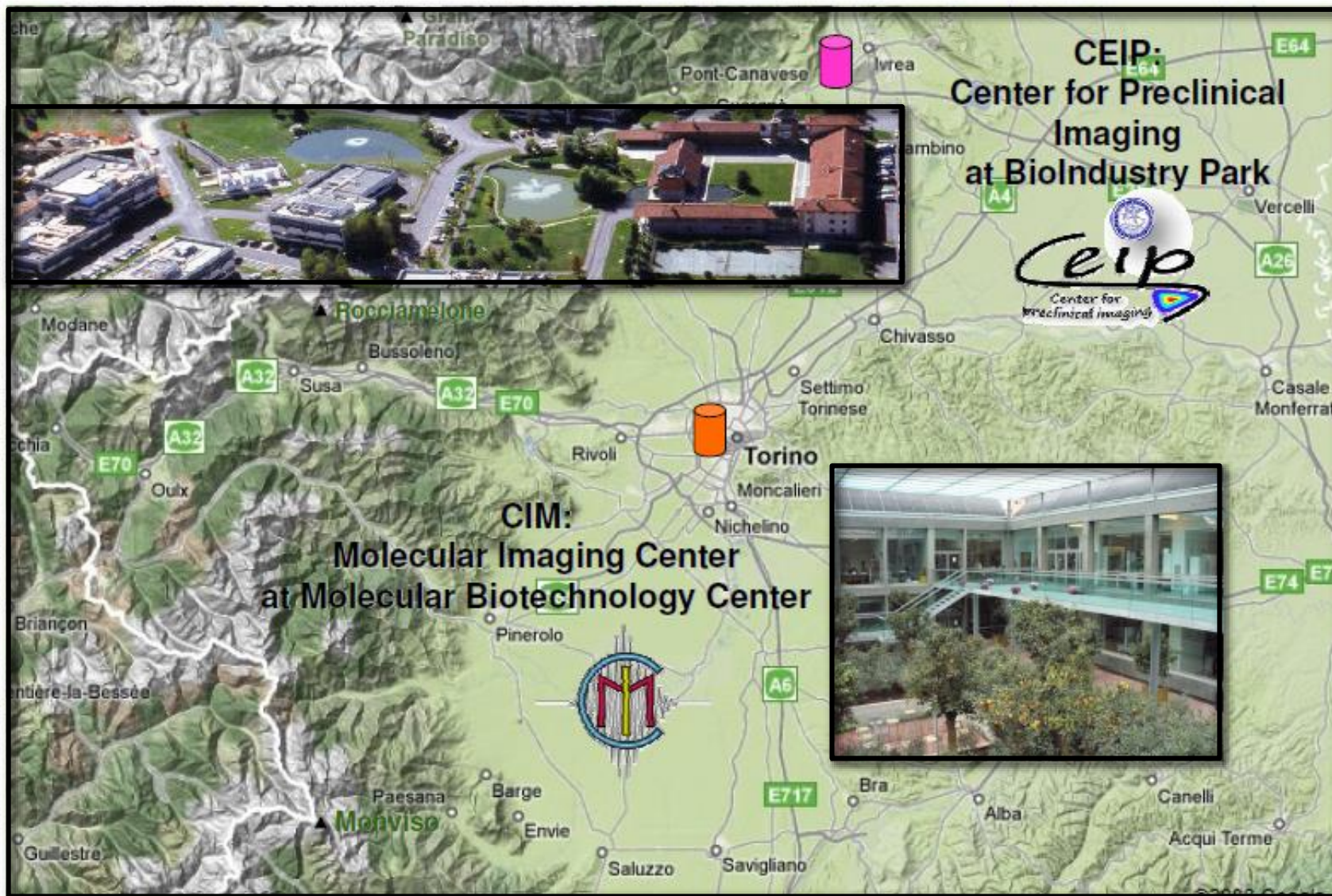


# The Center for Molecular Imaging



# The Center for Molecular Imaging

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## Lines of activity

- Synthesis and MRI assessment of high-relaxivity Gd-based chelates (including multimeric derivatives and nano-sized assemblies)
- Synthesis and MRI assessment of novel agents based on chemical exchange saturation transfer (CEST)
- Dual probes
- Development of hyperpolarised molecules
- Set up of cell labelling procedures (labelling of stem cells, leukocytes, tumour cells, etc.) by the internalisation of paramagnetic metal chelates
- Targeting receptors/transporters overexpressed/up-regulated on pathological cells with imaging probes (including particles)
- Targeting thrombi and plaques with suitably functionalised nanocarriers bearing different types of imaging reporters

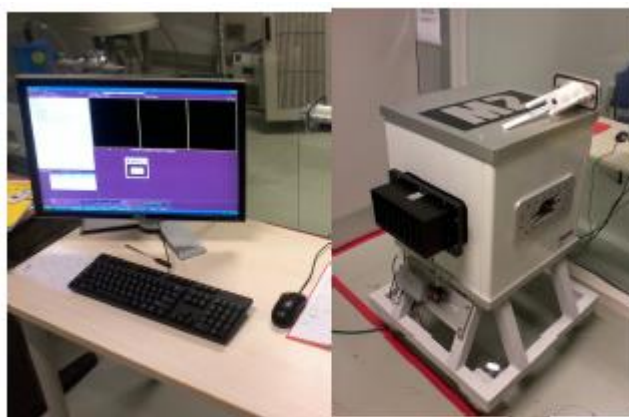
# The Center for Molecular Imaging

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## Equipment at MBC



MRI:  
Bruker 7T



ASPECT M2 1T



PAI: VEVO Visuallsonics



Field Cycling Relaxometer:  
Stelar SMARtracer



 **SPINMASTER - FFC 2000**  
The Fast Field Cycling NMR Relaxometer  
**SPINMASTER**



OI:  
Xenogen IVIS 200

# The Center for Molecular Imaging

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## Equipment at CEIP (Colleretto Giacosa)



☀ PET/SPECT/CT  
Ge Triumph II



☀ Optical Imaging:  
Li-Cor Perl Impulse



☀ MRI: Bruker  
Pharmascan 7T



Bruker Biospec 3T



Bruker Icon 1T

# The Center for Molecular Imaging

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## Other facilities

- Wet labs for sample preparation
- Chemical laboratory for synthesis and purification of probes/tracers
- Equipment for physico-chemical characterization (NMR, UV etc)
- Cell culture labs
- Access to the animal house and animal models

An open access resource,  
removing barriers and enabling  
world-class research

- **Access** to biological and biomedical imaging technologies in Europe
- **Support** from expert technical staff
- **Image data** repositories and analysis tools
- **Training** opportunities in imaging for everyone

**«No European researcher can say that he/she cannot carry out a research project because he/she has not access to the proper Imaging technologies...»**

The European Strategy Forum on Research Infrastructures has granted Euro-Biolmaging the **Landmark status of “European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences”**.



# Euro-BioImaging – Hub and Nodes

Euro-BioImaging consists of a set of 29 geographically distributed Node Candidates (specialised imaging facilities) that can grant access to scientists from all European countries and beyond.

Coordination of Nodes activities and Infrastructure management are carried out by the Euro-BioImaging Hub.

## **Euro-BioImaging HUB**

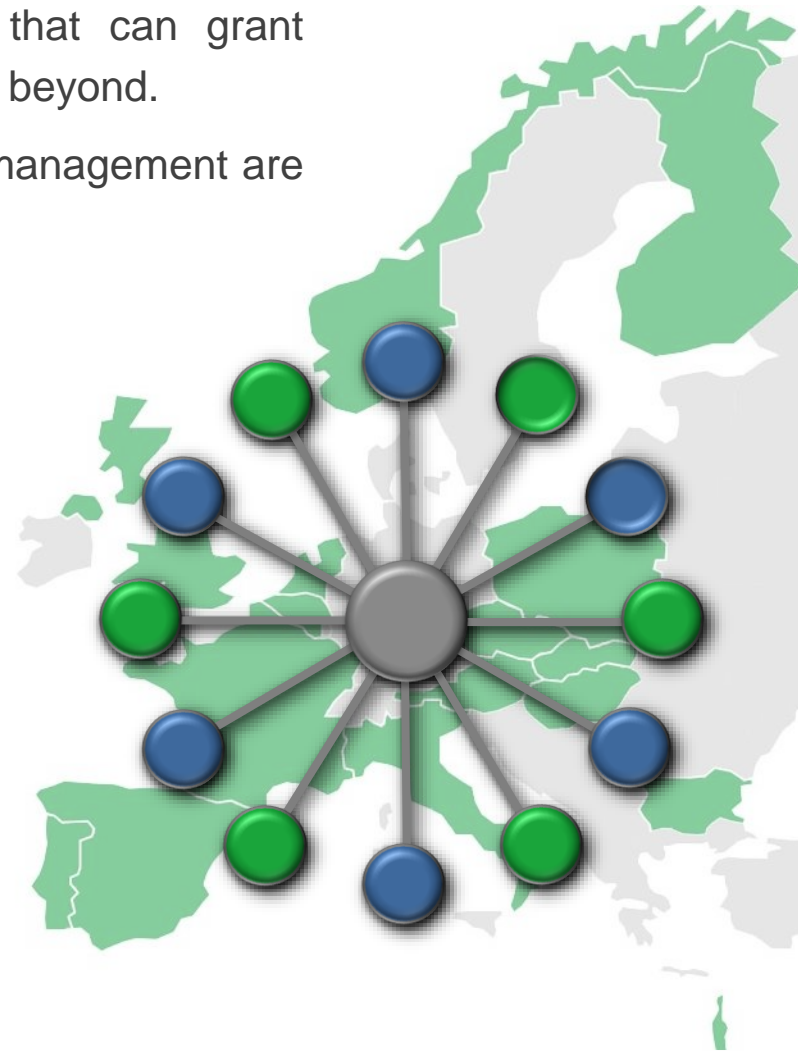
Coordination & support of access, data,  
training  
European infrastructure management

## **Flagship Technology NODES**

Access to unique imaging technology in Europe

## **Multimodal Technology NODES**

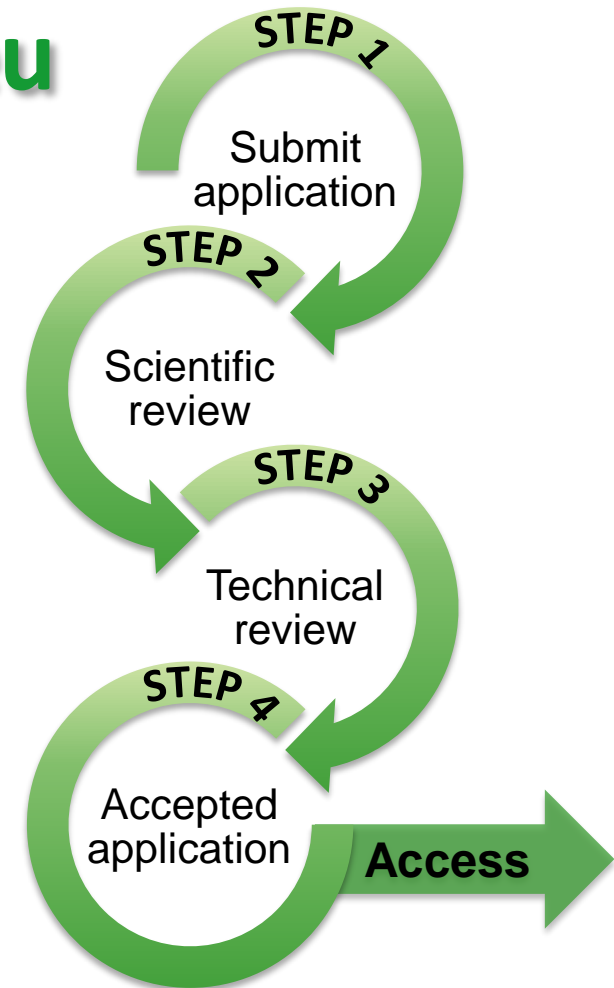
Integrated access to multiple imaging  
technologies



## [www.eurobioimaging.eu](http://www.eurobioimaging.eu)

A **single entry point** gives you access to **36 Imaging technologies** across **29 Nodes** located in **11 European countries** and **EMBL**

- **For Who?**
  - All academic and industrial scientists can apply
- **For what?**
  - National and transnational access
- **How to apply?**
  - Euro-BioImaging Web Portal
  - Support throughout the entire process by the Euro-BioImaging Helpdesk and the host Node

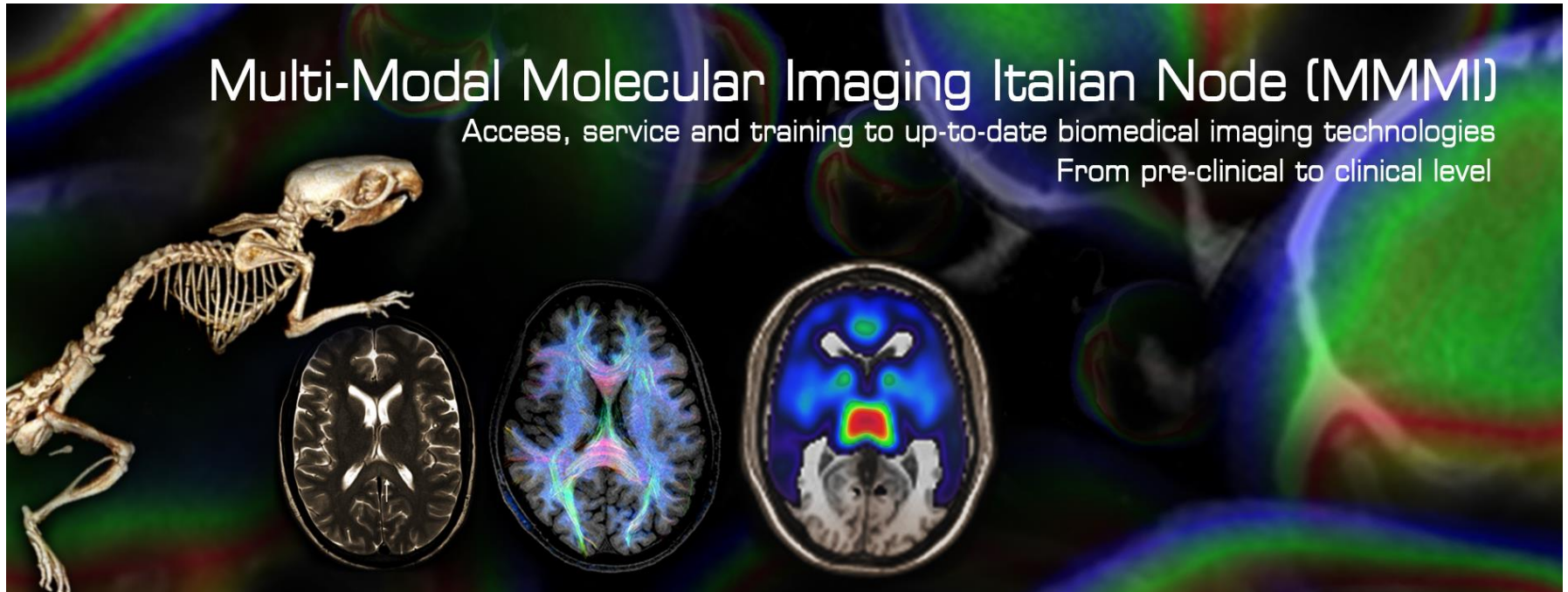






- **Multi-sited Multi-Modal Molecular Imaging Node (MMMI)** – coordinated by University of Torino
- **Phase Contrast Imaging Single Flagship Single Sited Node (PCI)**
- **Advanced Light Microscopy Multi Modal Multi Sited Node (ALM)** – coordinated by IBP CNR, Naples





[www.mmmi.unito.it](http://www.mmmi.unito.it)

The Italian Molecular Imaging Node Candidate focuses on biomedical imaging, offering the acquisition of “in vivo” images by means of the most relevant imaging modalities on a wide variety of animal models. The expertise at the Node’s centers covers targeting and responsive procedures for the visualization of tumours, cardiovascular and neurological diseases.

# The Multi-Modal Molecular Imaging Italian Node



The MMMI Node is distributed over four Italian cities (**Turin, Milan, Naples and Pisa**), with **8 Centers** specialized on different imaging modalities, reporters and animal models.



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DI TORINO  
ALMA UNIVERSITAS  
TAURINENSIS  
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<http://www.cim.unito.it/website/index.php>



OSPEDALE  
SAN RAFFAELE

<http://www.hsr.it/ricerca/divisioni-centri-istituti-e-programmi-di-ricerca/centro-di-imaging-sperimentale/>



Consiglio Nazionale delle Ricerche  
Institute of Molecular Bioimaging and Physiology

[http://www.ibfm.cnr.it/en\\_home/en\\_ibfm\\_home.html](http://www.ibfm.cnr.it/en_home/en_ibfm_home.html)



INSTITUTE OF CLINICAL  
PHYSIOLOGY

<https://www.ifc.cnr.it/index.php/en/>



UNIVERSITÀ DI PISA

<http://www.df.unipi.it/>



<http://www.ftgm.it/>



<http://www.sdn-napoli.it/en/home-2/>



<http://www.ibb.cnr.it/>

A multi-sited Node allows to organize the different know-how, experimental facilities, research experience and interests of the different sites into a network where the different "souls" contributing to the molecular imaging field can interact giving shape to new concepts and applications for life sciences. The merging of all available imaging modalities, instruments and expertises in the multi-sited node allow to respond to the needs of a greater number of users.

## Offered technologies and services

- MRI/MRS (low/high magnetic field, small/large animals)
- Optical Imaging
- CT and micro-CT
- US and micro-US
- PET and SPECT
- Hybrid modalities (MRI/PET, PET(SPECT)/CT)
- Photoacoustic Imaging
- Animal models and animal facilities
- Imaging probes
- Image analysis
- Radiochemistry
- Genomics, proteomics, metabolomics
- Cell culture / Microscopy / Istology / FACS
- Electron and Confocal Microscopy

## Specialties

- Turin** – design, preparation and testing of imaging probes for all the available imaging technologies
- Naples** - neurology, cardiology, and oncology; translation of animal results to human patients
- Pisa** - cardiovascular, cardiopulmonary and metabolic disorders
- Milan** - PET/SPECT based molecular Imaging, from radiopharmaceutical development to preclinical as well as clinical application

A multi-sited Node of Excellence, combining the different strengths of the participating facilities, research experience and in-depth knowledge of the field, to provide "best of all worlds" contributing to the advancement of the molecular imaging field. The merging of all the resources of the multi-sited node allow to respond to the needs of the scientific community.

## Offered technologies

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