

CRNH Ouest *West HNRC*

M.Krempf
(Nantes)



- ❖ **Early 90s : join venture between INRA and Nantes University Hospital**
 - ✓ *Natural or transformed carbohydrates*
 - ✓ *GI track and metabolism (Short chain fatty acids)*
 - ✓ *Human studies (GI motility, stable isotope turnover, indirect calorimetry,...)*
 - ✓ *1 INRA (food oriented) and 1 University (medicine oriented) research units*
- ❖ **1994 : Creation of the “legal” form of the Nantes CRNH**
 - ✓ *Less food science and increase of basic science*
 - ✓ *Strong emphasis on the GI track*
 - ✓ *Colonic fermentation and SCFA*
 - ✓ *Good connection with the veterinary school*
 - ✓ *Creation of Biofortis (clinical trial start-up)*
 - ✓ *1 INRA and 1 University research units*
 - ✓ *Strong supports by « Region des Pays de Loire »*

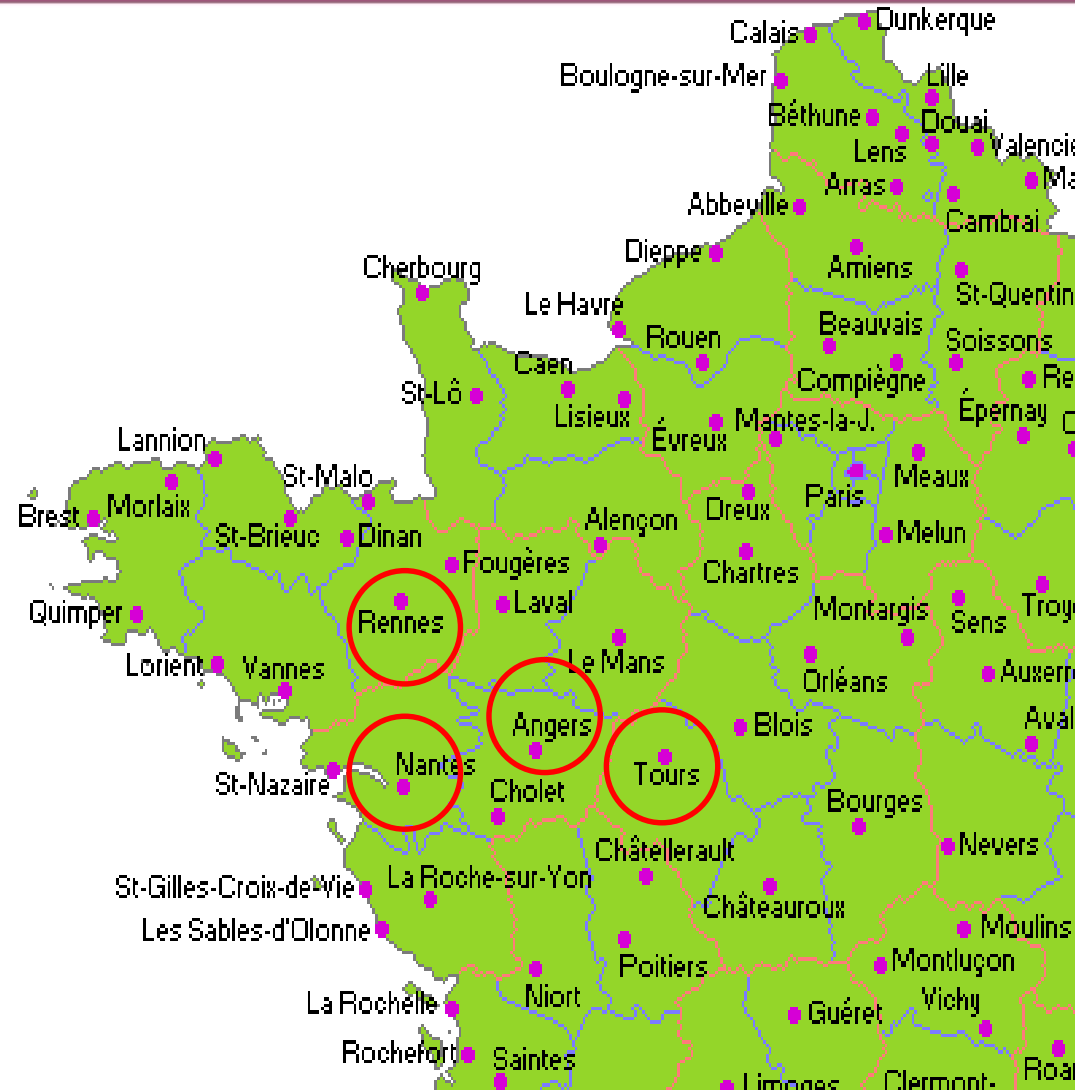


History (2)

- **2000s : Creation of basic science research units**
 - INRA unit (PHAN) moved to the hospital and enhanced basic sciences and preterm infant studies
 - University unit was split in two Inserm teams (GI and lipids)
 - Strong link with the vet school (associate member of the CRNH)
 - First connections with Angers (Inserm)
- **2012 : Organization of a research unit network in the “West”**
 - First meeting with INRA and Inserm units from Angers, Tours, Poitiers, Rennes, Brest, Rouen and Nantes. The goal was to reinforce connections and research quality and to enhance the success for grant hunting in France and EEC
 - A national scientific committee strongly encouraged the interest of a nutrition research network in the « West » restricted to Rennes, Angers, Tours and Nantes. Four major research axes were selected.
- **2013 : Creation of the CRNH “Ouest”**
 - Administrative organization
 - 1st scientific workshop to organize the international scientific evaluation and to define strategies for scientific enhancement and to increase contacts with local state organizations giving financial supports.

Why Nantes' CRNH became CRNH "Ouest" ?

- 1. 1st region in France for food production. Most of French small food companies are located in Pays de Loire and Brittany**
- 2. Good connection between research teams**
- 3. Around 210 researchers**
- 4. To enhance the possibility to be involved in big national or EEC programs**



CONTACTS CRNH OUEST (17/02/14)

INRA/Université, UMR 1280, PhAN, Nantes

INRA, UR 1268 BIA,
Nantes

INRA, UR ADNC, Rennes

INRA/Agrocampus Ouest, UMR 1253, STLO, Rennes

INRA, USC 2012, Rennes

INSERM, U913, Nantes

INSERM UMR 1087 "l'Institut du thorax", Equipe 5,
Nantes

INSERM, UMR 1087 "l'Institut du thorax", Equipe "Pneumologie et Allergies" Nantes

INSERM U892, Nantes

INSERM, U1063, Angers

INSERM U1069, Tours

Plateforme Transversale d'Allergologie (PFTA), Hôtel-Dieu, CIC Thorax, Institut du thorax, CHU de
Nantes

CHU, Unité Allergologie générale, Angers

UNE, ONIRIS, Nantes

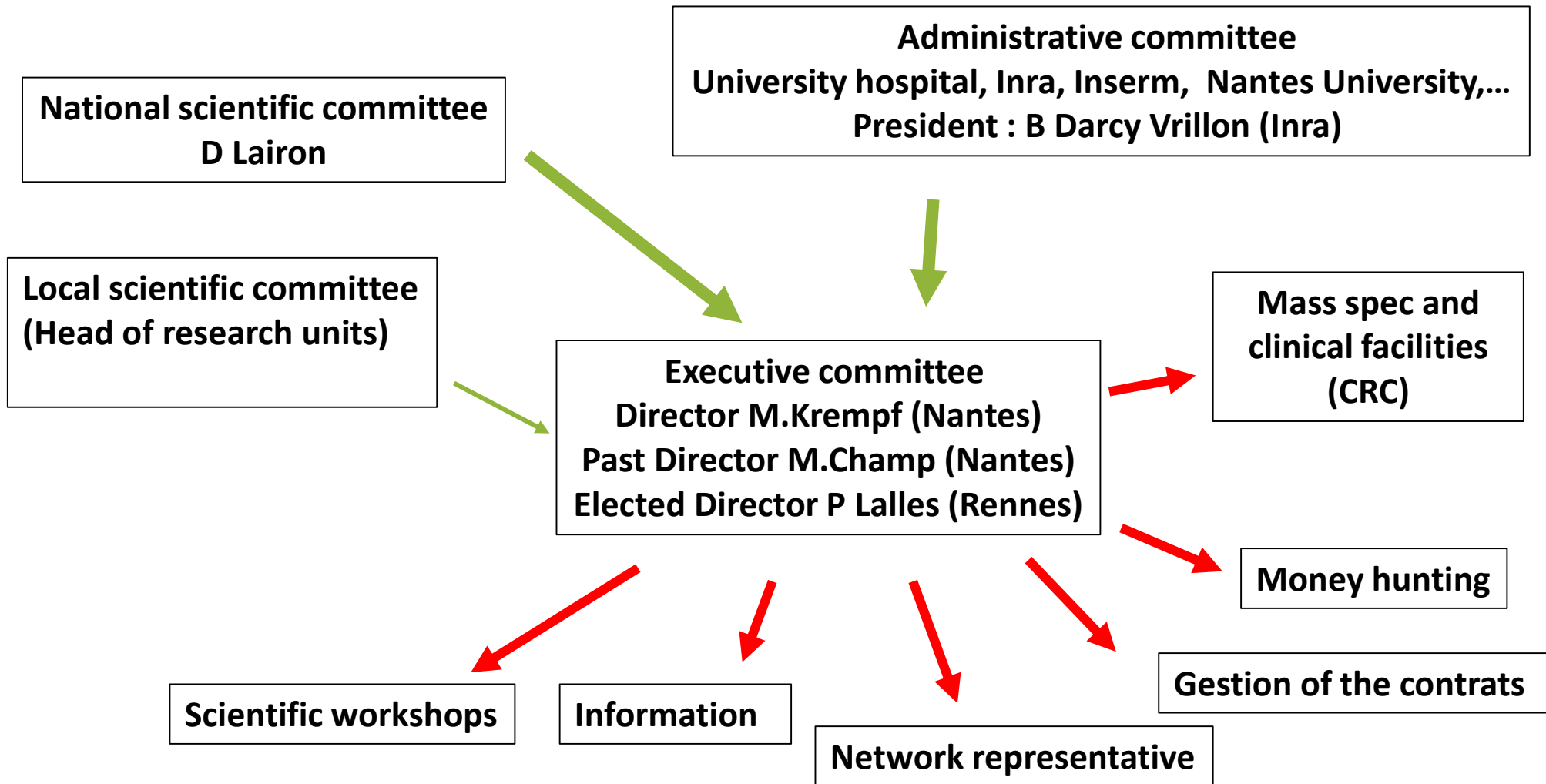
EA 2160 Mer Molécules Santé-Institut Universitaire Mer et Littoral FR3473 CNRS, et Institut de Cancérologie de l'Ouest (ICO),
Nantes

ANAFORCAL pays de la Loire, Rasema

Unité Transversale d'Allergologie Immunologie Clinique, Tours

14 labs / 210 researchers

Organization



Does CRNH really help ?

- The story started from Nantes with 1 INRA unit (food sciences) and few clinicians, now 14 units are involved in 4 towns
- Strong enhancement in basic sciences
- Enhance the connection between researchers and with other local networks (genomic, cancer...)
- Strong impact on financial support from the local authorities
 - Equipments (mass spectrometry...)
 - Research programs
- Help to define and focus on specific scientific goals

Research topics

- 1. Perinatal nutrition**
- 2. Nutrition and the central and enteric nervous system**
- 3. Nutrition and Chronic diseases (cancer and atherosclerosis)**
- 4. Food Allergy**

- Nutrition of pregnant mothers and infants: “ how nutrition during pregnancy and early life can change the adult health ?”
- Model : premature infants and low birth weight (IUGR)
- Two organ targets: GI and brain
- Main contribution: dietary protein restriction during pregnancy and early life strongly impact adult health
- Strong connections with human nutrition (pediatric department)
- 5 Research Units (28 researchers)
- Leaders: D Darmaun and P.Parnet

Central and enteric nervous system in the newborn and adult (Nantes, Rennes)

- Role of components of the ENS (neurons, glial cells) in the control of digestive functions and control of motor functions
- Impact of perinatal nutrition (undernutrition and obesogenic diets) on gut-brain axis development
- Food and brain functional imaging related to pleasure or aversion in rodents and big animal models
- Main contribution: Brain and gut nervous systems are “similar” and connected
- Connection with GI clinical department
- 3 research units and 18 researchers
- Leaders: M.Neunlist, D Vail-Laillet

- Breast cancer and PUFA (progression and response to treatment)
- Main contribution: better response to chemotherapy with DHA
- Phase III trial with PUFA is ongoing in patients with metastasis of breast cancer
- 2 research units, 16 researchers
- Leader: S Servais

Chronic diseases – Atherosclerosis and CV risk factors (Angers, Nantes)

- Nutrients and cardio-metabolic vascular risk (polyphenols,...)
- Impact on lipid profile or kinetics (TICE, in vivo lipoprotein and cholesterol turnover,...)
- Impact on other biomarkers (microparticules, TMAO...)
- Main contribution: further understanding of the effect of dietary polyphenols
- 4 research units and 24 researchers
- Leader: K Ougueram and C Andriantsitohaina

- For a better understanding of the mechanisms leading to the passage of food allergy to respiratory allergy
- To test the preventive role of the two types of allergy prebiotic oligosaccharides and assess the role of both types of allergy vaccination with specific DNA allergens
- Main contribution: respiratory allergy
- Strong contribution of clinical departments
- 2 research units and 8 researchers
- Leaders: A.Magnan and M.Bodinier

- **Website:** We do not expect to become a MOODLE provider but we can put on line most of the resources created by the CRNHs' members. Slide show presented during lecture, learning courses ... could be put on line as well as revue papers or publications in respect with the copyright regulation. We can also develop a WIKI devoted to nutrition in order to help students to get reliable information. This last goal is very challenging and needs funding.
- **Summer class:** We will extend the summer program developed a few years ago by the Auvergne CRNH. Our goal is to give knowledge on basic research techniques and information on more advance methods to students training in basic or clinical Nutrition. Besides the improvement in background knowledge, this will be also an opportunity to meet advanced researchers and to create a better network between the growing fellows and raising stars. This program could be linked to EEC courses.
- **Master class and e-workshop:** On the same line of the summer class, we will set up two or three times / year master classes devoted to new and advanced techniques and targeting senior researchers. We will also try to organize web or video transmission between CRNHs of the lectures giving by outstanding invited speakers followed by a small e-meeting on the "meet the expert" model. This last part will be restricted to researchers strongly related to the discussed field.

SWOT ANALYSIS

	Helpful to achieving the objective	Harmful to achieving the objective
Internal origin (attributes of the organization)	S Strengths	W Weaknesses
External origin (attributes of the environment)	O Opportunities	T Threats



**CENTRES DE RECHERCHE
EN NUTRITION HUMAINE**