

### SINGM

### Ca' Granda Lectures and Seminars in Molecular Medicine Biobanche: questioni giuridiche, casi pratici, opportunità

Giovedi 20 novembre 2014 - ore 17.00 - 19.00 (puntual) Aula Milani, Palazzo Ufilo Fondizione IRCCS Ga' Granda Ospedale Maggiore Policinico

via F. Sforza, 28 - 20122 Milano

Responsabile scientifico: Pier Mannuccio Mannucci Direttore Scientifico Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico

Inquadramento della tematica, spunti introduttivi e conclusioni Paola Sangiovanni, Italy Legal Focus Francesco Pinciroli, Politecnico di Milano Laura Spinardi, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico

La Rete Internazionale di Biobanche Maria Luisa Lavitrano, Università degli Studi di Milano Bicocca

Il percorso delle Biobanche oncologiche Maria Grazia Daidone, Fondazione IRCCS - Istituto Nazionale dei Tumori

Biobanca POLI MI Lucilla Lecchi, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico

Esperienze italiane ed estere nelle biobanche Pasquale De Blasio, Integrated Systems Engineering s.r.l.



BBMRI-ERIC Babarking and Babar

### La rete internazionale di Biobanche

### **BBMRI-ERIC** a gateway for Health

Marialuisa Lavitrano

**Coordinatore BBMRI.it** 

**Co-Chair BBMRI-ERIC Management Committee** 

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BBMRI-IT Nodo Italiano della Infrastruttura di Ricerca Europea Biobanking and Biomolecular Resources Research Infrastructure





### Time, March 13<sup>th</sup>, 2009

**Biobanks** <

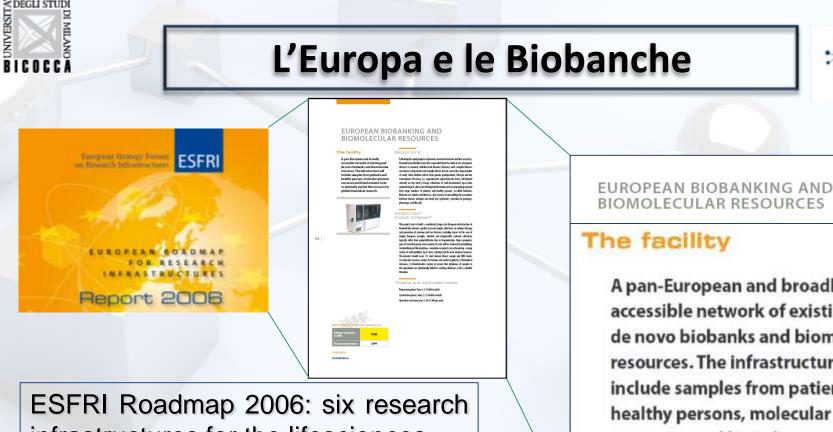
Think of it as an organic bank account. You put your biomaterial in and earn medical interest in the form of knowledge and therapies that grow out of that deposit — no monetary reward, just the potential that you might benefit from the accumulated data at some later date.



BBMRI.it Biobanking and E of Italy

Biobanking and BioMolecular Resources Research Infrastructure

AMORTALITY: FOREVER YOUNG AFRICA: OPEN FOR BUSINESS REINVENTING THE HIGHWAY BBMRI-ERIC



infrastructures for the lifesciences

supports the construction of FP7 European research infrastructures

A pan-European and broadly accessible network of existing and de novo biobanks and biomolecular resources. The infrastructure will include samples from patients and healthy persons, molecular genomic resources and bioinformatics tools to optimally exploit this resource for global biomedical research.

BBMRI-ERIC Industrialists and ular resource

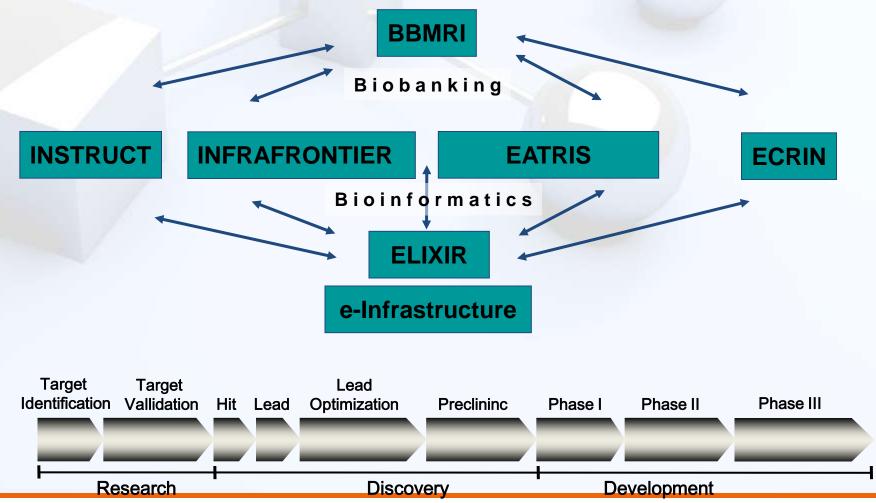


Managing resources for the future of biomedical research





# **BBMRI & ESFRI Biological and Bio-Medical Sciences Research Infrastructures**

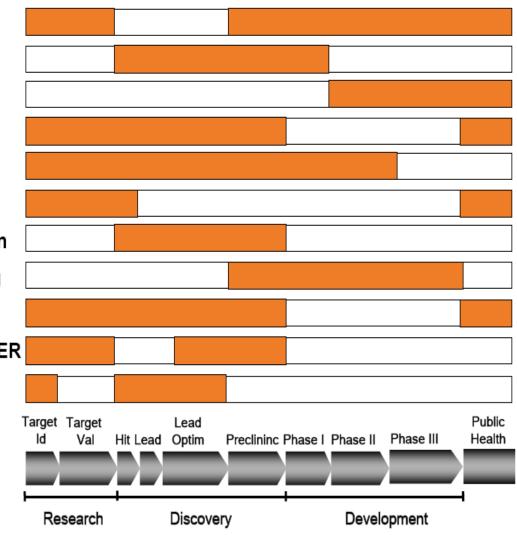




### A DEGLI STUDI DI MILANO BICOCCA

# **Synergies of BMS RIs**

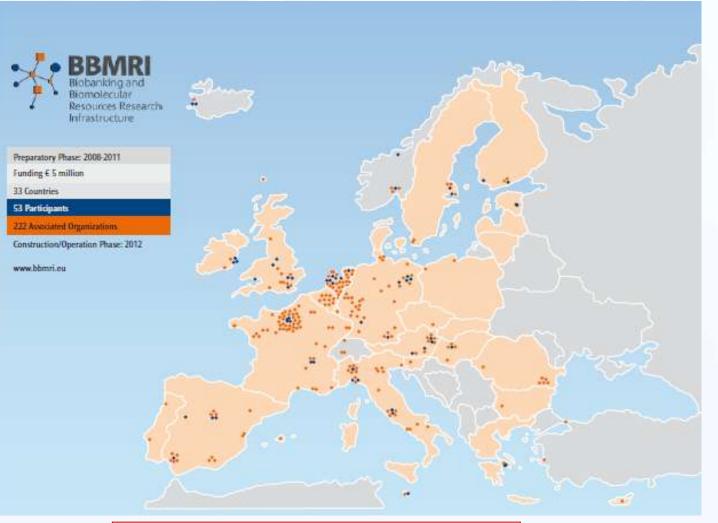
BBMRI	Biobanks
EATRIS	Translational research
ECRIN	Clinical research
ELIXIR	Biological information
EISBI	Systems biology
EMBRC	Marine BRC
Eu-Openscreen	Openscreen platforms
Eu-Bioimaging	Biomedical imaging
ERINHA	Highly pathogenic agents
INFRAFRONTIE	Model mamm. genomes
INSTRUCT	Structural biology





# **Preparatory** Phase





BBN Biobani of Italy

BBMRI.it Biobanking and BioMolecular Resources Research Infrastructure of Italy



## **BBMRI**

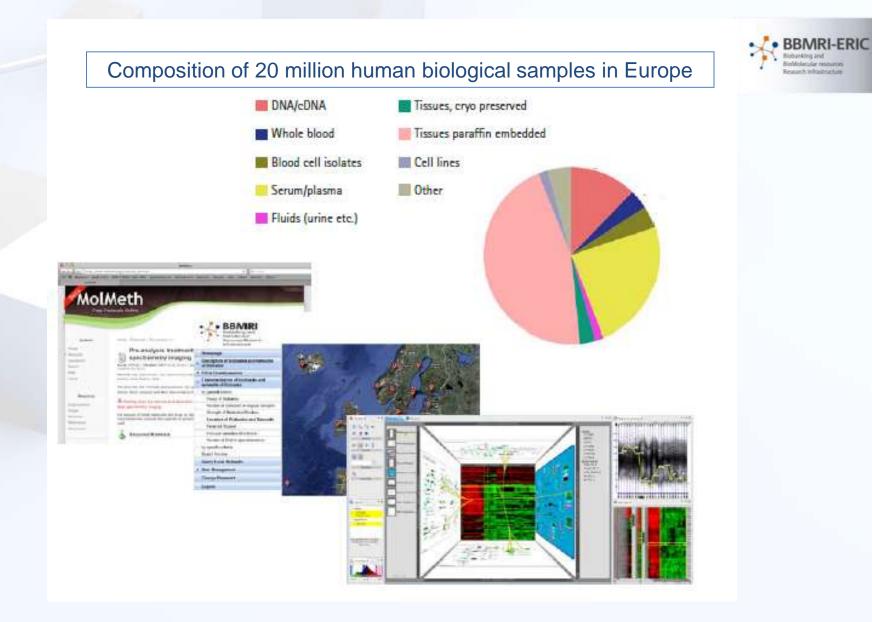


**Missione:** assicurare l'accesso equo e regolato alle risorse biologiche e garantire una gestione appropriata sia da un punto di vista etico che tecnologico, promuovendo la cultura della qualità dei campioni biologici e della innovazione biotecnologica. BBMRI funge da interfaccia tra le biorisorse (campioni e dati) e la ricerca biomedica di eccellenza.

**Struttura:** Infrastruttura di Ricerca diffusa con un Hub europeo (Graz, Austria) che si interfaccia con gli Hub Nazionali (nodi nazionali) e funge da erogatore di servizi attraverso i common services. Risponde alle esigenze del privato con piattaforme di eccellenza tecnologiche (cosiddetti Expert centers).







BBMRI.it Biobanking and BioMolecular Resources Research Infrastructure of Italy

# A TERMINO B I C O C C A



## BBMRI-ERIC: A pan-European Infrastructure

**12 Founding Members:** Austria, Belgium, Czech Rep., Estonia, Finland, France, Germany, Greece, Italy, Malta, Netherlands, Sweden **4 Observers** Norway, Poland, Switzerland and Turkey



Biobanking and BioMolecular Resources Research Infrastructure of Italy



EUROPEAN

Research Area



# The ERIC Legal Framework

COMMUNITY LEGAL FRAMEWORK FOR A EUROPEAN RESEARCH INFRASTRUCTURE CONSORTIUM (ERIC) Internationally recognized legal entity

Establishement of operational sites in different Member States that operate under one legislation

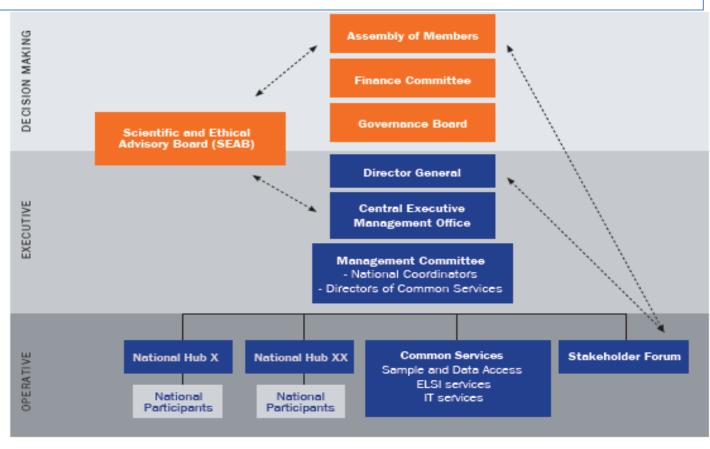
VAT exemption







### Governance BBMRI-ERIC



Established under the ERIC legal framework







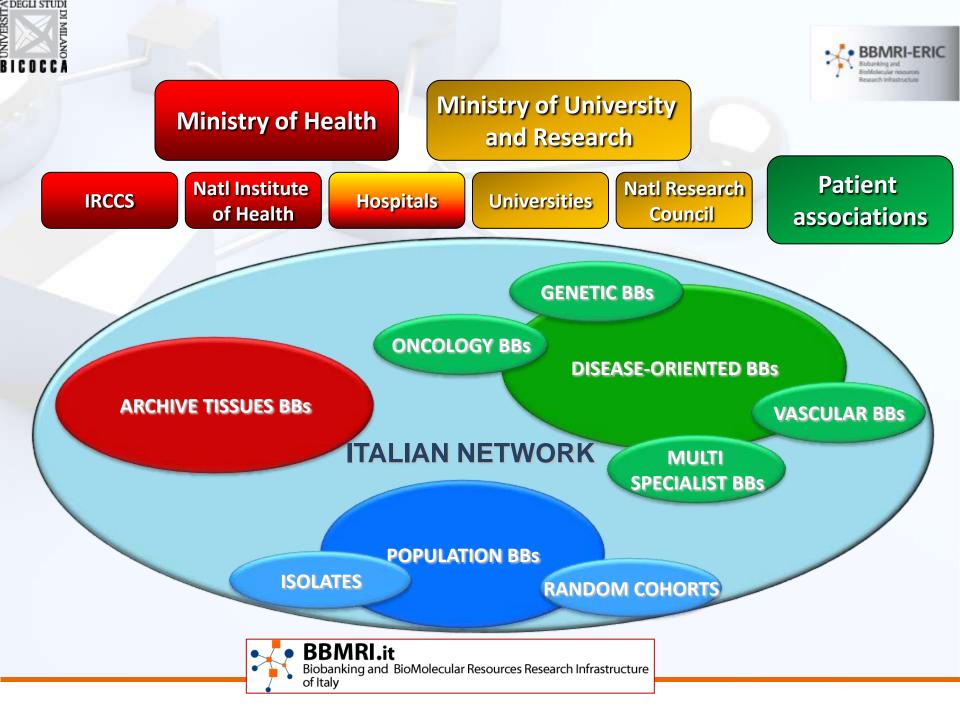
Biobanking and BioMolecular Resources Research Infrastructure of Italy







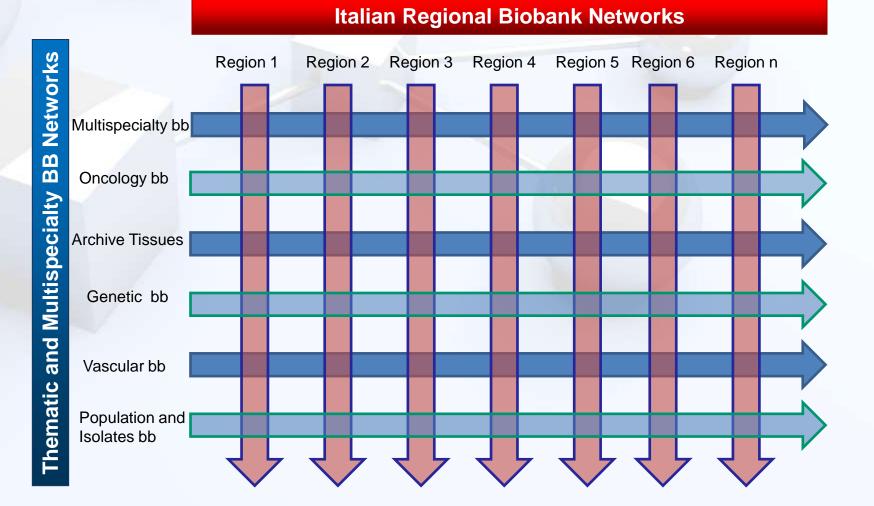






### **BBMRI.it ARCHITETTURA A MATRICE**





BBMRI.it Biobanking and BioMolecular Resources Research Infrastructure of Italy



# **BBMRI-IT Facts and figures**



BBMRI.it è una infrastruttura distribuita che include BBs, Centri di risorse Biologiche e Collezioni collocati in diverse regioni italiane

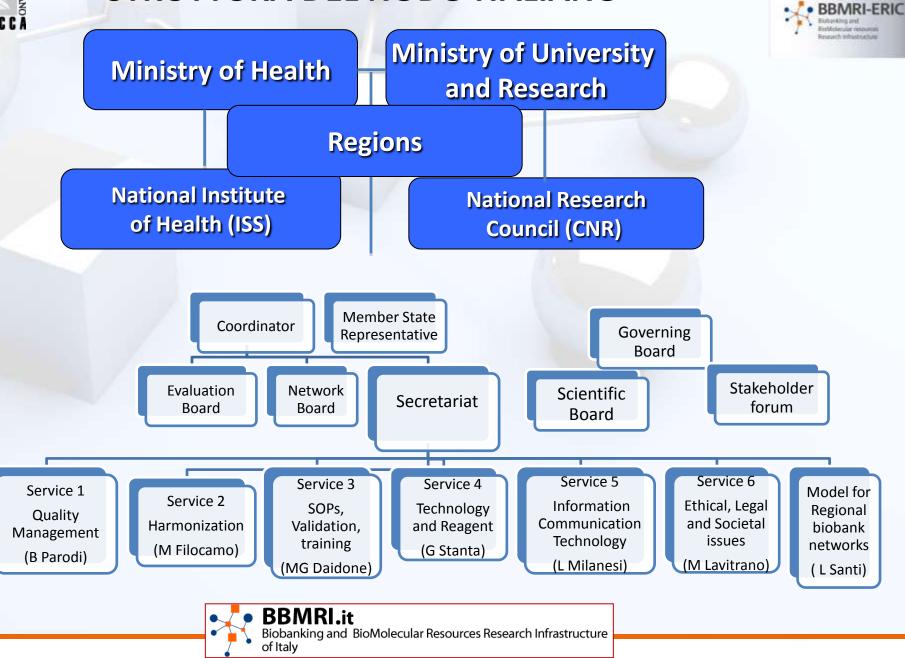
- 18 Università
- 23 IRCCS
- 40 Ospedali
- ➡ 8 associazioni di Pazienti
- circa 90 BBs, Centri di risorse Biologiche e Collezioni

290 GRUPPI DI RICERCA HANNO DICHIARATO INTERESSE AD ADERIRE A BBMRI-it





### **STRUTTURA DEL NODO ITALIANO**





# **BBMRI.it Obiettivi**



**BBMRI.it obiettivi principali:** 

- Portare le collezioni di risorse biologiche e le BBs italiane ad un nuovo livello di coordinamento e di efficienza
- Provvedere Common Services
- Offrire un migliore accesso agli utilizzatori del settore pubblico e privato
- Contribuire alla infrastruttura pan-Europea di ricerca BBMRI-ERIC





# **BBMRI.it Obiettivi**



per raggiungere gli obiettivi:

Migliorare l'interoperabilità dei database di ricerca
Facilitare la partnership pubblico/privata
Sviluppare le condizioni per assicurare la sostenibilità delle BBs

- •Armonizzare SOPs e elaborare tools appropriati
- •Implementare i criteri di quality management
- •Sviluppare il nodo nazionale nell'ambito di BBMRI-ERIC



Activities		2013		2014				2015			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
community building	ОК	ОК	ОК	ОК	ОК	ОК	ОК				
establishment of the managment committee		ОК									
First survey on biobanks											
planning BBMRI.it architecture		ОК	ОК	ОК	ОК	ок	ОК				
lounch of BBMRI.it infrastructure			ОК								
lounch of common services			ОК								
lounch communication platform			ОК								
Self assessment on-line questionnaire			ОК	ОК	ОК	ОК	ОК				
Evaluation of the self assessment on-line questionnaire				ОК	ОК	ОК	ОК				
BRIF questionnaire assessment				ОК	ОК	ОК	ОК				
SOPs harmonization & standardization				ОК	ОК	ОК	ОК				
Handson: Biobanks					ОК	ОК	ОК				
Biobank web-pages					ОК	ОК	ОК				
Common services: information desk					ОК	ОК	ОК				
ELSI: information desk					ОК	ОК	ОК				
Information desk about research projects					ОК	ОК	ОК				
National catalogues of facilities & services for BBMRI-IT						ОК	ОК				
Involvement of Ethics Committees						ОК	ОК				
h2020 partnership						ОК	ОК				
Implementation of quality management criteria						ОК	ОК				
approval partner charter							ОК				
Training courses (even in quality control)											
Developing criteria for accreditation and certification											
Information desk: statistical approaches											
Proficiency testing											
Promoting a certification program											
dentification of qualified auditors											-





- Prima fase: Censimento. Mappare e selezionare le biobanche italiane e stratificarle in base al livello di qualità e di ricchezza in campioni e dati associati.
- Seconda fase Valutazione. Identificare le biobanche che non sono semplici collezioni di campioni. Questionario on-line, valutazione.
- Terza fase: firma della BBMRI Partner Charter. Ciascuna Biobanca / Centro di Risorse Biologiche compliant con le best practices nazionali e internazionali diviene membro effettivo di BBMRI.it

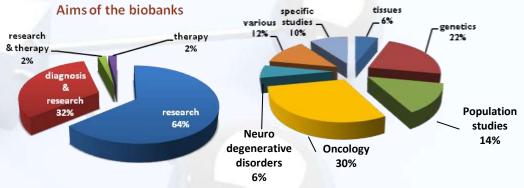


### **Results of the first survey**

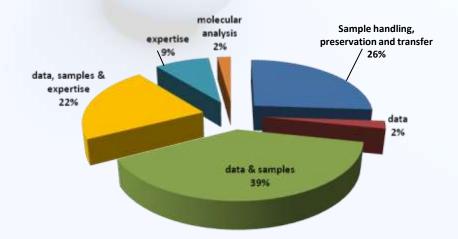
- 16% were already operative before 1990, 56% were set up after 2001
- 43% have more than 10.000 cases collected
- 66% collect at least 3 different types of samples per subject (frozen samples, FFPE, blood derivatives, nucleic acids, cell lines)
- 77% participate in regional, National and/or International networks
- Most are disease oriented (about half cancer and genetic diseases)
- A vaste majority is ready to offer services to the network (samples, data, molecular analysis, expertise, support in handling, preservation, transfer)



Focus of the biobanks



Products and services offered to the network



### **SELF ASSESSMENT ON LINE QUESTIONNAIRE**



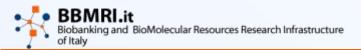
# Identifying Italian Biobanks who give assurance of:

- Service to the scientific community
- Interoperability
- Compliance with ethical and legal standards
- Compliance with National and International best practice



Aim 1

**Creating a network of Biobanks appropriate to sign the Partner Charter of BBMRI Europe** 



### Outcome of the on-line self assessment of italian Biobanks



- 83 applicants have compiled the questionnaire
- **78** Biobanks have been selected as "real biobanks", recognized by their host institutions and willing to sign the Partner Charter
- 23 Biobanks have been directly contacted
- **64** have a Quality system compatible with the requirements of the Partner Charter
- **14** are improving their Quality system and are assisted by the Quality common service of the Italian node



Partner Charter The European Research Infrastructure for -Banking and Biomolecular Resources Partner Charter

#### Purpose and applicability

The BBMRI-ERIC Partner Charter should define the most important cornerstones for the participation of biobanks or biological resource centres (Partner) that are associated with BBMRI-ERIC to foster scientific excellence, guarantee interoperability, and compliance with ethical and legal requirements. The Partner Charter is binding for any Partner of the BBMRI-ERIC and shall be agreed between national BBMRI-ERIC nodes and the Partners. Participation of a Partner in BBMRI-ERIC is non-exclusive and has no effect on any activity of a Partner outside of BBMRI-ERIC.

#### Principles

#### Primacy

BBMRI-ERIC acknowledges the primacy of national and European legislation and respects the jurisdiction of competent authorities.

#### Access policy

Samples and data need to be accessible through a clear access procedure compliant with the general access procedures and conditions of BBMRI-ERIC. BBMRI-ERIC will foster the establishment of scientific collaborations between authenticated scientific users and Partners. Special access policies can be established for industrial users.

Access to samples and data will honour commitments to donors and follow the principles of "fair access" and scientific excellence. Access in the context of research projects performed within BBMRI-ERIC will only be provided for specified research projects, in accordance with the terms of the consent given by the participant and after approval of the research project by a Research Ethics Committee (REC). Access has to be compliant with regulations of BBMRI-ERIC Partner biobanks, and Partner biobanks have to decide whether access can be granted for a specific project. This decision has to follow transparent and non-discriminating decision making procedures. Noteworthy, the establishment of high quality research collaboration is the preferred format for access.

#### Data protection and management policy

BBMRI-ERIC and Partners will not make public any information of research projects performed through BBMRI-ERIC that can be directly related to an individual. Information on individuals will only be made accessible to authenticated scientific users in a coded or anonymized fashion in the context of specific research projects and upon approval by a competent Research Ethics Committee (REC) in compliance with national and EU legislation, and subject to the BBMRI data access conditions. Partners will support integration of their data management system with that of BBMRI-ERIC by complying with the BBMRI-ERIC information requirements. The initial information requirements are realised as the expected minimal common data content and data structure in relevant databases. No access will be provided for non-research purposes (such as forensic, insurance or employment purposes), except pursuant to a court order.

#### Informed consent

BBMRI-ERIC and Partners will, at any time, honour commitments owed to donors. Partners shall aim at prospectively implementing the OECD Guidelines for Human Biobanks and Genetic Research Databases for issues related to informed consent, as appropriate ad subject to the primacy of national and EU legislation.

#### Infrastructure and management

Partners will commit themselves to future implementation of the OECD best practice guidelines for Global Biological Resource Centres Networks. These guidelines define in particular requirements concerning the following issues:

- Infrastructure (building, facility)
- · Management (responsibilities and qualifications)
- Traceability
- Biosecurity
- · Data protection
- · Minimal and recommended datasets
- · Quality management and certification

#### Quality management

All Partners should commit themselves to implement quality management /assurance procedures compliant with OECD best practice guidelines for Global Biological Resource Centres Networks. SOPs should be established and made publicly available for all processes related to sample collection, processing, storage, retrieval and despatch. It is recommended that SOPs should follow the procedures as specified in the WHO/IARC guidelines for biological resource centres for cancer research whenever feasible. A unique BBMRI biobank (collection) identifier should be provided (see Kauffman, F & Cambon-Thomsen, A. Tracing biological collections: Between books and clinical trials. JAMA 2008, 299: 2316-2318). Criteria for the identifier will be provided by BBMRI-ERIC. Partners should allow external audits by BBMRI-ERIC.

#### Reporting

Partners will provide annual reports to the National Node Director on which research projects have been supported and information on the outcome that partners have received (e.g., publications, patents). Projects that have been supported by BBMRI-ERIC should acknowledge the contribution of BBMRI-ERIC in any publication according to the principles of good scientific practice. Partners will provide a yearly updated inventory to the National Node Director on the type, content and quality of collections and resources they are holding.

#### Charges

BBMRI-ERIC will pursue its principal task on a non-economic basis. However, it may carry out limited economic activities, provided that they are closely related to its principal task and that they do not jeopardise the achievement thereof. Biobanking-related services might be subject to cost recovery. Costs can be recovered for staffing, consumables, licensing, equipment servicing/maintenance. No patient samples or data are sold for profit. Supply of samples by or to external commercial organisations shall be conducted in accordance with the Community Framework for State Aid for Research and Development and Innovation (2006/C 323/01).



Biobanking and BioMolecular Resources Research Infrastructure of Italy

		BBMRI-ERI Biblioteking and BioMeleculer resources Research inflastricture
The Director / Respons	ible / Curator of the Biobank / BRC:	
		acronym:,
partner charter is esse ethical and legal require	ot the above partner charter. The <u>Biobank</u> ential to foster scientific excellence, guaran ements, and is required in order to take pa f Directors of BBMRI.it	ntee interoperability, and compliance with
The Director / Respons	sible / Curator of the Biobank / BRC:	
Name:	Signature:	
Place:	Date:	

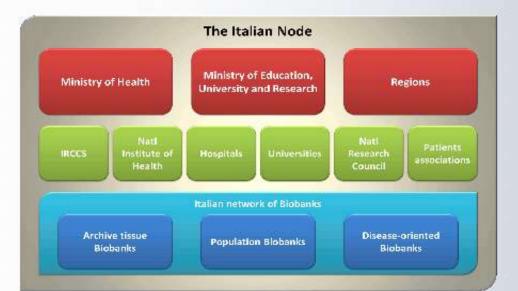


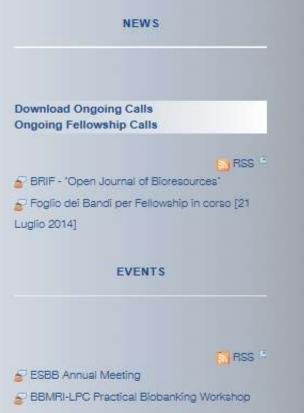
BBMRI-IT is a research infrastructure involving biobanks and biological resource centers located throughout Italy. The Italian node BBMRI-IT includes 18 universities, 23 IRCCS, 40 hospitals, many associations of patients and about 80 bioresources among biobanks, collections and biological resource centers.

The main objectives of the node BBMRI-IT are:

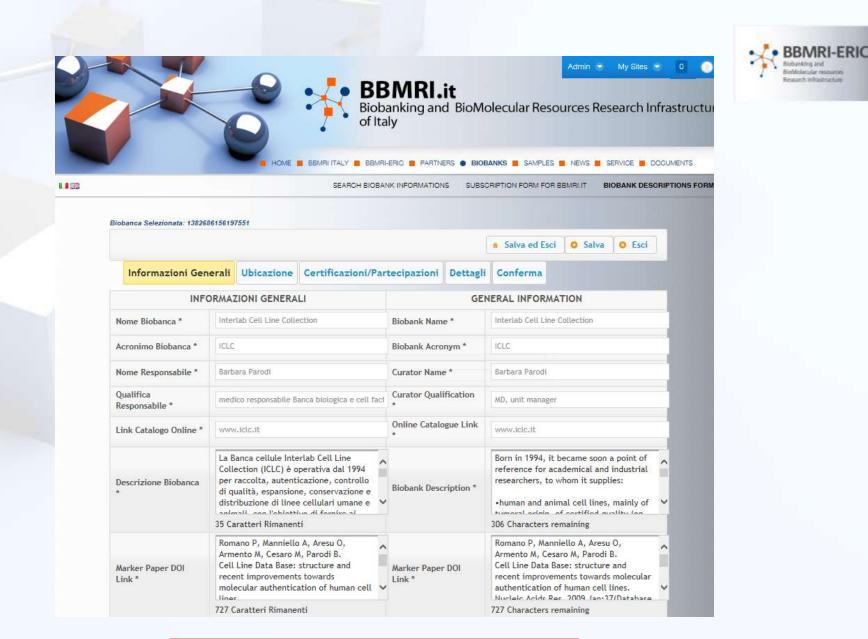
- coordinating the activities of biobanks in order to promote their efficiency and interoperability;
- · providing new services;
- · improving access for users of the public and private sectors;
- · contributing to the pan-European research infrastructure BBMRI-ERIC activities.

In particular, the activities of BBMRI-IT are aimed at harmonizing the standard operating procedures (SOPs) of biobanks, implementing the quality management system and encouraging public/private partnerships, with the ultimate aim to foster biobanks' economic sustainability.





Join in the BBMRI.it network



BBMRI.it Biobanking and BioMolecular Resources Research Infrastructure of Italy

< DEGLI STUDI

BICOCCA

NIVERSI

E

MILANO

Informazioni Generali Ubicazione Certificazioni/Partecipazioni Dettagli Conferma

GENERAL INFORMATION				
Biobank Name *	Interlab Cell Line Collection			
Biobank Acronym *	ICLC			
Curator Name *	Barbara Parodi			
Curator Qualification *	MD, unit manager			
Online Catalogue Link *	www.iclc.it			
	Born in 1994, it became soon a point of reference for academical and industrial researchers, to whom it supplies: •human and animal cell lines, mainly of tumoral origin, of certified quality (on-line catalogue); •quality control service, detection and eradication of mycoplasma; •identification service: authentication of human cell lines through STR profile			
	<ul> <li>information and technical-scientific support on cell line availability at the international level, functional features, transport of biological samples;</li> </ul>			
Biobank Description *	•safe deposit for tissue samples, cell lines and hybridomas			
	• patent deposit of cell lines and hybridomas: International Deposit Authority (IDA) under the Budapest Treaty.			

BIOBANK LOCATION				
Institute *	IRCCS AOU San Martino - IST			
Institution Typology *	IRCCS, oncology			
Laboratory/Departmer	t * s.s. Banca biologica e cell factory			
Address *	Largo Rosanna Benzi, 10			
Region *	Liguria			
ZIP Code *	16132			
City *	Genoa			
E	BIOBANK CONTACTS			
Phone *	010 5558474			
FAX *	010 5558293			
E-Mail *	barbara.parodi@hsanmartino.it			
Web Site *	www.iclc.it			
Marker Paper DOI Link *	Romano P, Manniello A, Aresu O, Armento M, Cesaro M, Parodi B. Cell Line Data Base: structure and recent improvements towards molecular authentication of human cell lines. Nucleic Acids Res. 2009 Jan;37(Database issue):D925-32. doi: 10.1093/nar/gkn730. Epub 2008 Oct 15.			

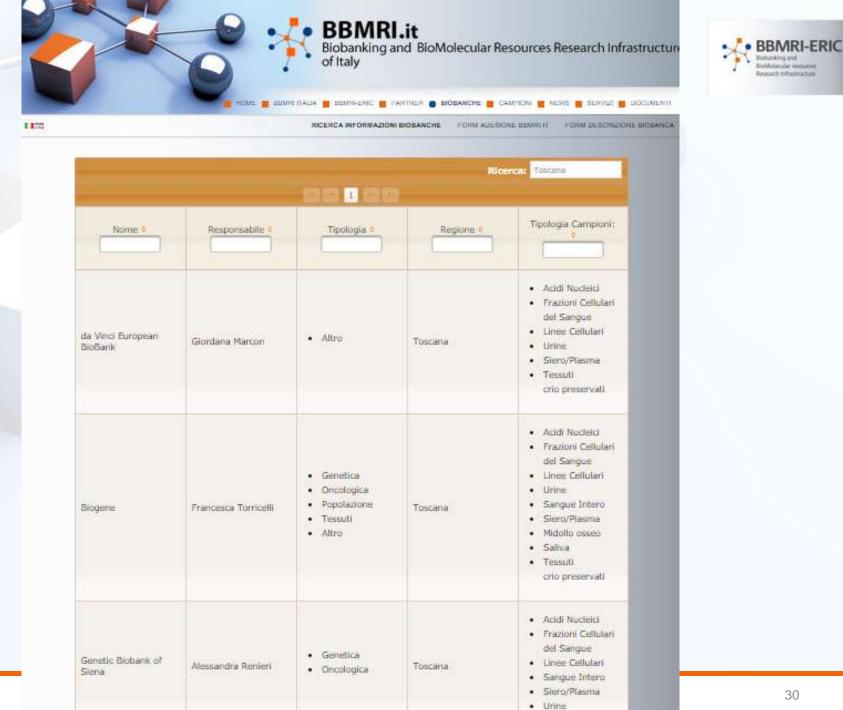
**BBMRI-ERIC** dur rescurior Resourch infrastructure CERTIFICATION/ACCREDITATION/RECOGNITION IRCCS Certified UNI EN ISO 9001:2008 BUREAU VERITAS Certification \* 949 Characters remaining International Deposit Authority under Budapest treaty, WIPO Accreditation \* 940 Characters remaining Reference lab Int. J. Cancer for human cell lines authentication through STR profile Recognition \* 916 Characters remaining NETWORKING Ligurian Biobank Network Regional Networking \* 976 Characters remaining RIBBO, CRB-NET National Netwoking \* 986 Characters remaining BBMRI, MIRRI, GBRCN, CABRI

International Networking \*

28

INFORMATION IN DETAIL • collection and distribution of human and animal cell lines, mainly of tumoral origin, of certified quality (see on-line catalogue);		Oncological     Genetio     Popolation     Tissues     Pathology		BBMRI-ERIC Roberking and Battlefecular resources Research inflastructure
animal cell lines, mainly of tumoral origin,		Popolation Tissues	-	
<ul> <li>quality control service, detection and eradication of mycoplasma;</li> <li>identification service: authentication of human cell lines through short tandem repeat (STR) profile</li> <li>information, technical and scientific support on cell line availability at the international level, functional features,</li> </ul>	Biobank typology *	Cytology Gynecology Obstretio Transfusion Transplant Clinical	Sample typology details * Informed consent form link *	Human and animal continuous cell lines, mainly of tumor origin 438 Characters remaining ck
Activities and Services * • patent deposit of cell lines and hybridomas: International Deposit Authority (IDA) under the Budapest Treaty.	List of diseases *	IVF Bacteriology Virology Other Human and animal tumors 977 Characters remaining	Recorded data *	<ul> <li>Personal data</li> <li>Ethnical</li> <li>Clinical/Phenotype/Instrumental</li> <li>Environmental</li> <li>Genetic</li> <li>Biological sample data</li> <li>Follow-up data</li> <li>Biobank curator. The established cell lines can be grown for several passages.</li> </ul>
	Sample typology *	Nucleic Acid Full blood Cellular blood fraction Serum/Plasma FTPE tissue Cryo-preserved tissue Cell Line Marrow Urine Saliva	Evaluation of Requests * Sample Distribution *	Therefore there is no need for project prioritization. 867 Characters remaining Free Total Cost-recovery Partial Cost-recovery (distribution service) Other
		CSF DNA RNA		29

Other



### Strumenti Web

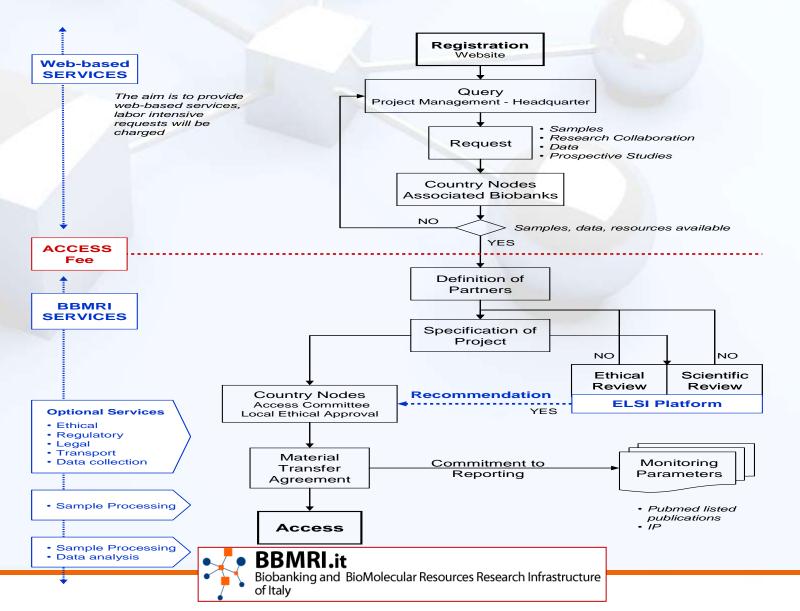
BBMRI Italia mette a disposizione delle biobanche e dei ricercatori un elenco ragionato di strumenti web utili per le attività di ricerca che prevedono l'uso di campioni biologici. Alcuni di questi sono stati prodotti durante la fase preparatoria di BBMRI o di altre infrastrutture europee. Le descrizioni sono in inglese perché tratte dai siti web. Segnalateci (italy@bbmri.it) altri strumenti utili e li aggiungeremo alla lista.

MIAPAR	MIAPAR is intended to be used as a guideline for experimentalists who wish to unambiguously describe <b>protein affinity reagents</b> and the protein targets (including but not limited to Ab/Ag interactions). It specifies the minimum amount of information which should be present, o directly traceable, in any publication, database entry or commercial catalogue describing either the production or use of affinity reagents such a antibodies, aptamers, protein scaffolds etc.
MOLMETH	Molmeth, the <b>Molecular Methods Database</b> , is a free and powerful tool. It has unique collaborative features for researchers to publish and improve methods or lab protocols online.
<u>CLIMA</u>	The <b>Cell Line Integrated Molecular Authentication database (CLIMA)</b> links available authentication data to actual cell lines distributed by cell banks. It was designed in the frame of the Cell Line Data Base, a well-known reference information source on human and animal cell lines CLIMA includes STR profiling obtained by using different platforms; the end users can retrieve data on cell line authentications performed by different cell banks.
BioSharing	BioSharing works to map the landscape of <b>community developed standards in the life sciences</b> , broadly covering biological, natural and biomedical sciences.
Legalpathways	The objective of this platform is to serve as a dynamic, online, grass roots platform for sharing, discussing, validating and issuing <b>authoritative</b> <b>and reliable legal forms and standards</b> to aid the BBMRI community in navigating the legal pathways that govern its pan European, cros border, multi-jurisdictional infrastructure and operations. The platform is to unearth any existing knowledge, expertise and templates currently in use by (prospective) BBMRI Members and Partners.
<u>hSERN</u>	Human sample exchange regulation navigator, a web based information tool on legal requirements for exchanging biological samples
MIABIS	Minimum Information About Biobank data Sharing
CoBiBa	Connecting BioBanks

# THE COCCA

### Come si accede ai servizi di BBMRI











### **Common Service**



### **Common Technology and Reagent Services**

- Establish a National catalogue of facilities and services for the biobank network
- Identify Expert Centres

### **Giorgio Stanta**

### Catalogue of services offered by BBs to the network

- **DNA and RNA extraction**
- supply of genetic material for method validation
- cell line production ٠
- molecular characterization of biological samples
- cell line authentication
- validated mycoplasma QC ٠
- cryopreservation biological samples
- preparation and storage pathogens



 consultancy biological samples transport (IATA)

- statistical analysis
- counseling SOPs preparation
- counseling ethical issues
- data analysis
- data mining
- training of operators for cryobiology
- training of operators for biobanking

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### **Common Service**



### **IT Services**

- Sustain the matrix architecture of the network (links among BBs into Regional and thematic networks)
- Offer common services to the network
- Promote collaborative studies at the National and International levels
- Guarantee safe transfer of information
- Provide visibility to Italian BBs
- Adopt BBMRI standards and create the interface to National BBs
- Maintain the Lexicon BBMRI portal for multi-lingual BBs terminology definition

Luciano Milanesi





### **Common Service**



### Ethical, Legal and Societal Issues

- Define the status of bioresources
- Define the status of BBs
- Promote public consultation
- Establish the informed consent form
- Define the access to bioresources
- Regulate patentability
- Set up and monitor good practices in biobanking
- Provide in-formation and permanent training
- Biobanking 2.0

Marialuisa Lavitrano



## Analisi dei costi e sostenibilità



	Clinical data from GP
	Questionnaire and survey
	Imaging
Pre-banking data	Histopathology and cytology
	Serological tests
	Communication, information to donors and informed consent
	Recording, processing and data management (e.g. LIMS)
	Storage and updating clinical data
	Data release
	Monitoring, audit
	Others
	Collect
Collection of biological specimens	Accrual
Ŭ I	Processing of samples
	Storage
	Distribution and transport
	Despatch management
	Quality control
	Monitoring/Audit
	Others
	Recording, storage and data management
Collection of data related to	Data analysis and linking
	Quality control and computer system engineering
biological specimens	Despatch management
	Monitoring, audit
	Others
	Project management, advisory, study design
	Recruitment
E	Data generation
Expertise	Data analysis and statistics
	SOPs and support
	Processing
	Storage
	Quality management, certification and accreditation, audit
	Education and training
	Communication and public engagement
	Others
	Financial and administrative management
	Scientific management and strategy
Administration and management	Loads and running charges
Administration and management	Maintenance of equipment and consumables
	Internal R&D
	Investments
	Ethics and regulatory issues
	Partnership development, business development, contracts, networking
	Others

## Milan – a city in the heart of Europe





# The HandsOn: Biobanks 2015 will be hosted by BBMRI.it and be a part of Expo 2015 in Milan, Italy



