

# HealthBIO in Helsinki Region 2008

BioSA Workshops in South Africa, 31.3 – 2.4.2008

Riikka Paasikivi  
Program Director  
Culminatum Ltd Oy  
Helsinki, Finland



- Over 1.2 million inhabitants (population in Finland over 5.2 million)
- 16 universities and polytechnics
- More than 60,000 companies
- 30% of jobs of Finland as a whole

**University of Helsinki** - 11 faculties, About 40.000 degree students, 7.500 staff.  
Annually 4000 masters and 350 doctorates degrees

## **University of Technology**

Helsinki Metropolitan Area is a constantly developing world-class business and innovation centre **based on the power of science, art, creativity and learning ability** whose success benefits the region's inhabitants and all of Finland.

Helsinki Metropolitan Area is developed as an integrated functional entity being **good environment to live, learn, work and do business.**



## BASIC RESEARCH STRONG POINTS

- Molecular medicine and molecular biology / FIMM
- Cancer research
- Neurosciences and brain research / Neuroscience Center
- Drug discovery and development
- Pharmaceutical technology
- Clinical research / HUS, largest Hospital district
- Diagnostics and instrumentation
  
- Strong basic research (about 50% of basic research financing to Helsinki)

# Campus areas in Helsinki Region

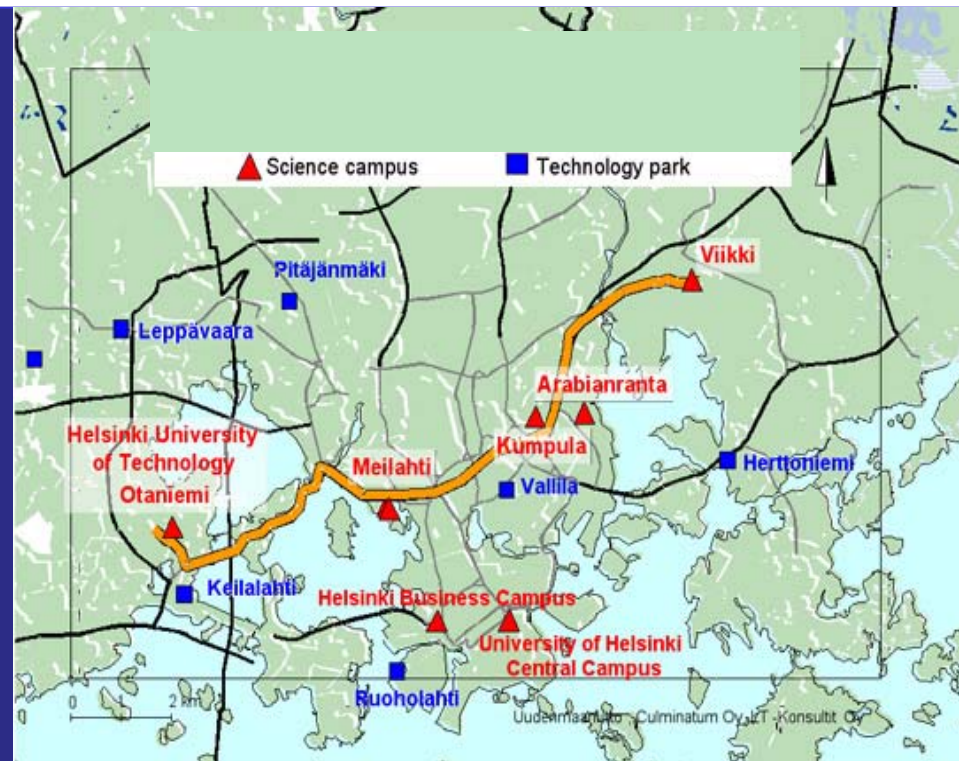
Bio campus  
in **Viikki**

Medical campus  
in **Meilahti**

Natural science campus  
in **Kumpula**

Technology campus  
in **Otaniemi**

Business campus  
in **Taivallahti**



## *One of the largest bio-campuses in Europe*

### University

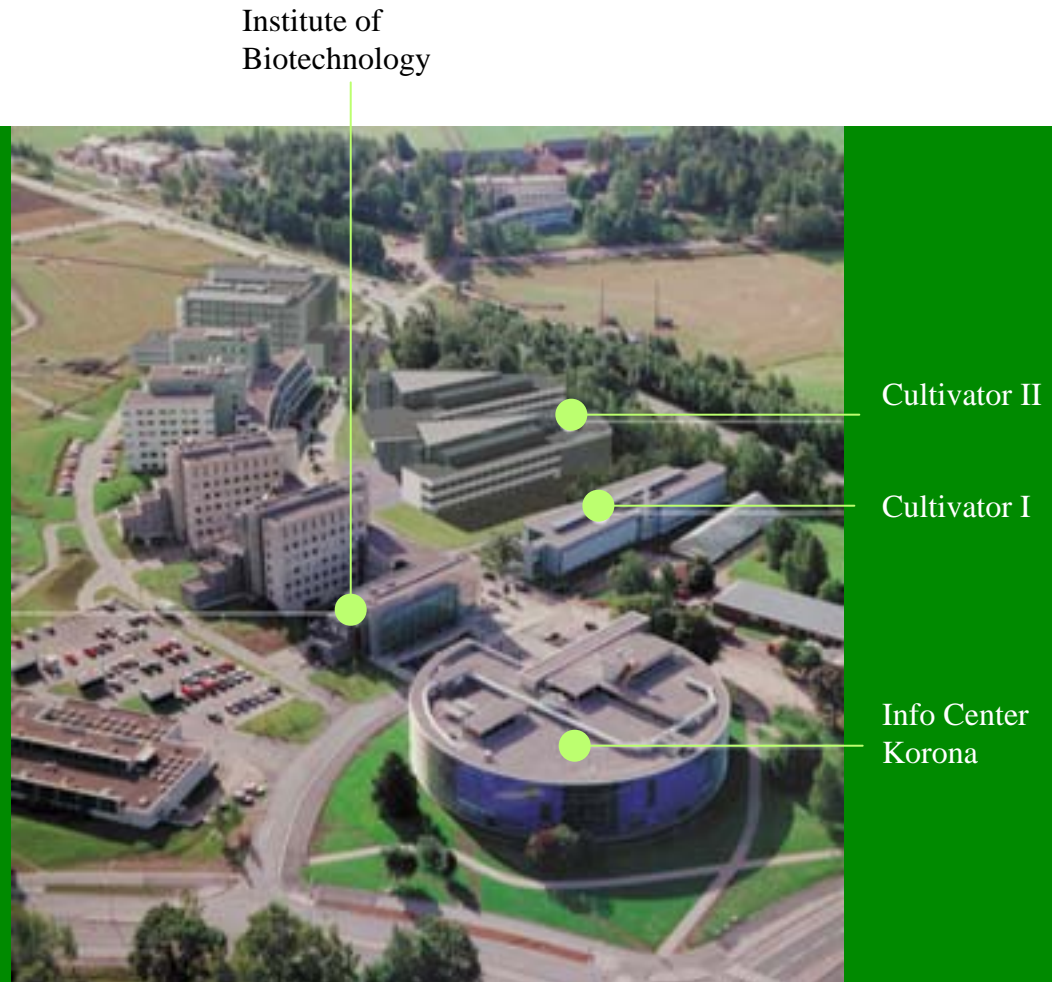
- Four University faculties: Agriculture and Forestry, Biosciences, Pharmacy, Veterinary Medicine
- Institute of Biotechnology (molecular biology, gene technology)
- Neuroscience Centre

### Others

- National Veterinary and Food Research Institute of Finland
- Finnish Game and Fisheries Research Institute
- Viikki Science Library

### Facts

- 6 000 students
- 2 500 staff
- 40 (+field 160) hectares



# Viikki bio campus from the air



# Meilahti – Medical campus

## *Basic and clinical research productively combined*

### University

- Faculty of Medicine
- Helsinki University Central Hospital

### Research Centers

- Biomedicum Helsinki Research Center
- FIMM - Institute of Molecular Medicine (incl. Finnish Genome Center)
- National Public Health Institute KTL
- Finnish Institute of Occupational Health TTL

### Other

- Six Centres of Excellence
- National Library of Health Sciences

### Facts

- 2 000 students
- 1 500 staff
- 20 hectares

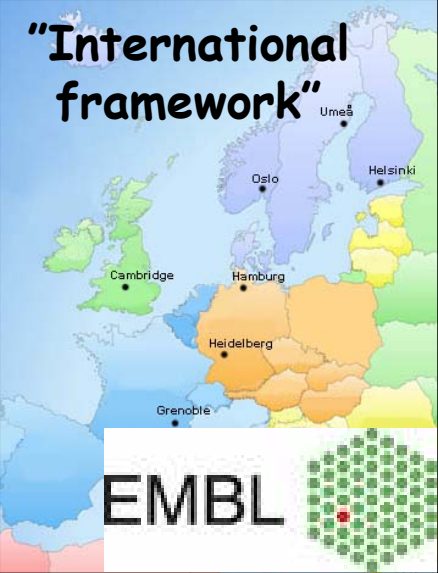


FOTO: JUHA TIAINEN

University Central Hospital and Hospital District of Helsinki and Uusimaa

Biomedicum  
HYKS Institute

**"International framework"**



**"Science"**



**"Health"**



**"Technology"**



**"Public-private partnership"**



**Institute for Molecular Medicine (FIMM)**

Scientific breakthroughs  
Publications  
PhD theses  
Training

Understanding of disease  
Diagnostics & therapies  
Public health

Tech development  
Industrial collab & applications



**Strong international profile, collaboration across 3 ministries and industry, top quality molecular medicine focus, new technology platforms, impact on society and innovation**

- The Institute for Molecular Medicine Finland FIMM is a joint research institute of the University of Helsinki, the Hospital District of Helsinki and Uusimaa (HUS) and the National Public Health Institute (KTL)
- The Institute was established in September 2006.
- The mission of the Institute is to advance new fundamental understanding of the molecular, cellular and etiological basis of human diseases.
- This understanding will lead to improved means of diagnostics and the treatment and prevention of common health problems.
- Finnish clinical and epidemiological study materials will be used in the research.
- [www.fimm.fi](http://www.fimm.fi)

## **Genetic epidemiology and genomics of complex diseases**

- Cardiovascular, neuro-psychiatric
- Cancer genetics (future)

## **Medical Systems Biology**

- Cancer systems biology
- Diabetes and obesity (future)
- Medical bioinformatics

## **Translational research**

- Risk profiles, diagnostic methods and biomarkers, therapeutic targets, lead molecules

- Research Groups
- Director, Professor Olli Kallioniemi
  - [Finnish Centre of Excellence in Translational Genome-Scale Biology](#)
  - [Group Kallioniemi](#)
- Research Director, Professor Leena Peltonen-Palotie
  - [Finnish Centre of Excellence in Complex Disease Genetics](#)
  - [Group Peltonen-Palotie](#)
  - [Nordic Centre of Excellence in Disease Genetics](#)

# Meilahti campus area



FIMM

## RESEARCH and EDUCATION

HUT Helsinki University of Technology & VTT,  
GTK, KCL, CSC

- 14.000 technology students, 240 prof.
- 3000 researchers

## START-UP COMPANIES

High-tech firms, incubators

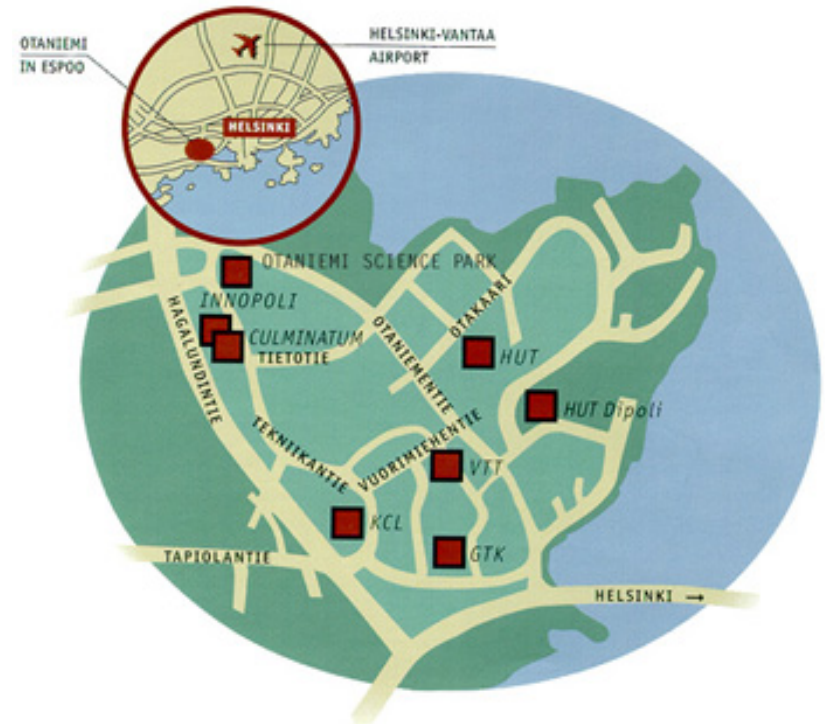
- 300 tenants
- 200 ICT & high-tech
- annually 50-70 new start-ups

## INNOVATION ORGANISATIONS

- Culminatum, Technopolis Ventures,  
The Foundation for Finnish Inventions...

## LARGE COMPANIES – “high-tech mile of Espoo”

- 15.000 jobs
- International e.g.; Nokia Head Quarters,  
TietoEnator, Kone, Hewlett-Packard FI,  
Microsoft FI

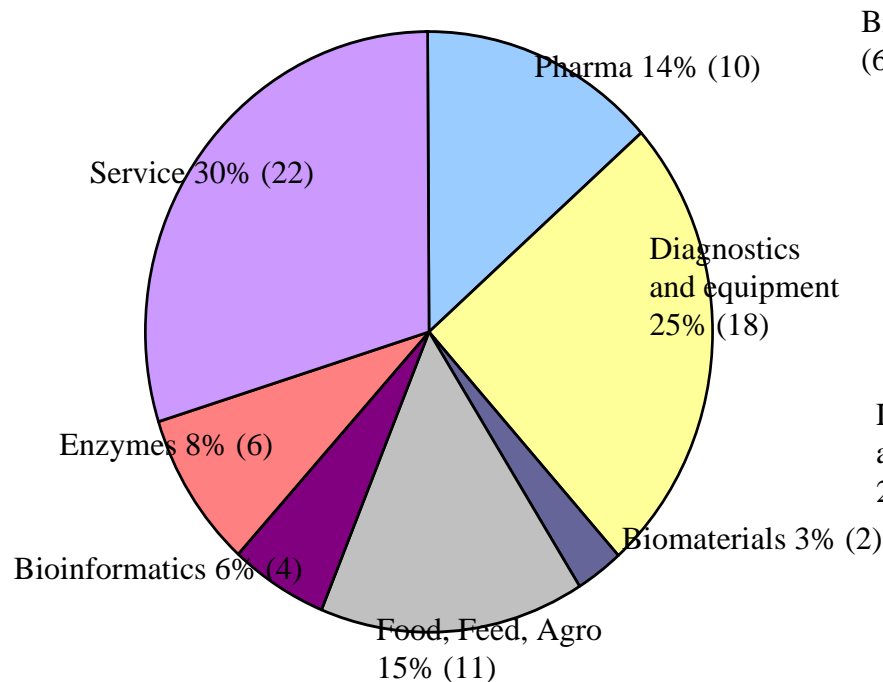


**“Otaniemi is the largest concentration of technology related businesses, technical research, education and innovation in Northern Europe”**

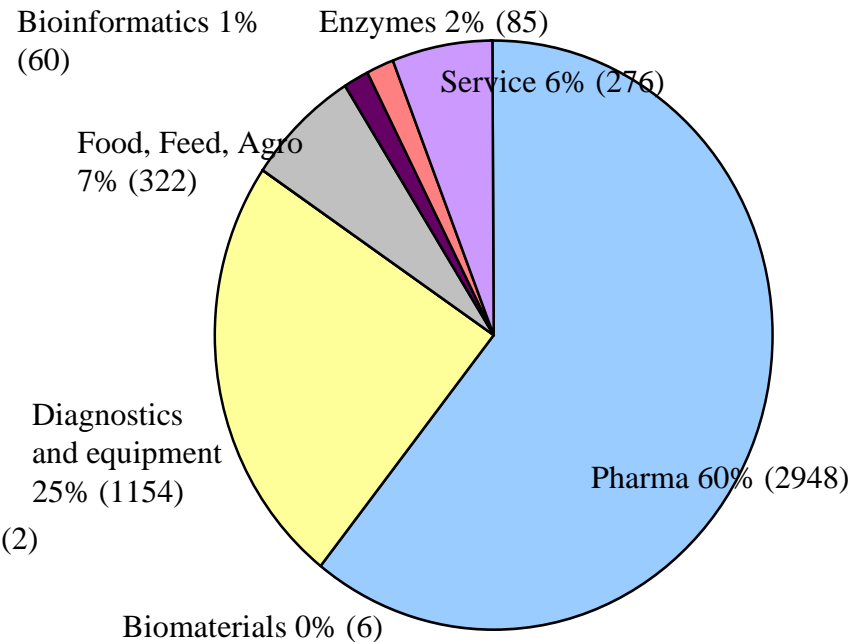
# Bioindustry in Helsinki Region

Helsinki region has 45% of HealthBIO-companies in Finland

In general about 50% of the sector jobs and about 75 % of sector turnover comes from Helsinki region



**Number of Biotech Companies by Sectors (total 73)**

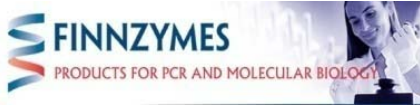


**Employees of Biotech Companies by Sectors (total 4811)**

# About 140 Life Sciences companies - significant fields:

- **Pharmaceuticals** (e.g. Orion Pharma Ltd.,)
- **In vitro diagnostics** (e.g. Orion Diagnostics, Medix Biochemica, Finnzymes)
- **Laboratory equipment** (e.g. Thermo Electron, Biohit)
- **Bioinformatics, data mining and systems biology** – rising fields of Life Sciences (Zora BioSciences, MediCel, Biocomputing platforms)
- **Hospital and diagnostic equipment** (e.g. General Electric Healthcare, Siemens Medical, Planmeca, Varian Medical Systems Finland)
- **Industrial biotechnology** (e.g. Valio, Sinebrychoff, Genencor International, Roal/Röhm / AB Enzymes)

# Biotechnology companies in Helsinki Region - Examples



## **Finnzymes Oy**

Finnzymes works at the cutting edge of development in PCR, quantitative real-time PCR, transposon and RNA technologies.

Research collaboration with several research groups and companies to refine scientific innovations into useful commercial products for molecular biologists worldwide.



## **Mobidiag Oy**

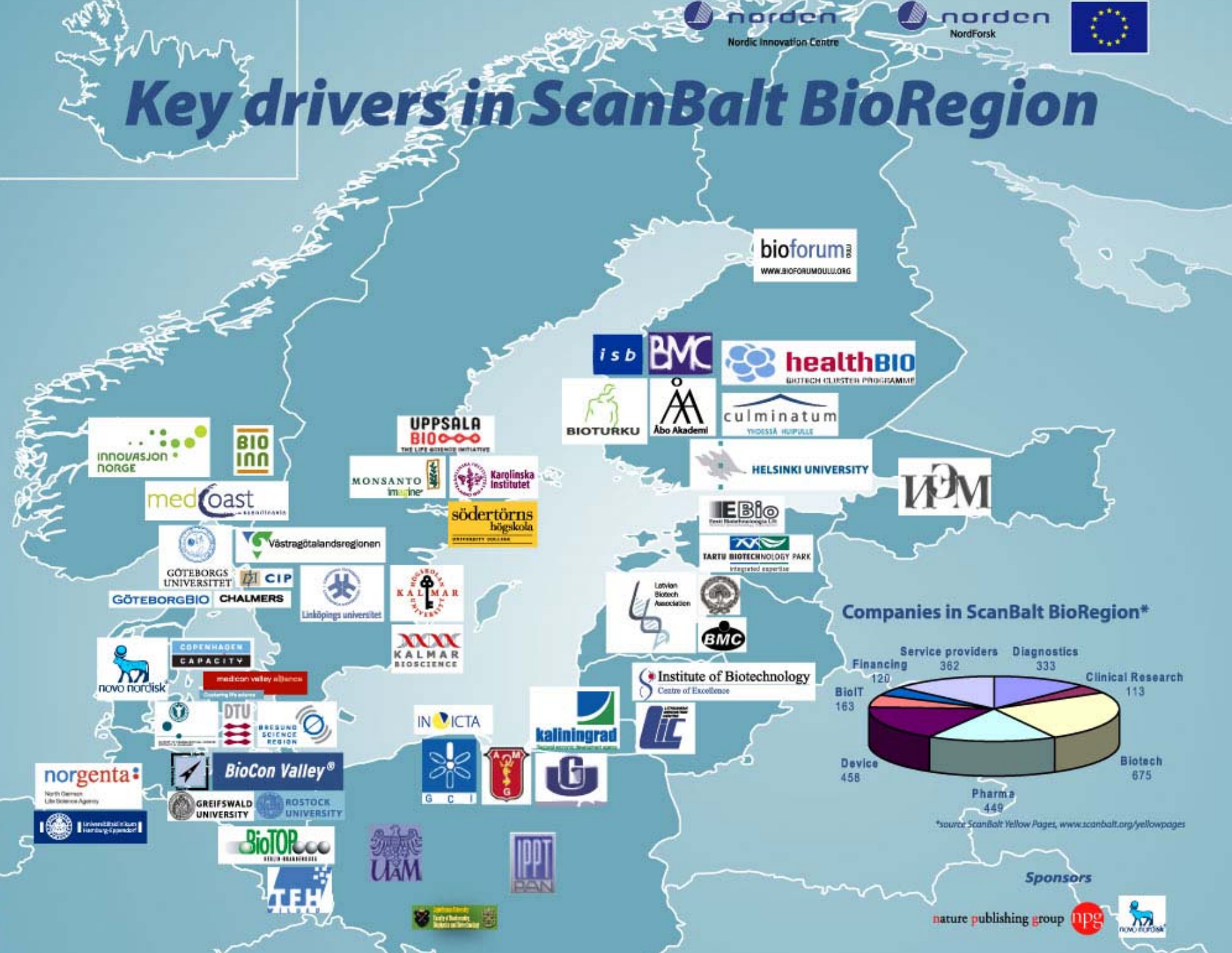
Mobidiag designs, develops, and markets DNA biochips for infectious diseases. Prove-it™ Bacteria: specific detection of more than 50 bacterial species.



## **Ipsat Therapies Ltd**

Ipsat Therapies develops products for the prevention of antibiotic resistance, antibiotic associated diarrhea and hospital associated infections

# Key drivers in ScanBalt BioRegion



bioforum  
WWW.BIOFORUMDULL.ORG

isb BMC healthBIO  
BIOTECH CLUSTER PROGRAMME  
BIOTURKU Åbo Akademi culminatum  
YHOSSÄ HEIPULLE

INNOVASJON NORGE  
BIO INN

UPPSALA BIO  
THE LIFE SCIENCE INITIATIVE

MONSANTO imagine  
Karolinska Institutet

HELSINKI UNIVERSITY

IFM

medCoast  
KOBLENZ

Västergötlandsregionen

södertörns högskola  
UNIVERSITY COLLEGE

IEBio  
East Biobusiness Ltd

TARTU BIOTECHNOLOGY PARK  
integrated expertise

GÖTEBORGS UNIVERSITET  
GÖTEBORGBIO CIP

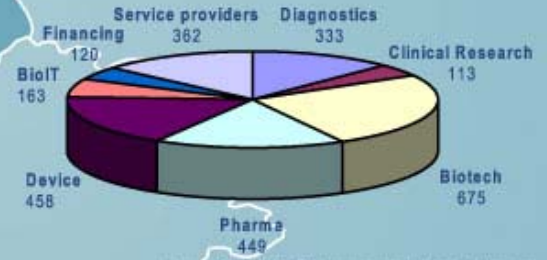
Linköpings universitet

KALMAR  
UNIVERSITY

Latvian Biotech Association

BMC

## Companies in ScanBalt BioRegion\*

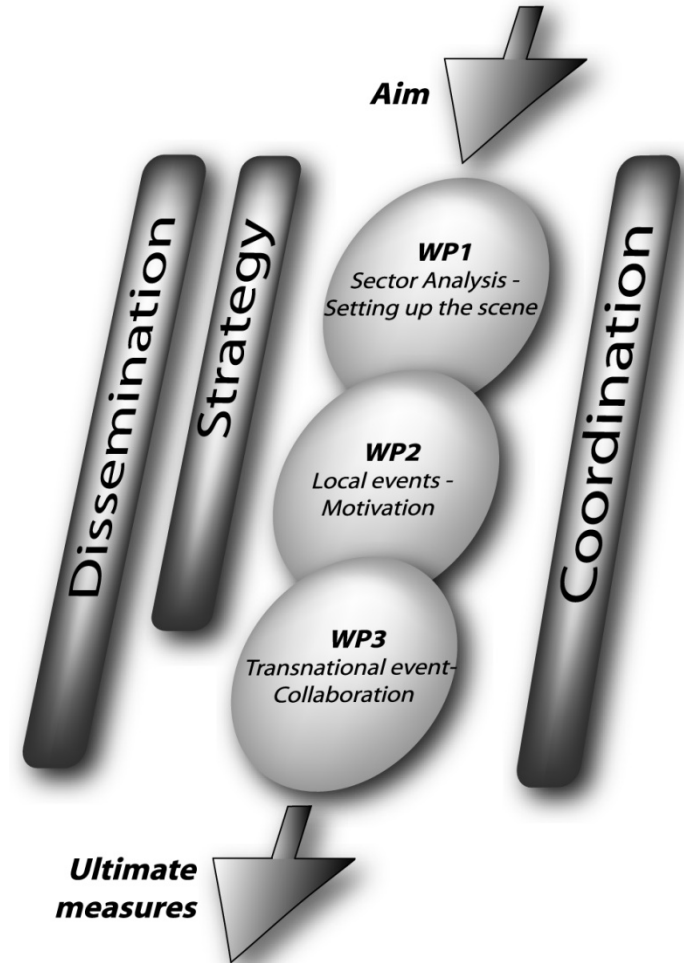
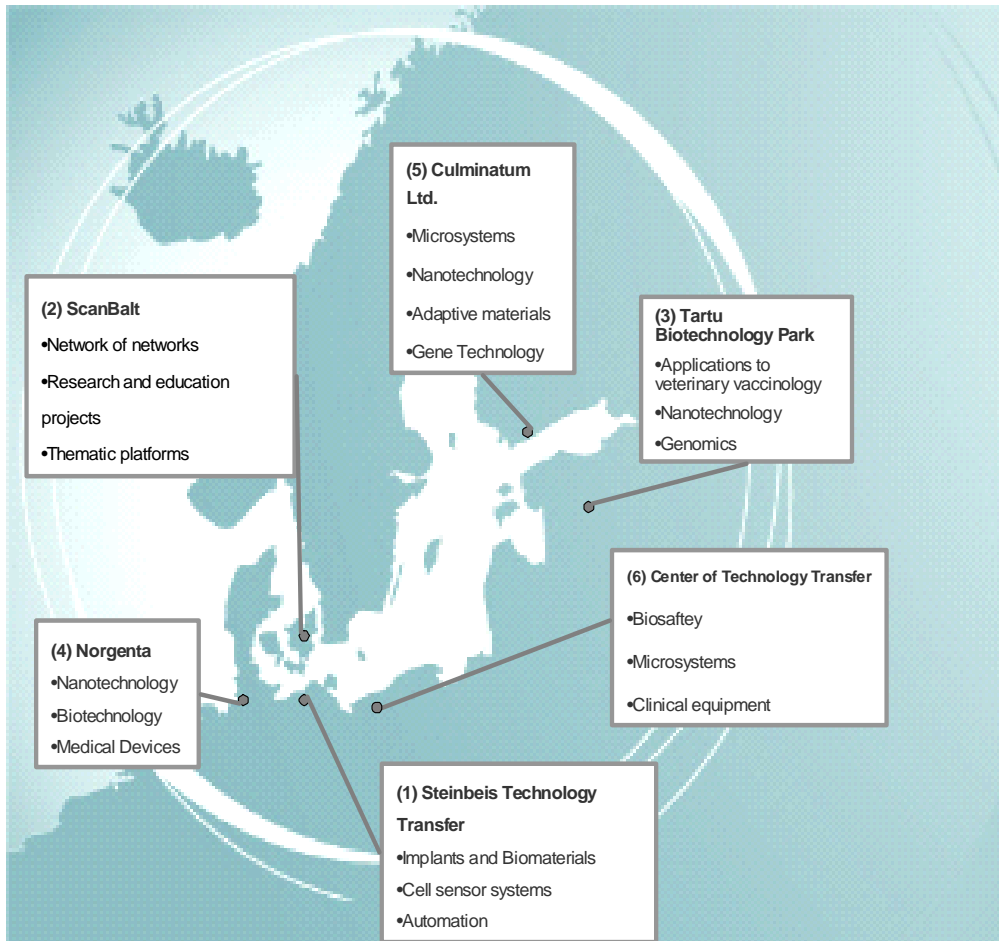


\*source ScanBalt Yellow Pages, www.scanbalt.org/yellowpages

## Sponsors



# Partners in Boost Biosystems - Integrating biology with micro- and nanotechnologies



***Contact Information***

***Riikka Paasikivi  
Program Director  
HealthBIO cluster***

***Culminatum Ltd Oy  
Helsinki Region Centre of Expertise  
[riikka.paasikivi@culminatum.fi](mailto:riikka.paasikivi@culminatum.fi)  
[www.culminatum.fi](http://www.culminatum.fi)***