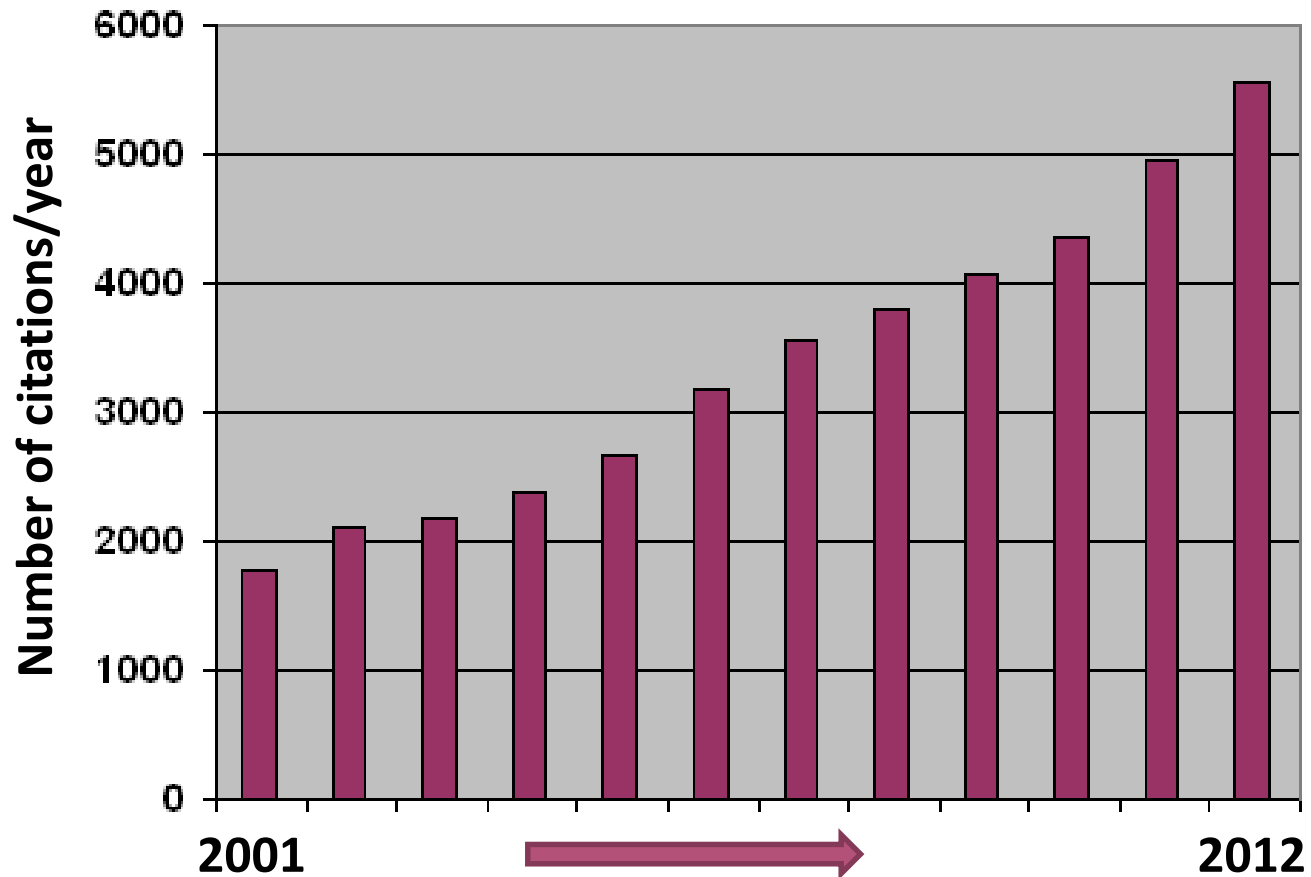
# Clinical studies

NIP investigations in 2013: 906  
Number of volunteers: 377

	Number of publications							
	2001 à 2007	2008	2009	2010	2011	2012	2013	
<b>Axe 1</b>	52	61	42	26	45	85	63	
<b>Axe 2</b>	39	33	30	28	28	24	23	
<b>Axe 3</b>	31	38	37	57	59	58	46	
<b>Axe 4</b>	14	20	50	28	19	30	35	
<b>Total CRNH A</b>	136	152	159	139	151	197	167	Including 30 (18%) with IF > 5



# Citations



# Seminars & congresses

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- Seminars (monthly)
- Summer University of Nutrition
- CRNH Scientific Day
- International Congresses of Translational Research in Human Nutrition

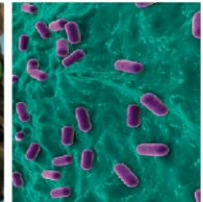
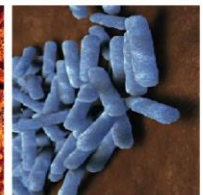
**THIRD  
INTERNATIONAL  
CONGRESS OF  
TRANSLATIONAL  
RESEARCH  
IN HUMAN  
NUTRITION**

[WWW.ICTRHN.COM](http://WWW.ICTRHN.COM)

**CLERMONT-FERRAND  
(FRANCE)**



**JUNE 5-6, 2015**



**INTESTINAL  
MICROBIOTA  
AND CHRONIC  
DISEASES**

**m&o**  
manifestations  
& organisation

**Professional Congress Organizer:**  
21, rue de la Varenne - 63122 Ceyrat (France)  
Tél: 33 (0)4 73 61 51 88 - Fax: 33 (0)4 73 61 51 39  
[i.combrisson@agence-mo.com](mailto:i.combrisson@agence-mo.com)

- 1993: CRNH Auvergne – Clermont University I
  - ⇒ complete Education cursus in Human Nutrition, organized according to the scheme of "LMD" (Licence, Master, PhD).
- To day: partnership with Clermont Université, Excellence Clusters Nutravita and Pharmabiotic Research Institute

- Licence « Science, Technology, Health », Mention « Biology, Nutrition Course »
- **Master « Science, Technology, Health », Mention « Nutrition, Health, Food » (M. Alric, Y. Boirie):**
  - 1-Human Nutrition and Health (D. Attaix)
  - 2-Development of Pharmaceutical and Nutritional Products (M.P. Vasson)
  - 3-Local Food Product companies
  - 4-Food Science

## Doctoral School of Clermont-Université

**Director: Prof. J.-M. Lobaccaro**

**Educational Council: Prof. M. Alric, Dr. D. Attaix, Prof. N. Boisseau**

- ◆ This training system based on scientific and industry skills allows developing research with food or pharmaceutical industries, or biotechnology and health partners
  
- ◆ Objectives: education
  - with sound scientific expertise in Human Nutrition
  - integrated vision from food Science to Health
  - R & D context (industry, economy, legal, and ethical issues).

# Roles in Nutrition Societies and community

## French Societies

AFN (French Association of Nutrition)

Scientific Committee: Pierre Fafournoux

SFNEP (French speaking society of clinical nutrition and metabolism)

President: Noël Cano up to december 2013

Société Francophone Vitamines et Biofacteurs

President: Edmond Rock

## International Societies

ESPEN

President of the Scientific Committee: Yves Boirie up to september 2013

International Society for Magnesium research

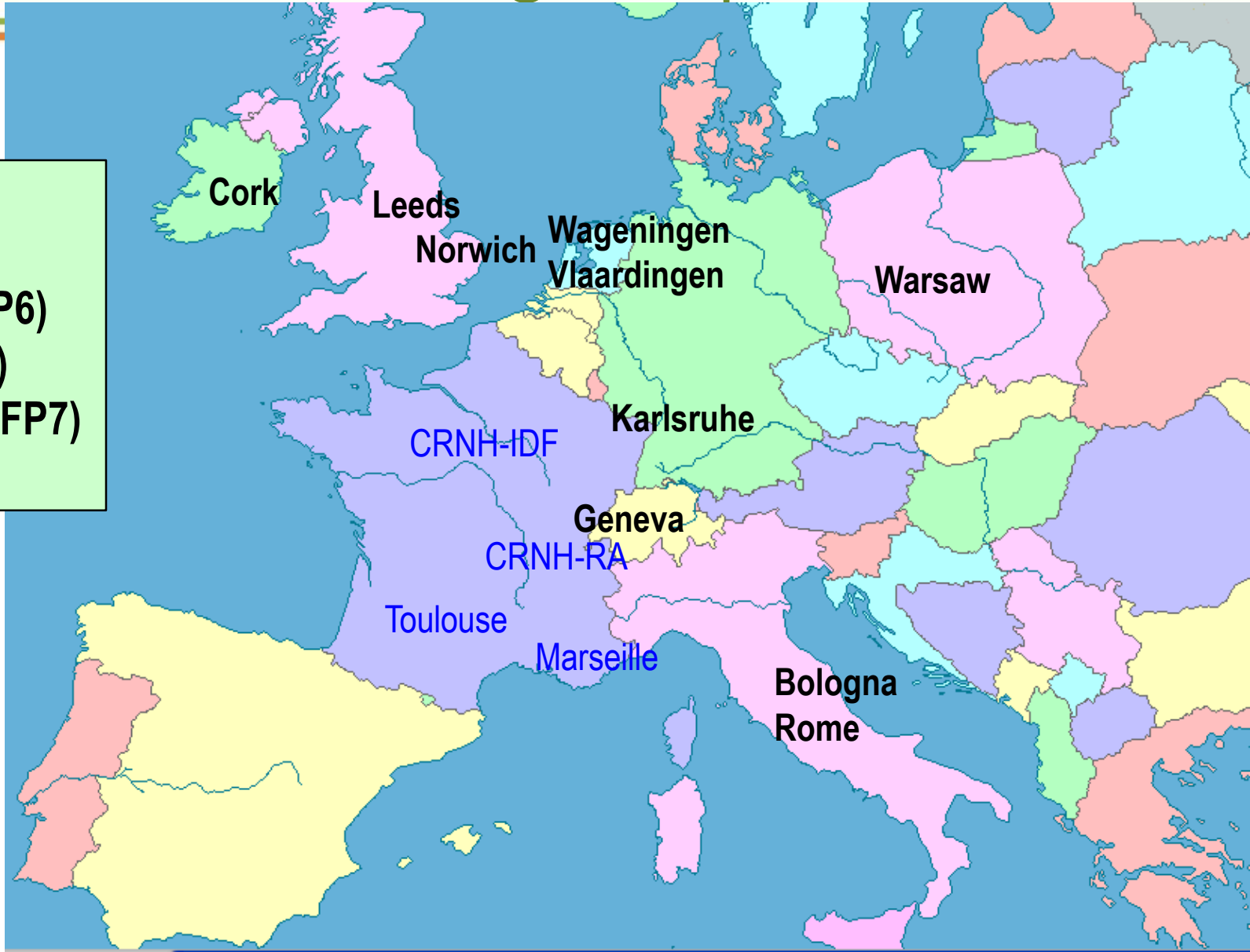
Vice president: André Mazur

**ANSES** V Coxam, P Duché, M Duclos, A Fardet, A Mazur, S Walrand

# Collaborations of the Nutrition Investigation platform

**European  
Programs**

- Optimoils (FP6)
- Nu-Age (FP7)
- Pathway-27 (FP7)
- Dream (FP7)





Thank you for  
your attention

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