



BBMRI-ERIC

Biobanking and
BioMolecular resources
Research Infrastructure

Education & Training for Research Infrastructures - Strategy and Implementation

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ESBB 2015, October 1st, 2015

Summary

1. Why education & training matters?
2. Strategy
3. Implementation

Definition

Education is the process of facilitating learning. Knowledge, skills, values, beliefs, and habits of a group of people are transferred to other people, through storytelling, discussion, teaching, training, or research.

Training is teaching, or developing in oneself or others, any skills and knowledge that relate to specific useful competencies. Training has specific goals of improving one's capability, capacity, productivity and performance.

Education & Training

E&T is the backbone of a knowledge-based society. Every scientific field or technological sector has developed over time a policy framework that describes the necessary skills and training needs of its employees. No such policy framework exists for biobanking in Europe. There is a great need to structure E&T activities in this growing field taking into account the existing courses and providers.

Current status

Most – if not all – staff in Research Infrastructures in general is trained on the job as formal education paths do not or only randomly exist.

Leadership and executive members of RIs come often from research and have no or little management training.

Because of its distributed structure staff of International RIs of the ESFRI Roadmap require a distinct set of competencies to deal with issues such as multinational operations, transnational access and data flow, different social security systems, different cultures, different legal systems etc.

Scattered landscape in biobanking E&T

- Few universities offer formal education for biobanking staff at a Masters or certificate level;

Master / certificate

- Master in Biobanking Management (University of Nice & Catholic University of Lyon)

Master in Biobanking Management



**A master in Biobank Management: a joint program
between the University of Nice Sophia Antipolis and
the Catholic University of Lyon (France)**

*E Gormally, I Hardy, P Hofman
ESBB – Leipzig
23rd of October 2014*



Master / certificate

- Master in Biobanking Management (University of Nice & Catholic University of Lyon)
- Master in Biobanking (Catholic University of Valencia)

Master in Biobanking




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Master / certificate

- Master in Biobanking Management (University of Nice & Catholic University of Lyon)
- Master in Biobanking (Catholic University of Valencia)
- Certificate in Principles of Biobanking (University of Luxembourg)

Certificate in Principles of Biobanking

Certificate - Principles of Biobanking

Biospecimens have become a **strategic tool** for healthcare and medical research, research and conservation in biodiversity, animal, plant and microbial biology as well as in translational research and systems biology through all types of -omics applications.

Optimal management of biospecimens and bioresources through biobanking for future research and conservation has now become a **new discipline**.



Aims

- To provide the theoretical, operational and practical knowledge required to facilitate the activities of existing biobanks and assist the creation of new ones.
- To encourage bilateral exchange of knowledge and skills across different thematic biobanking groups involved in biospecimen conservation, storage, science and research.

Learning Outcomes

Persons who have completed this course will:

- Understand in depth and produce an oral synthesis of the common principles of practical biobanking.
- Put different types of biobanks in perspective and draw conclusions about the theoretical underpinnings that were operational.
- Apply the scientific basis of biobanking/biospecimen research in Standard Operating Procedure (SOP) development and implementation and in research exploitation of samples.
- Question the logistical, practical and technical steps of biobanking, and evaluate their coherence and adequation.
- Compare different reports on biobank risk management and mitigation.
- Develop Best Practices/SOPs.
- Validate biobank protocols, training and technology transfers.
- Analyze adequation to biobank Quality Management Systems (QMS) and the principles of certification, quality assurance and 3rd party ISO accreditation.
- Master the regulatory, legal and ethical aspects of biobanking.
- Produce biobank cost analysis and recovery reports.

Scattered landscape in biobanking E&T

- Few universities offer formal education for biobanking staff at a Masters or certificate level;
- Some universities offer short courses with or without ECTS credits;

Short courses (examples)



UNIVERSITY OF
COPENHAGEN



BBMRI.se
 BioBanking and
 Molecular Resource
 Infrastructure of
 Sweden

Medical Science Fundamentals Research

17 – 21 August 2015
Groningen, The Netherlands

Biobanks and large population cohorts: exploring disease origin, interactions, and developing new therapies

HOW TO BUILD A BIOBANK – AT THE NATIONAL LEVEL

This interactive 3 day course has been designed for biobank staff, biobank managers, clinicians, researchers, and policy makers. This course is a mixture of presentations, practical exercises, and discussion!

This course is set up to:

- Deliver the theoretical, operational knowledge essential to establish and manage emerging biobanks.
- Transfer best practice principles to biobank staff, clinicians and interested persons.
- Encourage exchange of knowledge and experiences between biobanking activities from bioscience and research.
- Enhance research quality in an emerging biobank.

Insights:

- Definitions and types of biobanks
- Governance types and possibilities
- Biobanking ethics, privacy, information management
- Design and services of a biobank
- Cost calculation and funding
- Quality management and procedures
- Sample collection and processing
- Sample storage and retrieval
- Biobank data systems and record keeping

PhD seminar:

Biobanks and Big Data: Possibilities and Challenges

PhD course: 2nd-6th November

Symposium: 3rd-4th November

Medicon Village and Elite Hotel Ideon. Lund, Sweden

COURSE DESCRIPTION:

The object of this 5-day PhD seminar is to introduce and deepen the students understanding of the many facets related to biobanking. The goal is to provide an interdisciplinary perspective on the historical, philosophical, ethical, legal, social, technical and cultural aspects related to the collection, storage, use and dissemination of human tissue samples and health information. Offered as a cooperative PhD course by the University of Copenhagen and the Lund University, and coordinated by BBMRI.se the course aims to provide students with a core set of tools to better understand the multifaceted nature of global biobanking and big data. After completion of the course the students will have a broad understanding of the technical, ethical, legal and social aspects of biobanking, as well as the challenges associated with the governance of big data within these activities. The course will also provide the students with the opportunity to network with student from Sweden and Denmark, as well as a broad spectrum of international speakers. The course will also offer site visits to the Danish National Biobank and the Beijing Genomics Institute in Copenhagen. Travel costs will be covered by the PhD course.

Scattered landscape in biobanking E&T

- Few universities offer formal education for biobanking staff at a Masters or certificate level;
- Some universities offer short courses with or without ECTS credits;
- In most universities biobanking aspects are “hidden” in more general training courses or are just a minor aspect
- Focus is on technical aspects, little on ELSI, IT and almost nothing on management

Strategy

The mission of Working Party is to jointly develop a policy framework for Europe and beyond in the field of E&T for biobank employees and the user community, deliver a European curriculum, sustainability, access and training.

Goals

This mission can only be achieved once a full landscape of existing activities is available, the needs for E&T are collected and skill sets are defined. The goals are:

- Map the existing E&T landscape of Europe in field of biobanking
- Define the skill sets of Biobanking employees incl. Manager, Operator, Quality Manager, IT systems operator, ethicists, project nurses etc.
- Develop with interested Universities European Curricula for the different levels
- Coordinate if requested providers of short courses in the field for Continuous Professional Training

Implementation

Within the first wave of H2020 project applications MP is the Work Package Leader of the Training WP within the Coordinated Research Infrastructures Building Enduring Life-science services (CORBEL) project and the Coordinator of the Research Infrastructures Training Programme (RItrain). Both applications have been developed to define the competency profiles of both operators (CORBEL) and managers (RItrain) of RIs.

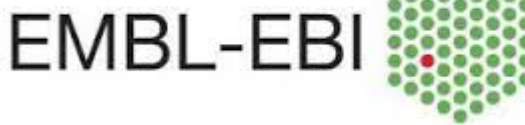
Rltrain

Project Number ¹	654156	Project Acronym ²	Rltrain
One form per project			
General information			
Project title ³	Research Infrastructures Training Programme		
Starting date ⁴	01/09/2015		
Duration in months ⁵	48		
Call (part) identifier ⁶	H2020-INFRA supp-2014-2		
Topic	INFRA supp-3-2014 Strengthening the human capital of research infrastructures		
Fixed EC Keywords	Science education, Training		
Free keywords	Research Infrastructure, Leader, Manager, Competency profile, Education & Training, CPD		
Abstract ⁷			
<p>There has never been a greater need for skilled managers and operators of research infrastructure (RI). Europe must develop the workforce that will turn ~50 nascent RIs with sites in different countries into powerhouses of support for major projects comparable to understanding the blueprint of life or discovering new subatomic particles. Rltrain will develop a flagship training programme enabling RIs across all domains to gain expertise on governance, organisation, financial and staff management, funding, IP, service provision and outreach in an international context. It will be designed and delivered by experts who have set up and managed RIs from concept to maturity. We will define competencies required by RIs through consultation with their senior managers. The resulting competency framework will underpin a Bologna-compliant degree, the Master in Research Infrastructure Management, with three delivery routes. (1) Professionals working in RIs (or organisations representing them) can dip into the content, focusing on areas where there is most need. (2) Management teams can take the course as an organisation, dividing modules between them to gain a certificate for the RI. This will flag the RI as an organisation that values staff development, improving its attractiveness as an employer. (3) Recent graduates and others wishing to enhance their employability can take a full master's degree. Course content will include webinars led by senior managers of RIs. A staff-exchange programme will catalyse exchange of best practice and foster cooperation to develop a mobile work force effective across many RIs. By the end of the project we will be delivering a master's curriculum funded through course fees. Others with an interest in adopting it will be encouraged to do so, providing a means of expanding the programme. Europe's research community and global collaborators will gain from world-class facilities to support excellent, high-impact research to benefit humankind.</p>			

Rtrain objectives

1. Definition of required competencies in distributed RIs throughout the lifecycle of an RI, from the initial preparatory phase through to operational maturity.
2. Mapping of these competency requirements to existing training courses and programmes.
3. Development and piloting of a comprehensive curriculum, at master's level (EQF level 7), incorporating existing training opportunities and creating new content to fill the gaps.
4. Development of continuing professional development, including a series of webinars based on how real challenges in research infrastructures have been overcome, and a staff-exchange programme.

Rltrain consortium



CORBEL

Project Number ¹	654248	Project Acronym ²	CORBEL
One form per project			
General information			
Project title ³	Coordinated Research Infrastructures Building Enduring Life-science services		
Starting date ⁴	01/09/2015		
Duration in months ⁵	48		
Call (part) identifier ⁶	H2020-INFRADEV-1-2014-1		
Topic	INFRADEV-4-2014-2015 Implementation and operation of cross-cutting services and solutions for clusters of ESFRI and other relevant research infrastructure initiatives		
Fixed EC Keywords	Knowledge infrastructure, NATURAL SCIENCES		
Free keywords	Biomedicine, Health, Research Infrastructure, Medicine, Life-science, ELSI, Data Management, Innovation		
Abstract ⁷			
<p>The social and economic challenges of ageing populations and chronic disease can only be met by translation of biomedical discoveries to new, innovative and cost effective treatments. The ESFRI Biological and Medical Research Infrastructures (BMS RI) underpin every step in this process; effectively joining scientific capabilities and shared services will transform the understanding of biological mechanisms and accelerate its translation into medical care. Biological and medical research that addresses the grand challenges of health and ageing span a broad range of scientific disciplines and user communities. The BMS RIs play a central, facilitating role in this groundbreaking research: inter-disciplinary biomedical and translational research requires resources from multiple research infrastructures such as biobank samples, and resources from multiple research infrastructures such as biobank samples, imaging facilities, molecular screening centres or animal models. Through a user-led approach CORBEL will develop the tools, services and data management required by cutting-edge European research projects: collectively the BMS RIs will establish a sustained foundation of collaborative scientific services for biomedical research in Europe and embed the combined infrastructure capabilities into the scientific workflow of advanced users. Furthermore CORBEL will enable the BMS RIs to support users throughout the execution of a scientific project: from planning and grant applications through to the long-term sustainable management and exploitation of research data. By harmonising user access, unifying data management, creating common ethical and legal services, and offering joint innovation support CORBEL will establish and support a new model for biological and medical research in Europe. The BMS RI joint platform will visibly reduce redundancy and simplify project management and transform the ability of users to deliver advanced, cross-disciplinary research.</p>			

CORBEL WP Training objectives

Our main target audience is technical operators of RIs in BMS RI hubs and nodes. We will focus on the four Cluster areas: data management and integration, physical access, ethics and innovation.

1. Definition of competency requirements;
2. Mapping of existing training;
3. Developing and delivering training to fill the gaps

CORBEL WP9 consortium



Thank you!

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