

Synthetic Biology present & future  
a view from Genopole  
François Képès & Françoise Russo-Marie



Genopole, a Bio-Park created in 1998  
with 2 missions



**To promote Research in genetics,  
genomics and post genomics.**

**To implement a Technopole fostering  
creation and development of  
biotechnology companies.**

# Genopole, N° 1 French Bio-Park



## The score so far

	1997	2008
• Academic Laboratories (933 employees)	2	20
• Biotech Companies (1023 employees)	3	69
• Large scale facilities	0	19
• Funds raised by Companies (M€)	0	208
• Total headcount		
Direct	411	2293
Indirect	1000	6000
• Molecules or biotherapies ongoing preclinical & clinical trials	0	28
• Real estate offer (m <sup>2</sup> )	19000	87298

# Our mission



University

Academic  
research

Incubator  
&  
biotech

hospital

## Rely on Genomics centers

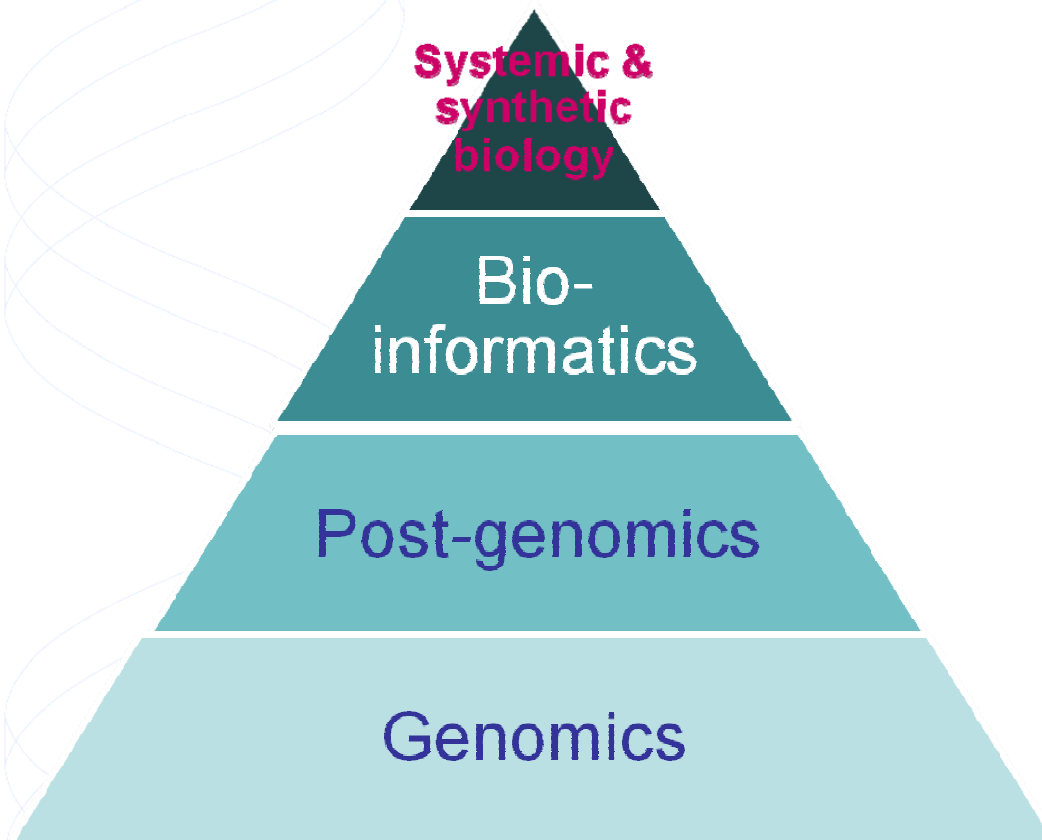
- National Sequencing Center
- National Genotyping Center
- Genethon (Gene therapy)
- Genoplante Program (Inra)

## Rely on strong academic partnerships

- UEVE (University), CNRS, CEA, INSERM, INRA (4 research institutes)

## Extend the partnerships when appropriate (PSEVS)

- ❖ TMSP, ENSMP, ENSIIE (3 engineers schools: IT, Materials, Electronics, Management)
- ❖ CHSF: the Hospital (1000 beds)



- **Creation of an Institute for Stem Cells (2005)**
- **Creation of an Institute of Systems and Synthetic Biology (2009)**
- **Creation of an Institute for Biomaterials (2010)**
- **Creation of a Center for Clinical and Translational Research (2011)**

## **Why SSB at Genopole**

## **Education and training**

## **The research**

## **The core facilities**

## **The industrial perspectives**



### Epigenomics Project:

2000: Inception & cooperation with IHÉS  
2003: Physical space  
2006: Increased operations and space  
2010: Move in new building, pending Genopole® funding



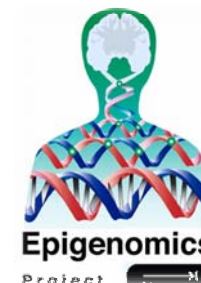
**Systems Biology: 1999**  
**Synthetic Biology: 2005**



Scientific Director: François Kepes (CNRS)  
Scientific Adjunct Directors: Vic Norris (Univ Rouen); Gilles Bernot (Univ Nice)

### Activities:

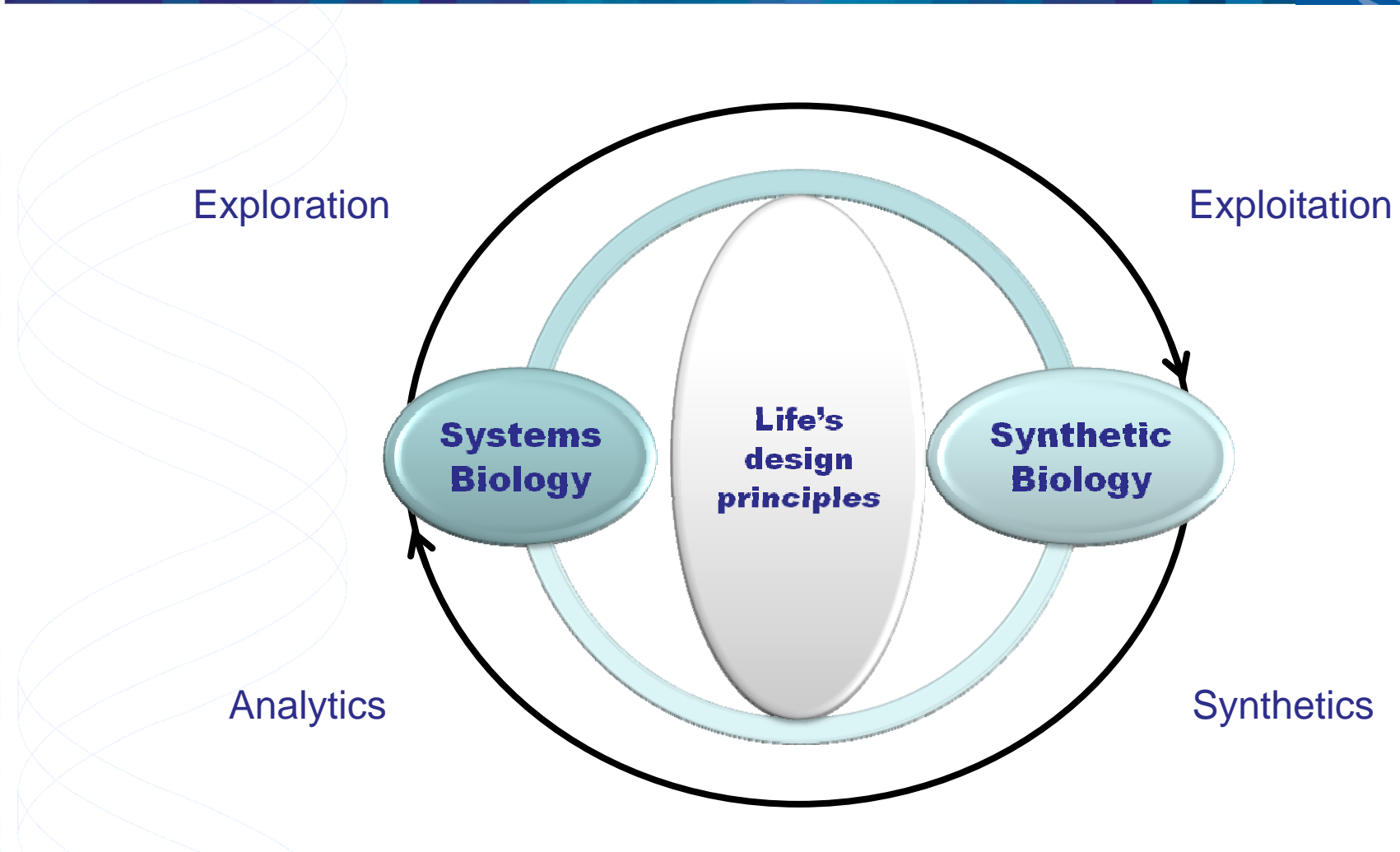
Research Network  
(9 virtual laboratories)  
Visitor's Programme  
Scientific Events Programme  
(~75 effective days per year)



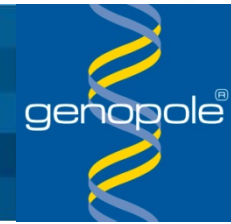
### Partners:

France: Évry, Bordeaux, Montpellier, Brest, Rouen, Nice, Lyon, Grenoble, Orsay, Paris,  
Foreign: UK, Spain, Belgium, ...





# The partners for iSSB



## **Why SSB at Genopole**

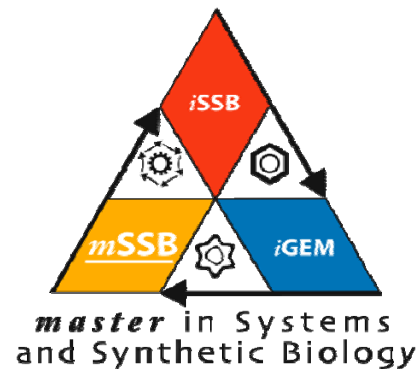
## **Education and training**

## **The research**

## **The core facilities**

## **The industrial perspectives**

**2010: Opening**



***Partners:***

**PRES UniverSud Paris: ECP, AgroParisTech; Telecom Sud Paris  
Europe: Negotiations with European partners**

## **Why SSB at Genopole**

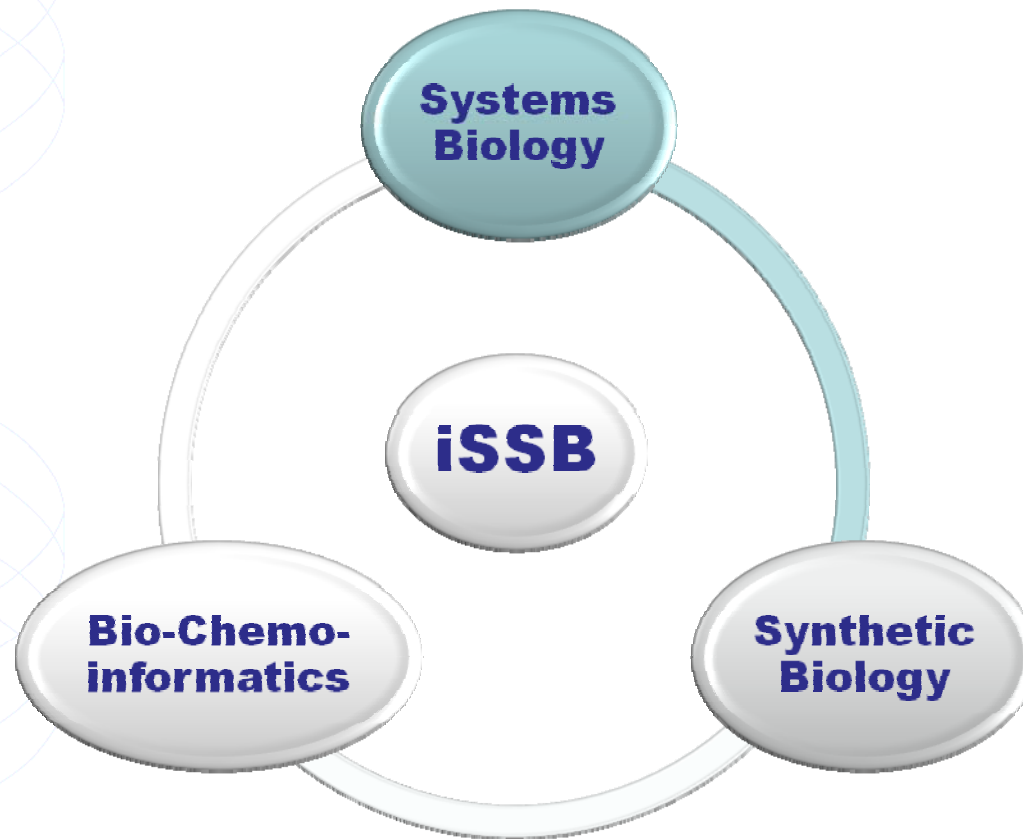
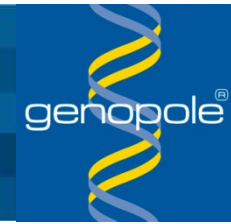
## **Education and training**

## **The research**

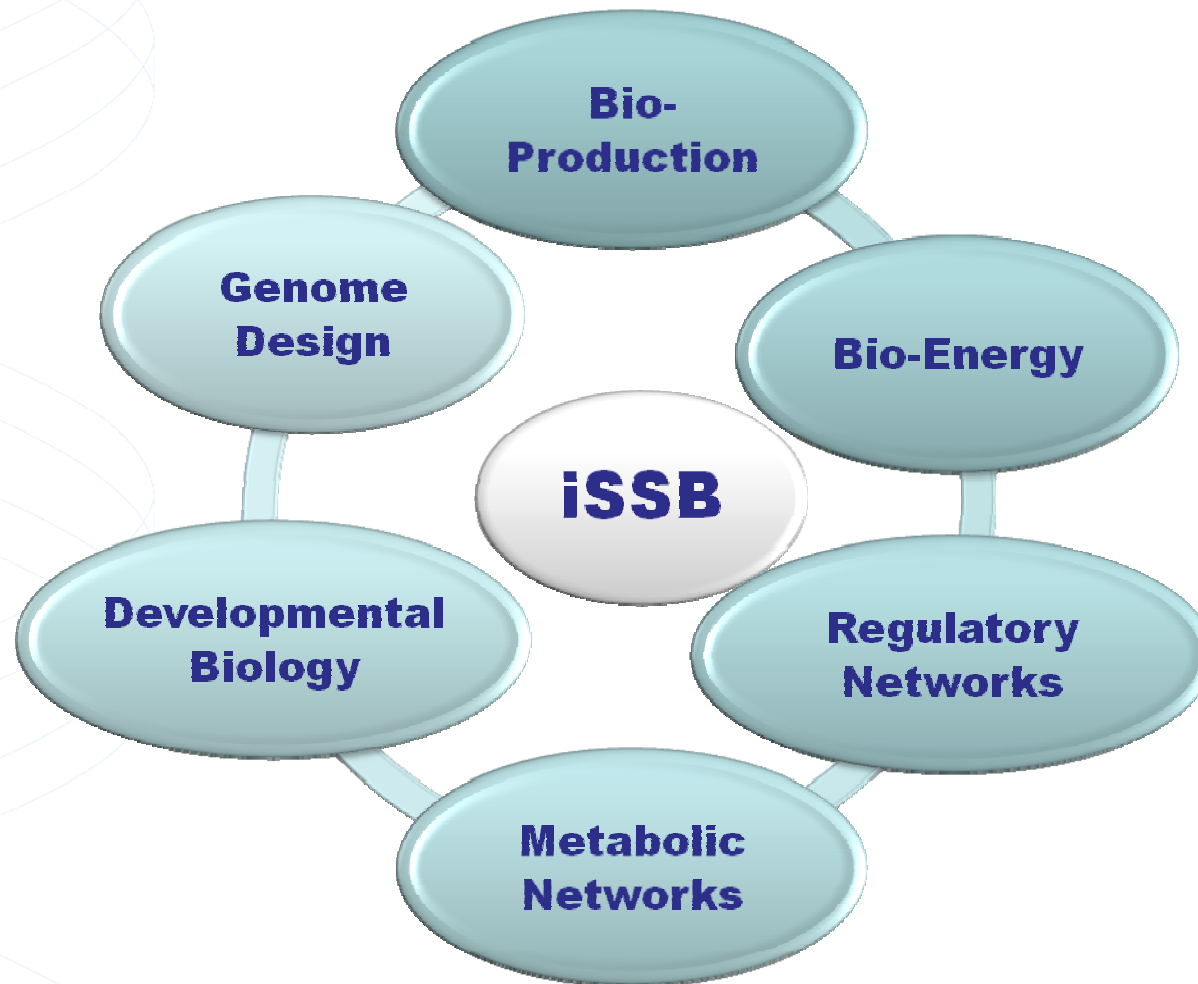
## **The core facilities**

## **The industrial perspectives**

# Teams: Subdisciplines



# Teams: Objectives



# The research teams



## Metamorphosys

- P.I.: **Nicolas POLLET**
  - Team (ATIGE 2007)
- CR1**      **CNRS UPS3201**      **since Jan 2009**  
**9 people**      **Epigenomics Project**      **since March 2007**

## Modelling and Engineering Genome Architecture

- P.I.: **François KEPES**
  - Team
- DR2**      **CNRS UMR8071**      **since Feb 1999**  
**9 people**      **Epigenomics Project**      **since Feb 1999**

## Synth-Bio

- P.I.: **Alfonso JARAMILLO**
  - Team (ATIGE 2008)
- CR1**      **(Epigenomics Project)**      **since Jan 2009**  
**9 people**      **Epigenomics Project**      **since March 2008**

## Metabolic Engineering for Bioproduction

- P.I.: **Jean-Loup FAULON**
  - Team (ATIGE 2009)
- PR2 UEVE**      **CNRS UMR8030**      **since Sept 2008**  
**8 people**      **Epigenomics Project**      **since April 2009**



**Why SSB at Genopole**

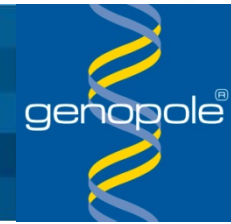
**Education and training**

**The research**

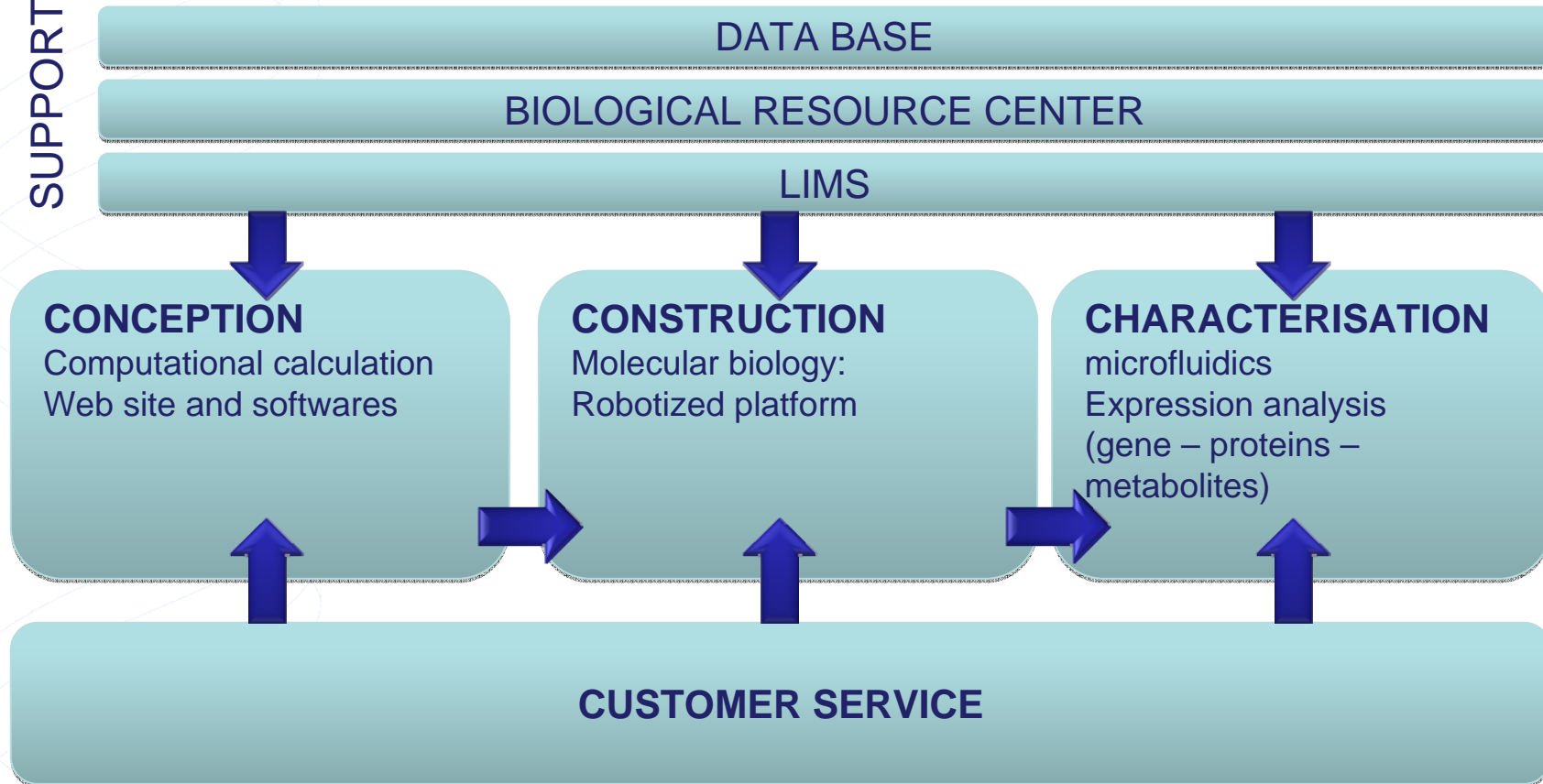
**The core facilities**

**The industrial perspectives**

# The core facilities



SUPPORTS



## **Why SSB at Genopole**

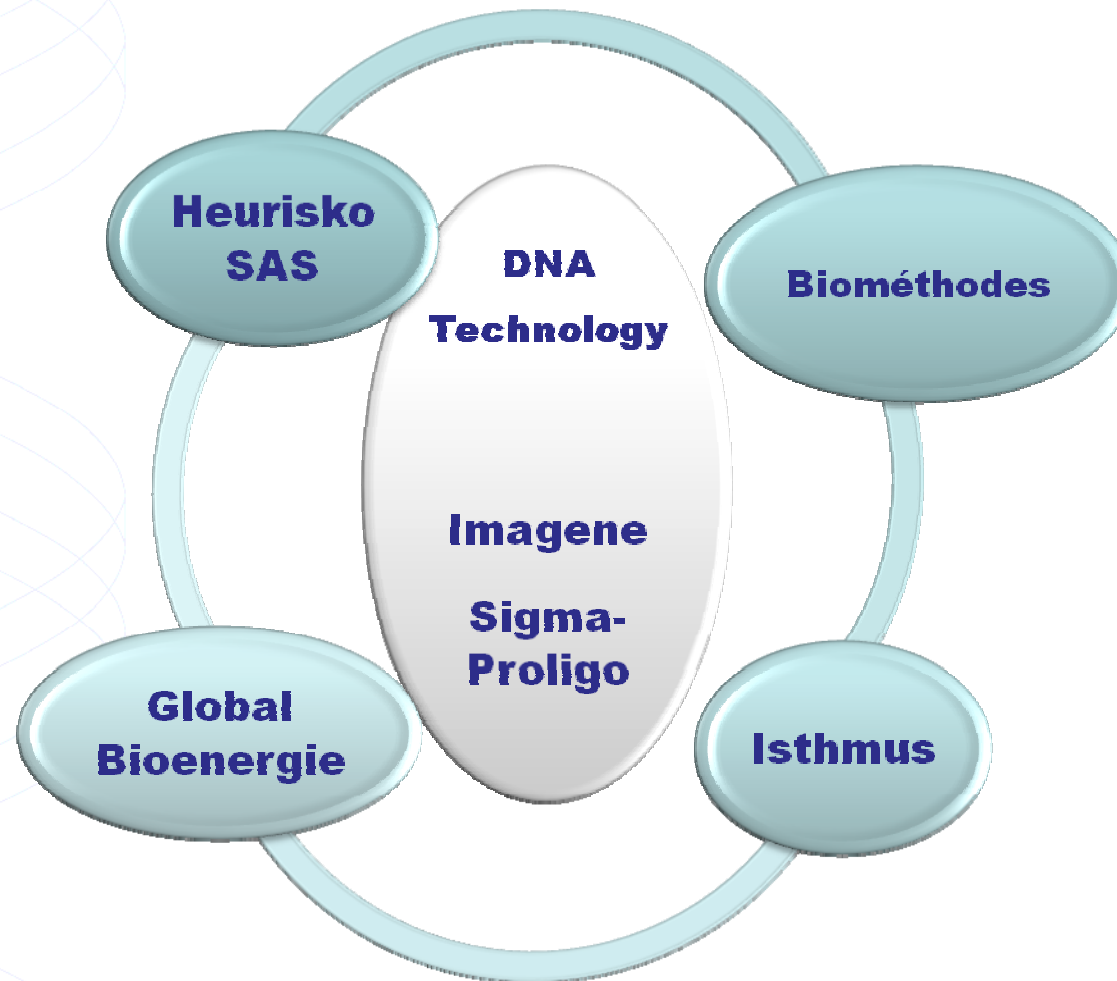
## **Education and training**

## **The research**

## **The core facilities**

## **The industrial perspectives**

# The SME/Biotech



# Synthetic Biology present & future ???





» This paper was produced for a meeting organized by Health & Consumers DG and represents the views of its author on the subject. These views have not been adopted or in any way approved by the Commission and should not be relied upon as a statement of the Commission's or Health & Consumers DG's views. The European Commission does not guarantee the accuracy of the data included in this paper, nor does it accept responsibility for any use made thereof.

