SHARED SERVICES FOR LIFE-SCIENCE

- simplified access to Europe’s leading life-sciences facilities
- support complex research projects in medical and bioscience research
- provision of life-science innovation pipelines
- expertise in managing sensitive data
New technologies are currently transforming the research in the life sciences. Whole genome sequencing, improved imaging technologies and advances in stem cell research and genome editing drive the development of new model systems for understanding biological mechanisms and pathophysiology. Innovation in data management and systems analysis allows for integration of the biological data that is now generated at an unprecedented scale.

All this provides a solid foundation for the development of novel treatments, but the translation of ground-breaking novel technologies into routine medical care requires a concerted multidisciplinary effort.

The ESFRI Biological and Medical Science Research Infrastructures (BMS RIs) play a central facilitating role in this interdisciplinary approach:

As their fields of work are tightly interwoven they are able to offer the best support (biological material, technologies, expertise) for complex research projects addressing different areas within the life sciences.

<table>
<thead>
<tr>
<th>Biological Sciences</th>
<th>Biological Resources &amp; Production Systems</th>
<th>Medical Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBMRI-ERIC</td>
<td></td>
<td>biobanking</td>
</tr>
<tr>
<td>EATRIS-ERIC</td>
<td></td>
<td>translational medicine</td>
</tr>
<tr>
<td>ECRIN-ERIC</td>
<td></td>
<td>clinical research</td>
</tr>
<tr>
<td>ELIXIR</td>
<td></td>
<td>bioinformatics</td>
</tr>
<tr>
<td>EMBRC</td>
<td></td>
<td>marine biology</td>
</tr>
<tr>
<td>EURO-BIOIMAGING</td>
<td></td>
<td>imaging</td>
</tr>
<tr>
<td>EU-OPENSCREEN</td>
<td></td>
<td>chemical biology</td>
</tr>
<tr>
<td>INFRAFRONTIER</td>
<td></td>
<td>functional genomics</td>
</tr>
<tr>
<td>INSTRUCT</td>
<td></td>
<td>structural biology</td>
</tr>
<tr>
<td>ISBE</td>
<td></td>
<td>systems biology</td>
</tr>
<tr>
<td>MIRRI</td>
<td></td>
<td>microorganisms</td>
</tr>
</tbody>
</table>

Areas in the life-sciences covered by RIs within the frame of CORBEL [adapted from the ESFRI Roadmap 2016]
By creating a platform of user-aligned services, CORBEL will support European research in bridging the translation gap between the understanding of biological mechanisms and innovative medicines and personalised diagnostics and treatments.

**INDIVIDUALLY,**
the services offered by the BMS RIs are critical to their own user communities.

**COLLECTIVELY,**
through CORBEL, they will be transformative across the range of life-science disciplines: from generation of knowledge at the bench to patient treatment at the bedside.
BBMRI aims to improve the accessibility and interoperability of the existing comprehensive collections, either population-based or clinical-oriented, of biological samples from different (sub-) populations of Europe or rare diseases. These collections include the attached data on factors such as health status, nutrition, lifestyle, and environmental exposure of the study subjects.

The key benefits for users of BBMRI-ERIC are fair access to quality-controlled samples and/or data, including expertise in handling these biological resources for scientific purposes (ethical, legal and societal issues as well as quality handling).

**SERVICES OFFERED INCLUDE**
Deposition of resources, IT services, ELSI services (e.g. legal advice tools, ethics check), quality services (e.g. QM consultancy)

**DIRECTOR GENERAL**
Prof. Dr. Jan-Eric Litton

**CONTACT**
contact@bbmri-eric.eu

**WEBSITE**
www.bbmri-eric.eu

**PARTICIPATING COUNTRIES**
AT, BE, CZ, DE, EE, FI, FR, GR, IT, MT, NL, NO, SE, UK

**OBSERVER**
CH, CY, PL, TR, IARC
EATRIS strives to accelerate medicines and diagnostics development by utilising cutting-edge, enabling technologies in early translational research.

The focus is on preclinical and early clinical development of drugs, vaccines and diagnostics. Solutions are provided in the fields of advanced therapy medicinal products, biomarkers, imaging and tracing, small molecules and vaccines.

SERVICES OFFERED INCLUDE
PET Imaging & Tracing, Biomarker development and validation, advanced screening small molecules, GMP production of ATMP, vaccine development

OPERATIONS & FINANCE DIRECTOR
Anton Ussi

CONTACT
antonussi@eatris.eu

WEBSITE
www.eatris.eu

PARTICIPATING COUNTRIES
CZ, DK, EE, ES, FI, FR, IT, LU, NL, NO, SI, SE
ECRIN provides support for the preparation of multinational clinical trials, the validation of study protocols, and trial management. In support of these activities, it develops and maintains freely accessible tools such as databases on regulatory and ethical requirements, outcome measures, and risk-based monitoring.

ECRIN can enable researchers to develop multi-country trials, granting greater access to patients, expertise and resources, leading in turn to faster results with generally applicable findings (i.e. results that can be generalised).

SERVICES OFFERED INCLUDE
Trial preparation, trial management, quality assurance, access to databases (e.g. CAMPUS regulatory and ethical database, medical device outcome measure database)

DIRECTOR GENERAL
Prof. Dr. Jacques Demotes-Mainard

CONTACT
Dr. Christine Kubiak
christine.kubiak@ecrin.org

WEBSITE
www.ecrin.org

PARTICIPATING COUNTRIES
DE, ES, FR, HU, IT, NO, PT

OBSERVER
CZ, CH
Life science experiments and research produce large amounts of data. Some of these vast datasets are highly specialised and are only available to researchers within the country in which they were generated.

The aim of ELIXIR is to orchestrate the collection, quality control and archiving of these large amounts of valuable data, and provide open access to researchers in any part of the world, with the objective to facilitate discoveries that benefit humankind.

SERVICES OFFERED INCLUDE
Access to key life-science data resources and tools, standards and their interoperability, data management support, technology transfer

ELIXIR DIRECTOR
Dr. Niklas Blomberg

CONTACT
Dr. Friederike Schmidt-Tremmel
friederike.schmidt-tremmel@elixir-europe.org

WEBSITE
www.elixir-europe.org

PARTICIPATING COUNTRIES
BE, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IT, LU, NL, NO, PT, SE, SL, CH, UK as well as EMBL-EBI

OBSERVER
GR
EMBRC aims to provide a strategic delivery mechanism for excellent and large-scale marine biological and ecological research in Europe. With its services, EMBRC will support both fundamental and applied research based on marine bioresources and ecosystems. In particular, EMBRC aims to drive forward the development of blue biotechnologies.

EMBRC provides a unique entry point to access an integrated portfolio of services, bio-technology research platforms and marine organisms, as well as environmental data, to investigate the potential of marine bioresources to deliver for societally relevant research domains.

SERVICES OFFERED INCLUDE
Provision of biological resources, access to ecosystems, access to experimental services (e.g. aquaria), e-infrastructure training and education

EXECUTIVE DIRECTOR
Dr. Ilaria Nardello

CONTACT
secretariat@embrc.eu

WEBSITE
www.embrc.eu

PARTICIPATING COUNTRIES OF THE PREPARATORY PHASE *
BE, ES, FR, GR, IL, IT, NO, PT, UK

* EMBRC is not yet a legal entity. Participating countries in EMBRC-ERIC may change.
Chemical Biology is the interdisciplinary research field which studies the effects of chemical compounds on biological systems. The primary objective of EU-OPENSCREEN is to offer access to a distributed Chemical Biology research infrastructure which meets the needs of scientists seeking a better understanding of how fundamental molecular processes act to govern biological function at the organismal, tissue, cellular and pathway levels by applying small chemical compounds.

SERVICES OFFERED INCLUDE
Compound screening, assay adaptation, bioprofiling of donated compounds, provision of standardised data, (medical) chemistry services

DIRECTOR GENERAL
to be announced

CONTACT
office@eu-openscreen.eu

WEBSITE
www.eu-openscreen.eu

PARTICIPATING COUNTRIES OF THE PREPARATORY PHASE *
AT, BE, CZ, DK, ES, FI, FR, DE, GR, HU, IT, NL, NO, PO, RO, SE

* EU-OPENSCREEN is not yet a legal entity. Participating countries in EU-OPENSCREEN ERIC may change.
Innovative imaging technologies are revolutionising biology and medicine by allowing researchers to visualise, characterise and measure molecular and cellular function with a precision never reached before.

Through EuBI, researchers can have access to imaging instruments and expertise that they do not find at their home institutions or among their collaboration partners. In addition, EuBI users will receive expert technical assistance and support both with project planning and during project execution.

SERVICES OFFERED INCLUDE
Biological imaging (e.g. LSCM/CLSM, STED, FCS, CLEM), multimodal molecular imaging (e.g. (Micro)-PET), medical imaging (e.g. High-Field MRI)

EXECUTIVE DIRECTOR
to be announced

CONTACT
Dr. Antje Keppler
keppler@embl.de

WEBSITE
www.eurobioimaging.eu

PARTICIPATING COUNTRIES IN THE INTERIM PHASE*
AT, BE, BG, CZ, ES, FI, FR, IL, IT, NO, PL, PT, SK, NL, UK as well as EMBL

* Euro-BioImaging is not yet a legal entity. Participating countries in EuBI ERIC may change.
Mammalian models have proven to be a key resource for biomedical research to understand human diseases and to develop treatments for them.

INFRAFRONTIER provides access to centralised high-quality resources and data for the development, phenotyping, archiving and distribution of mammalian models. Access is provided for individual researchers (bottom-up access) and for national, European and international research programmes (top-down access).

SERVICES OFFERED INCLUDE
Mammalian model development, systemic/specialised phenotyping, distribution of mouse mutants, NKI cancer models, axenic services, European Mouse Mutant Archive (EMMA)

SCIENTIFIC DIRECTOR
Prof. Dr. Martin Hrabě de Angelis

CONTACT
info@infrafrontier.eu

WEBSITE
www.infrafrontier.eu

PARTICIPATING COUNTRIES
AT, CZ, DE, DK, ES, FR, FI, GR, IL, IT, NL, PT, SE, UK
Structural biology is one of the key frameworks on which molecular and cellular functions are interpreted. The main experimental technologies are complementary, and increasingly link detailed atomic structure with cellular context.

Instruct is a pan-European research infrastructure in structural biology, making high-end technologies and methods available to users from Instruct member countries. Users are given access to highly specialised instruments, with on-site expertise to help them gain the best results for their projects.

SERVICES OFFERED INCLUDE
Protein expression systems, crystallisation, nanobody production, calorimetry, MALS, mass spectrometry, Surface Plasmon Resonance, Nuclear Magnetic Resonance

DIRECTOR
Prof. Dr. David Stuart

CONTACT
Dr. Claudia Alen Amaro
claudia@strubi.ox.ac.uk

WEBSITE
www.structuralbiology.eu

PARTICIPATING COUNTRIES
BE, CZ, DE, DK, ES, FR, IL, IT, NL, PT, SE, UK
ISBE is a knowledge-based RI that will empower European researchers across academia, clinics and industry to implement systems biology approaches addressing how the dynamic interactions between biological components (molecules, cells, tissues, organs) leads to the functioning of living organisms.

It actively supports scientists in facilitating model-compliant data generation, accessing resources for storing, making their research assets FAIR compliant (i.e. findable, accessible, interoperable and reusable) and creating predictive computational multi-scale models of biological systems based on integration of highly diverse data sets.

SERVICES OFFERED INCLUDE
Databases (e.g. doRiNA), software packages (e.g. genomination, PRODAN), web modelling services (e.g. COSYS, SteatoNet model), toolbox for network analysis in plant sciences

COORDINATOR
Prof. Dr. Richard Kitney

CONTACT
Gosia Kalinowska
m.kalinowska@imperial.ac.uk

WEBSITE
project.isbe.eu

PARTICIPATING COUNTRIES OF THE PREPARATORY PHASE*
CZ, DE, ES, FI, GR, IE, IT, NL, NO, SE, SI, UK

* ISBE is not yet a legal entity. Participating countries in ISBE ERIC may change.
Microbiology is one of the cornerstones in biological science, with a huge impact on basic research as well as on the bio-economy. MIRRI integrates the main microbial domain Biological Resource Centres (mBRCs) and their supporting services and data into a novel European RI.

MIRRI partners provide a broad range of microorganisms (about 450,000 resources), viz. bacteria (including cyanobacteria), archaea, fungi, yeasts, plant viruses, bacteriophages and their isolated DNA as well as human, animal and plant cell cultures, as well as their unrivalled expertise in the integrated analysis of complex microbial interactions.

SERVICES OFFERED INCLUDE
Deposit and distribution of resources, identification, phenotypic/molecular identification, screening, isolation, consultancy

COORDINATOR
Prof. Dr. Erko Stackebrandt

CONTACT
info@mirri.org

WEBSITE
www.mirri.org

PARTICIPATING COUNTRIES OF THE PREPARATORY PHASE*
BE, DE, FR, ES, IT, NL, PL, PT, RU, SE, UK

* MIRRI is not yet a legal entity. Participating countries may change.