



National Network of Finnish Biocenters

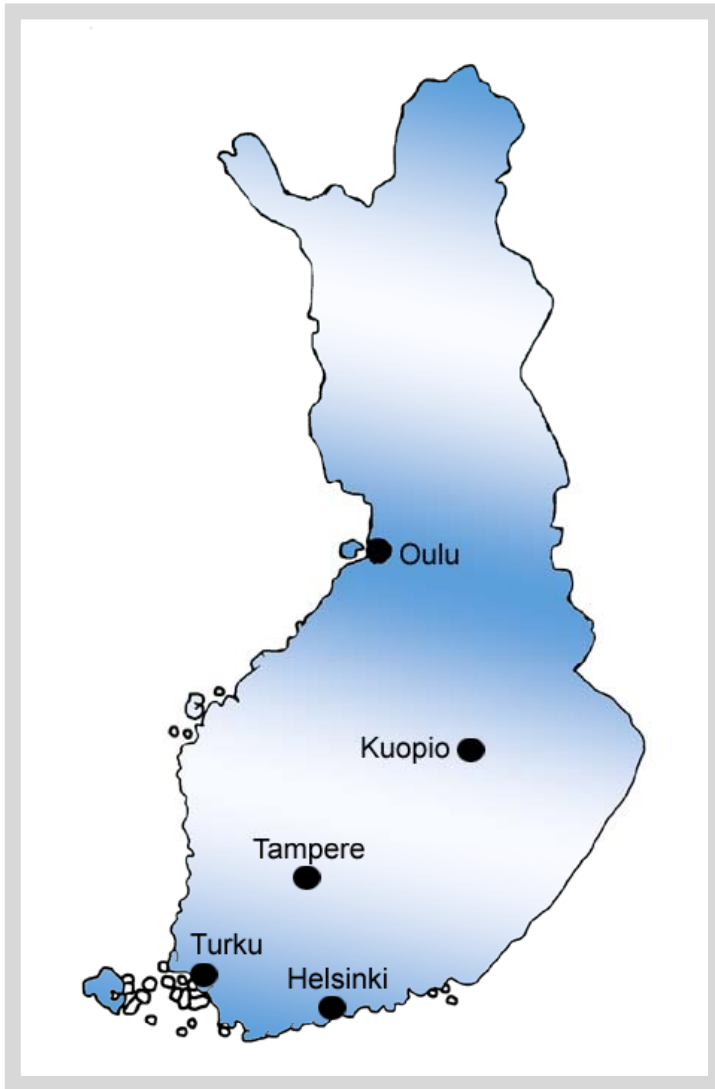
Topics to be covered

1. Description of Biocenter Finland and its partner biocenters;
2. Biocenter Finland Research Infrastructure Networks and technology service platforms
3. Doctoral training in Finnish Biocenters
4. Opportunities for postdoctoral and independent researchers in Finnish biocenters
5. Sino-Finn collaboration in Life Sciences
6. Biocenter Finland International Visitor Program

1. Biocenter Finland in a nutshell

Founded in August 2006 by six Finnish Universities, the Biocenter Finland today provides an umbrella organization for

- seven biocenters;
- more than 200 principal investigators and 2000 other scientists working in different fields of biological and medical sciences;
- about 20 international **doctoral training programs** (“graduate schools”) with about 1000 trainees;
- opportunities for structured research career;
- a nationwide network of **research infrastructures** and technology service platforms for the entire scientific community;
- technology transfer support.



For 2010–2012 Biocenter Finland received 45 mill € to support its key activities. Establishing a wide range of technology services in the participating biocenters provides a unique solution for organizing research infrastructures at national level. The infrastructure networks of Biocenter Finland also provide an interface to the European Research Infrastructures on the ESFRI Roadmap.

Biocenters

Oulu: Biocenter Oulu,

Kuopio: Biocenter Kuopio,

Tampere: Institute of Medical Technology,

Turku: BioCity Turku, and

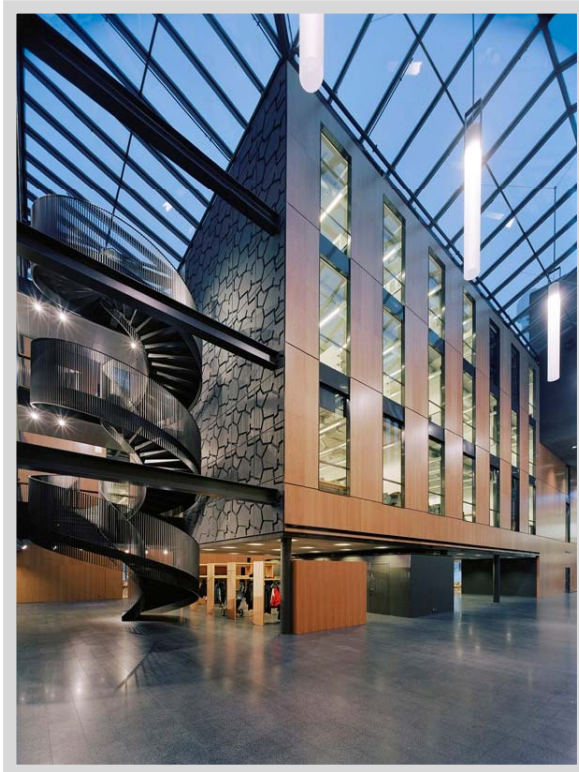
Helsinki: Biocentrum Helsinki, Institute of Biotechnology and Finnish Institute for Molecular Medicine

Aims of the Biocenter Finland network

- to enhance and coordinate national networking in biological and medical sciences through nationwide networks of infrastructures and technology service platforms;
- to promote international recruitment;
- to develop prerequisites for high-quality research and product development in biotechnology;
- to promote commercial exploitation of research findings;
- to coordinate and develop researcher training, and to establish effective connections with clinical investigators at university hospitals, biotech businesses, and polytechnics.

All activities are evaluated regularly by international peer review.

Member institutes



Biocenter Oulu - BCO
www.biocenter oulu.fi



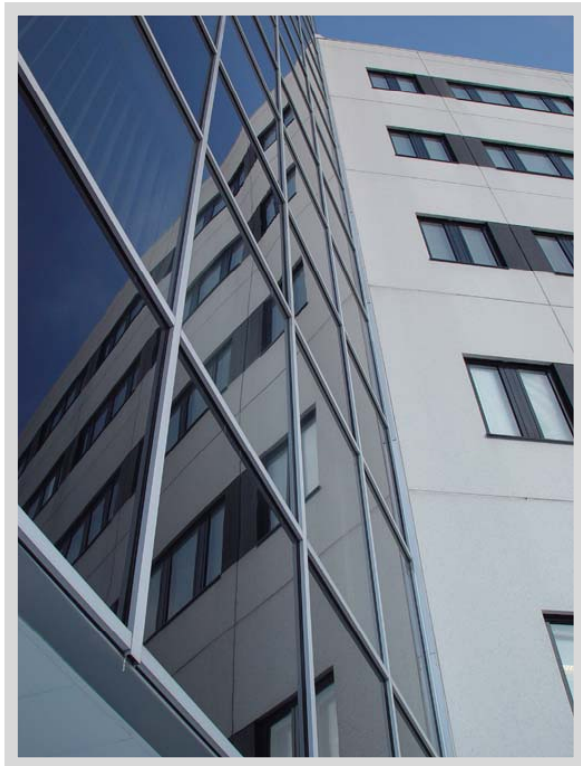
- Established 1986
- About 20 research groups at the University of Oulu Faculties of Science & Technology, Faculty of Medicine and University Hospital with a total staff of about 300
- Main research fields: connective tissue research; cardiovascular diseases; biocatalysis and structural biology of enzymes; production of recombinant proteins and bioprocessing engineering, molecular genetics; developmental biology and genetically modified mice
- BCO doctoral training programme; about 140 graduate students



Biocenter Kuopio - BCK
www.uku.fi/bck



- Established 2007
- 33 research groups at the University of Eastern Finland's A. I. Virtanen Institute for Molecular Sciences and University faculties. In addition 6 corporate members. (33 principal investigators and 250 other scientists)
- Main research fields: diabetes and cardiovascular diseases; gene transfer technology and gene therapy; neurosciences; nuclear receptor research; bone and cartilage research; drug research and development; nutritional genomics; molecular pharmacology; animal biotechnology; cancer research; bioinformatics
- 3 doctoral training programmes linked to BCK through the research groups



Institute of Biomedical Technology - IBT
www.uta.fi/ibt/

- From the beginning of the year 2011, Regea Institute for Regenerative Medicine and Institute of Medical Technology (established 1995) are united and form the Institute of Biomedical Technology (IBT).
- The aim is to create an interdisciplinary, internationally high standard research and education institute, operating on the interface of biomedicine and technology.
- ca. 24 principal investigators and about 100 other scientists
- Doctoral training programme with about 80 students



BIOCITY TURKU
BIOCITY TURKU
BIOCITY TURKU



ACADEMIC EXCELLENCE IN LIFE SCIENCE AND MEDICINE

www.biocity.turku.fi/

- Established in 1994
- 85 principal investigators and 900 other scientists in the University of Turku and Åbo Akademi University
- Main research fields: receptors and signalling, systems biology, immunology, reproductive and developmental medicine, diagnostics, biomaterials
- Research groups in BioCity Turku participate in the activities of 12 different doctoral training programmes (about 450 graduate students)

BIOCENTRUM HELSINKI

Biocentrum Helsinki - BCH
www.helsinki.fi/biocentrum



- Established 1994
- 35 research groups at the University of Helsinki Faculties of Medicine, Biological Sciences and Agriculture and Forestry, and at the Institute of Biotechnology and Neuroscience Center
- 360 researchers (incl. graduate students)
- Main research fields: cell and molecular biology; developmental biology; macromolecular structure and biophysics; molecular cancer biology; molecular genetics; molecular neuroscience; plant biotechnology and molecular biology
- BCH has a doctoral training programme of its own and it supports two other doctoral training programmes



Institute of Biotechnology – BI
www.biocenter.helsinki.fi/bi



- Established 1989
- 28 principal investigators and about 210 other scientists (incl. graduate students)
- Main research fields: integrative biology in the areas of molecular cell biology, genomics in model organisms and plants, developmental biology and structural biology and biophysics; integrative programs are being launched in quantitative biology and patterning dynamics
- 5 doctoral training programmes linked to BI through the research groups



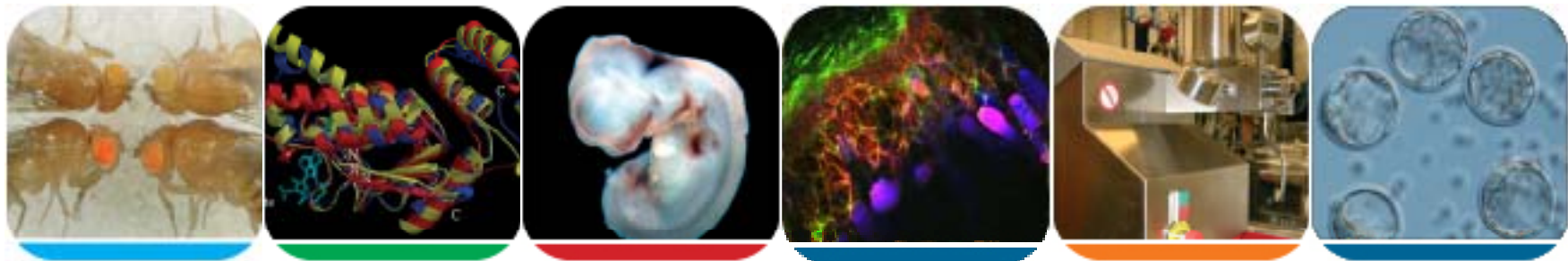
www.fimm.fi



- Established 2006
- 17 principal investigators (incl. 2 FiDiPro professors). In addition FIMM has altogether 17 PIs in the FIMM National Network for Molecular Medicine and other adjunct positions + additional 10 PIs in THL's and VTT's units affiliated with FIMM activities
- Number of other scientists: about 70 (including doctoral students)
- Main research fields: human genomics; medical systems biology; translational research and personalized medicine
- Linked to 3 doctoral training programmes

2. Biocenter Finland infrastructure networks

- Bioinformatics
- Biological Imaging
- Genome-wide Methods
- Model Organisms
- Proteomics and Metabolomics
- Stem Cells and Biomaterials
- Structural Biology and Biophysics
- Translational Research Technologies
- Viral Gene Transfer and Cell Therapy



Biocenter Finland funds infrastructure networks for organizing technology service platforms

- A nationwide network of top-of-the-line technology services
 - The selection of service providers is based on international peer evaluation that focuses on the quality, scientific competence and the number scientists that the platforms are expected to serve. By these measures, overlapping and redundant investments can be avoided.
- Participation in the pan-European (ESFRI) infrastructures
 - Many service providers are also active participants in the pan-European ESFRI infrastructures thereby connecting the national and European infrastructures in the BMS (Biological and Medical Sciences) field.

Bioinformatics Infrastructure Network

- Bioinformatics Technology Platform ([BF www](#))

Service providers: BCH, BI, BCK, BCO, IMT, BioCity, FIMM

- Summary of services: Bioinformatics analysis and data integration services for the bioscience community; software for bioinformaticians; services to store, manage, retrieve and utilize experimentally produced data
- ESFRI-connection: ELIXIR through CSC (IT Center for Science)

Biological Imaging - National Imaging Infrastructure Network (NIIN)

([BF www](http://www.biocenter.fi))

Three technology service platforms:

- Electron microscopy
- Light microscopy
- In vivo imaging



Electron microscopy technology platform

- Service providers: BCH, BI, BCO
- Summary of services: Three-dimensional imaging; personal user support and general support activities; maintenance of imaging systems; teaching activities; data processing

Light microscopy technology platform

- Service providers: BCH, BI, BCO, BCK, IMT, BioCity
- Summary of services: High resolution light microscopy; label-free technologies; light microscopy for studying biological interactions; training, consultation and support

National in vivo imaging technology platform

- Service providers: BCH, BCK, BioCity
- Summary of services: MRI; PET; optical imaging; from consultation and training to full service

ESFRI-connection: EuroBioImaging

Genome-wide Methods Infrastructure Network (GWM)

- Genome-wide methods technology platform ([BF www](http://www.biocenter.fi))

- Service providers: BCH, BI, BCK, BioCity, FIMM
- Summary of services: genomes & metagenomics; targeted sequencing; SNP genotyping; DNA copy number variation; sequencing of immunoprecipitated DNA/RNA; gene expression microarrays; distribution of genome-scale reagents; ORF cloning service; cell microarray screening
- ESFRI-connection: BBMRI



Proteomics and metabolomics Infrastructure Network (ProtMet) ([BF www](http://www.biocenter.fi))

Two technology service platforms:

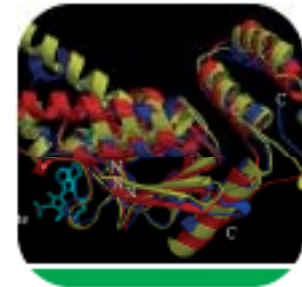
- Proteomics & protein characterisation
- Metabolomics

Proteomics & protein characterisation technology platform

- Service providers: BCH, BI, BCO, IMT, BioCity
- Summary of services: protein identification and quantitation; protein modifications; protein kinetics; metabolite screening; education; data analysis; focussed services, phased technology

Metabolomics technology platform

- Service providers: BCH, BCK, FIMM (in cooperation with VTT)
- Summary of services: targeted plant and microbial metabolomics; non-targeted metabolite profiling analyses; targeted quantitative high-throughput analyses for medical applications
- ESFRI-connections: BBMRI and EATRIS



Model Organisms Infrastructure Network ([BF www](http://www.biocenter.fi))

Two technology service platforms:

- Mouse models
- Non-mammalian models



Mouse models

- Service providers: BCH, BCK, BCO, BioCity
- Summary of services: generation of gene targeted and transgenic mice; cleaning and cryopreservation of mouse lines; analyses on cardiovascular functions; gene-expression profiling; neuronal phenotyping

Non-mammalian models (zebrafish)

- Service providers: BCH, IMT
 - Summary of services: housing of zebrafish; morpholino-injections; genotyping
-
- ESFRI-connection: INFRAFRONTIER (Mouse models)

Stem Cells and Biomaterials Infrastructure Network

- Stem cells and biomaterials technology platform ([BF www](#))

Service providers: BCH, BI, BCK, IMT, BioCity

- Summary of services: Provision of hESC and iPSC; validation of pluripotent stem cells; cell differentiation screening with biomaterials; data analysis; functional cell analysis; training
- ESFRI-connection: no ESFRI project for stem cell research



Structural Biology and Biophysics Infrastructure Network

([BF www](#))

Two technology service platforms:

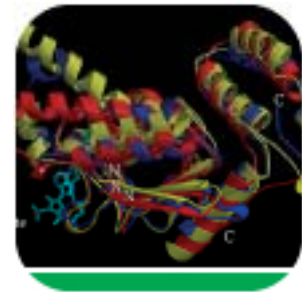
- X-ray crystallography
- NMR spectroscopy & mass spectrometry

X-ray crystallography

- Service providers: BI, BCO, BioCity
- Summary of services provided: Protein characterisation and crystallisation; crystallisation screens; structural analysis and visualisation; data collection and processing

NMR spectroscopy & mass spectrometry

- Service providers: BI, BCK
- Summary of services provided: Data collection; data analysis (e.g. structure determination, dynamical characterization, mapping of binding site); turnkey approach which includes also production of isotopically labeled proteins in *E. coli*
- ESFRI-connection: INSTRUCT



Translational Research Technologies Infrastructure Network

([BF www](#))

Two technology service platforms:

- Drug discovery and chemical biology (DDCB)
- Biobank

Drug discovery and chemical biology (DDCB)

- Service providers: BCH, BCK, BioCity, FIMM
- Summary of services provided: DDCB advisory panel; chemoinformatics; molecular modelling

Biobank technology platform

- Service providers: IMT, BioCity, FIMM
 - Summary of services provided: sample catalog database & harmonized data management; virtual microscopy (scanning, image analysis & storage); tissue processing and analyses
-
- ESFRI-connection: BBMRI, EATRIS, EU-Openscreen

Viral Gene Transfer and Cell Therapy Infrastructure Network

- Viral gene transfer technology platform ([BF www](#))

- Service providers: BCH, BCK, BCO, IMT, BioCity
- Summary of services provided: virus production; vector bank; gene transfer support services; generation of transgenic and knock-down mouse strains using lentiviral gene transfer
- ESFRI-connection: ECRIN

3. Doctoral training in Finnish Biocenters

The partner biocenters of Biocenter Finland

- organize or participate in about 20 doctoral training programs (“graduate schools”);
- have altogether about 1000 doctoral trainees;
- give all training in English;
- collaborate extensively in organizing practical courses and lecture courses to doctoral trainees.

4. Opportunities for postdoctoral and independent researchers in Finnish biocenters

The Finnish 4-stage research career structure

Stage I Doctoral trainee

Stage II Postdoctoral researcher

Stage III Independent researcher (Group leader)

Stage IV Professor, research professori, research directors

5. Sino-Finn collaboration in Life Sciences

- 1st Sino-Finn Life Science Forum in 2008 (Wuhan, Soochow; Shanghai);
 - 2nd Sino-Finn Life Science Forum in 2009 (Helsinki)
 - 3rd Sino-Finn Life Science Forum in 2010 (Shanghai)
 - 4th Sino-Finn Life Science Forum in 2011 (Finland)
-
- Continuation of Sino-Finn Summer Schools organized by Biocentrum Helsinki and Biocenter Finland
-
- Biocenter Finland International Visitor Program

6. Biocenter Finland international visitor program for doctoral and postdoctoral trainees

- Funding is targeted to support short (6 month - 1 year) visits of prospective doctoral trainees from abroad who are interested in conducting research in Finnish Biocenters and in obtaining a doctoral degree in Finnish Biocenter Universities. Funding can also be used for short (6 month - 1 year) visits of postdoctoral scientists into research groups in Finnish Biocenters. Postdoctoral researchers must have obtained their doctoral degree no more than five years before the date of application.
- Biocenter Finland funds can cover up to 50% of the individual's salary for the appointment period. The rest must come from other sources (e.g. research grants of the recipient group).
- 2nd call will open in summer 2011.

For more information:
www.biocenter.fi

Staff:

Eero Vuorio, director

eero.vuorio@helsinki.fi

Tero Ahola, scientific coordinator

tero.ahola@helsinki.fi

Sanna Leinonen, planning officer

sanna.p.leinonen@helsinki.fi

Chair of Biocenter Finland Board:

Seppo Ylä-Herttuala, professor

seppo.ylaherttuala@uef.fi

BF
Biocenter Finland

Feedback Sitemap Print

Search

National network of biocenters

Biocenter Finland is an umbrella organisation of biocenters in six Finnish Universities (Helsinki, Kuopio, Oulu, Tampere and Turku, and the Åbo Akademi University). The most visible activity of Biocenter Finland is provision of funding for nationwide technology services in the partner biocenters for the benefit of the entire scientific community. The aim is to avoid unnecessary overlaps and invest into the newest technologies and equipment. Technology services are provided by Biocenter Finland infrastructure networks.

Infrastructure networks & technology platform services

- > **Bioinformatics**
analysis and data integration; software; services to store, manage, retrieve and utilize experimentally produced data
- > **Biological imaging**
electron microscopy; light microscopy; in vivo imaging
- > **Genome-wide methods**

Events

Biocenter Finland Infrastructure Day, October 13, 2011

Biocenter Finland Infrastructure Day 2011 will be organised in Turku on Thursday, October 13, ...
[Read more](#)

National Imaging Infrastructure Network NIIN Meeting

Next NIIN meeting will be organised in Turku in April 6th, 2011.
[Read more](#)

BBMRI.FI Launch Event, March 11, 2011

Biomedicum Helsinki, Haartmaninkatu 8, Large Lecture Hall, at 9.15-15.00 ...
[Read more](#)

Latest News

Apr 5, 2011
2nd call for bioscience technology platform grants

Biocenter Finland has opened a second call for bioscience technology platform grants. For more...
[Read more](#)