

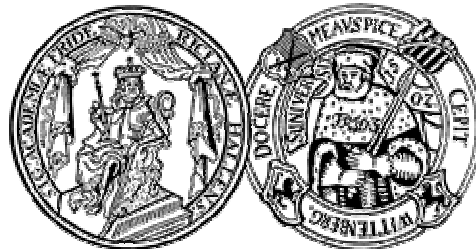


**BEE SHOP -**

**A European Research Network**

**Robin F. A. Moritz**

**Martin-Luther University Halle-Wittenberg**





**The Commission called**

**to save honey consumers, beekeepers  
and honeybees in Europe**



the **BEE SHOP** came



## **BEes in Europe and Sustainable HOney Production **BEE SHOP****

### List of main partners

- 1 Robin F.A. Moritz, Martin-Luther-University Halle-Wittenberg
- 2 Ingemar Fries , University of Agricultural Sciences, Uppsala
- 3 Robert Paxton, Queen's University, Belfast
- 4 Martin Giurfa, University Paul Sabatier, Toulouse
- 5 Michel Solignac, University Paris Sud, Orsay
- 6 F.A. Tomás-Barberán, CEBAS (CSIC), Murcia
- 7 Peter Rosenkranz, University Hohenheim, Stuttgart
- 8 Jozef Simuth, Slovak Academy of Science, Bratislava
- 9 Anna Gloria Sabatini, National Institute of Apiculture, Bologna
- 10 Dalibor Titera Bee Research Institute, Dol (BRI)



**A department store for  
honeybee research**



## Four departments of the BEE SHOP

### **Pathology**

*Uppsala  
Belfast  
Hohenheim*

### **Honey Quality**

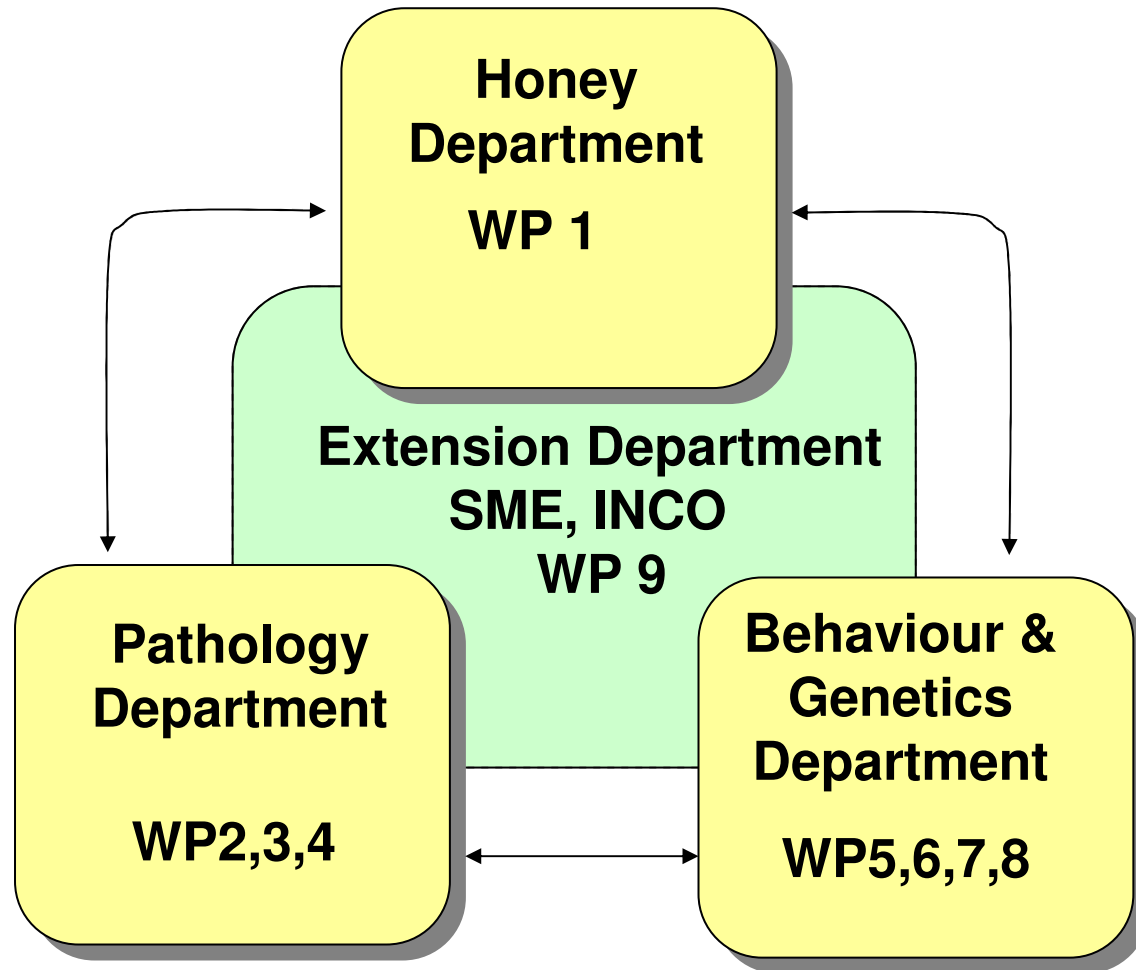
*Murcia  
Bratislava  
Bologna*

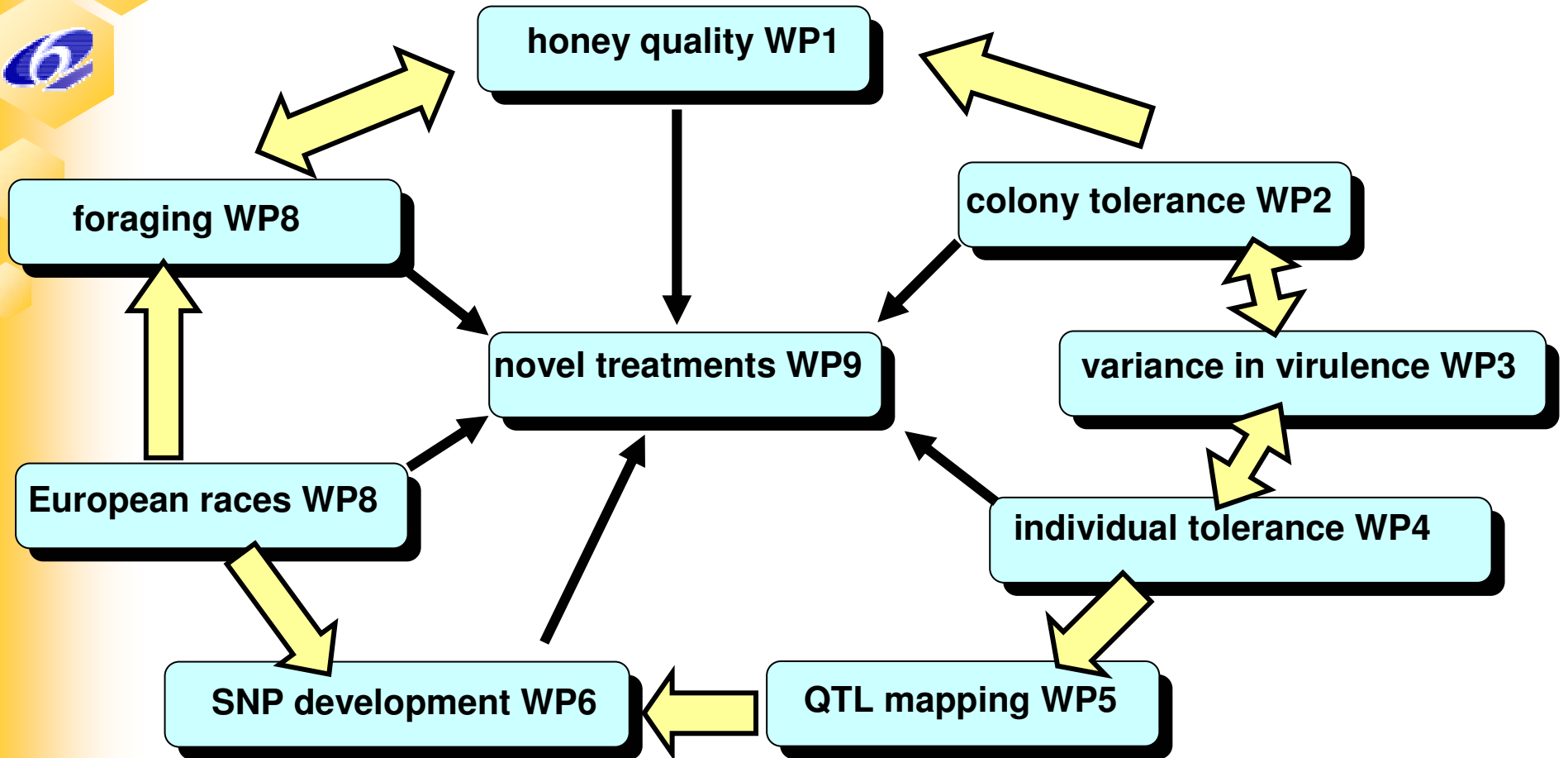
### **Behaviour & Genetics**

*Halle  
Paris  
Toulouse*

### **Extension**

*Dol + others*









## **WP 1 Authenticity and quality of honey**

### **Objectives**

- 1) establish a new methodology to promote authentic, high quality European honey production.**
- 2) characterize properties of honey which prevent honeybee diseases.**
- 3) develop a tool to verify the origin of the producing honeybee colonies.**





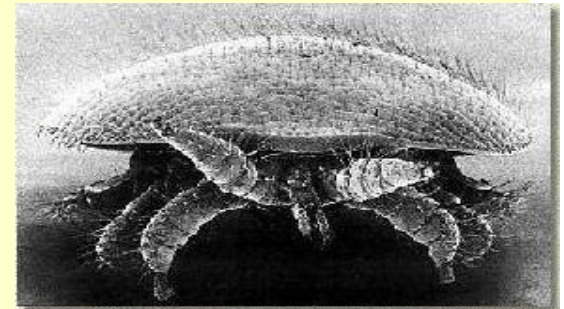
## WP 2 Mechanisms of pathogen transmission and disease tolerance of colonies

**Objectives**  
elucidate mechanisms of

**1) pathogen transmission, and**

**2) disease tolerance of honeybee colonies**

**for AFB, *Varroa* mites, and virus  
Infections associated with *Varroa*  
infestations.**



female *V. destructor*



Spore of  
*Paenibacillus larvae*



## **WP 3 Variance among pathogens**

### **Objectives**

- 1) to characterise genetically the different variants of the major honeybee pathogens in the EU whose treatment results in pesticide contamination of honey (AFB, *Varroa*, *Varroa*-transmitted viruses)**
- 2) to develop methods to quantify those variants.**
- 3) to correlate those variants with virulence at the level of the individual bee and colony**



## **WP 4 Variance in disease tolerance among honeybees at the individual level**

### **Objectives**

**To determine mechanisms that cause disease tolerance of individual drone larvae and adults**





## **WP 5 Mapping QTL genes for disease resistance**

### **Objectives**

**1) to conduct the mapping and identification of potential major genes, which control the disease resistant phenotypes identified by the extension partners.**

**2) to identify these Quantitative Trait Loci (QTL) by taking advantage of the haploid genotypes of males and with aid of the genome sequence data.**

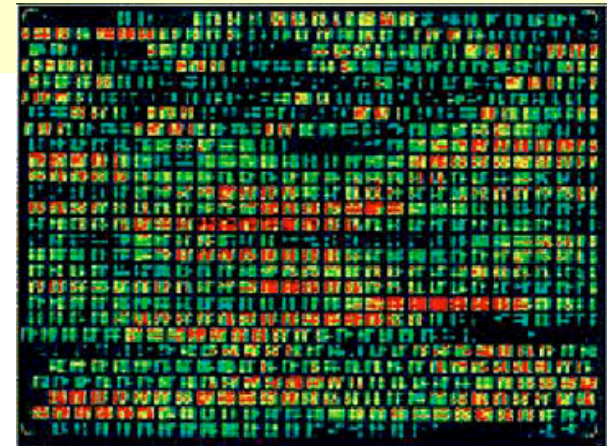


## WP 6 Developing SNP markers for disease resistance

### Objectives

1) to develop single nucleotide polymorphisms in target genes identified in WP5.

2) to develop a DNA-chip based system, which will allow rapid and cost efficient screening of large sample sizes



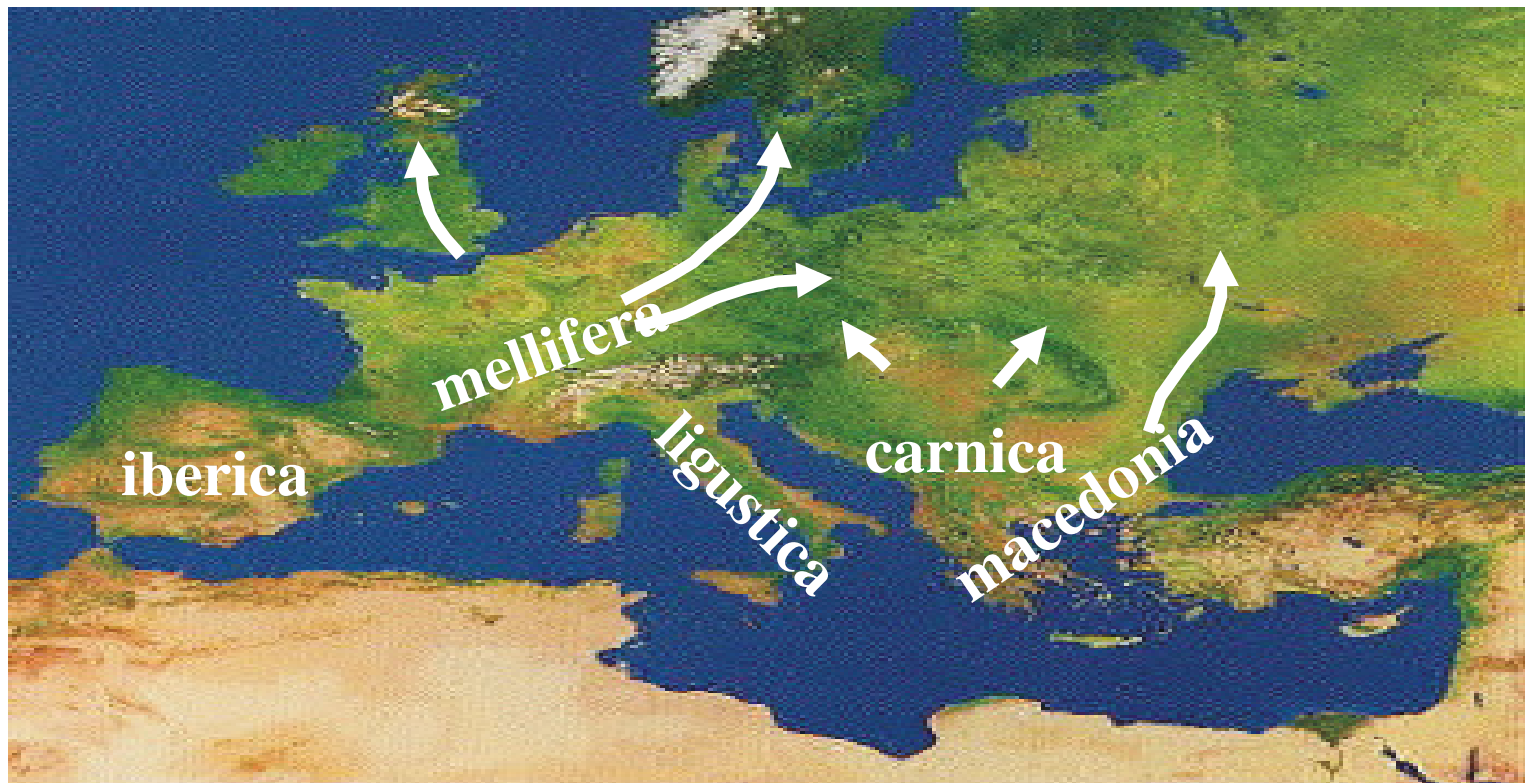


## WP 7 Sustaining European Honeybee Races



### Objectives

to maintain and enhance the role of European honeybee strains





## **WP 8 Foraging behaviour and contamination of honey with agrochemicals**

### **Objectives**

**to establish aversive learning as a tool to reduce foraging of contaminated nectar**

## **WP 9 Novel treatments for reducing residues**

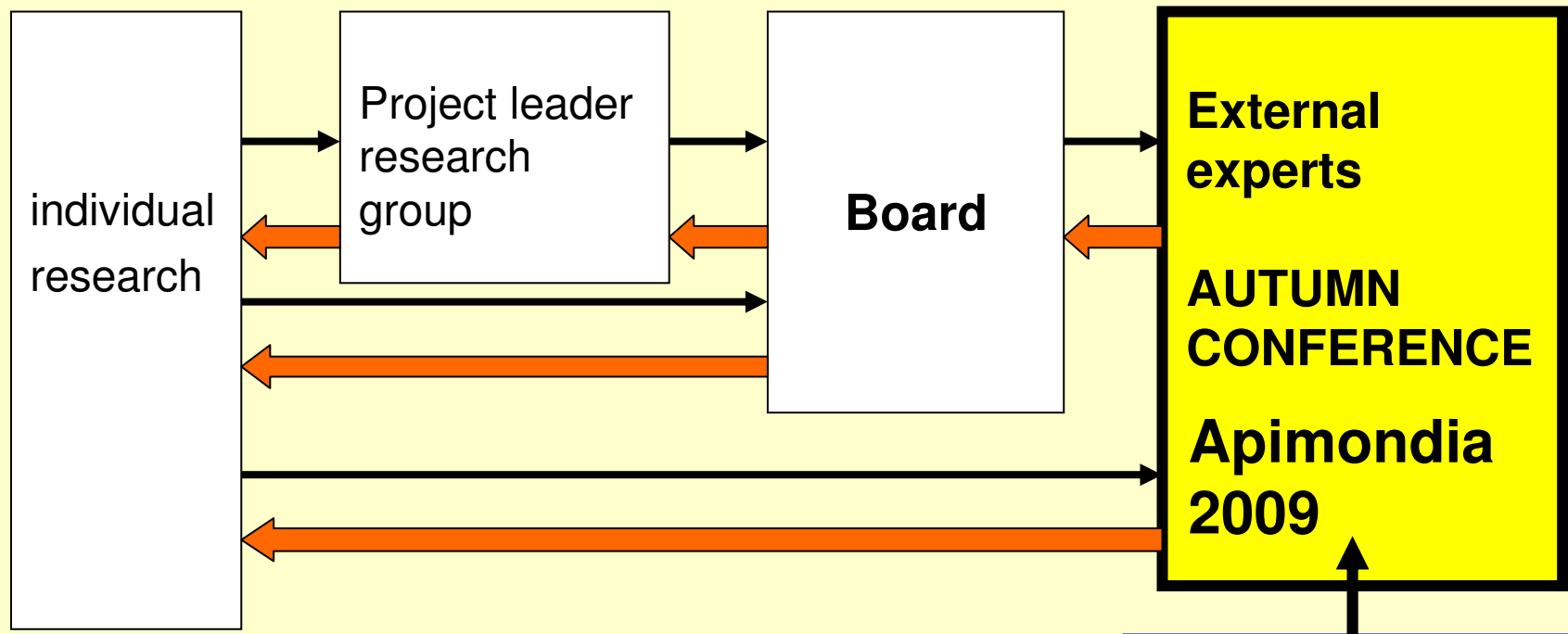
### **Objectives**

**To develop novel beekeeping techniques to reduce chemotherapy for target diseases**



## ***Quality control in the BEE SHOP***

The individual researcher will receive individual feedback (open arrow) from every control level.



**YOU ARE HERE**