# CORBEL

## 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.

| | BIOLOGICAL SCIENCES | BIOLOGICAL RESOURCES & PRODUCTION SYSTEMS | MEDICAL SCIENCES |
|---|---|---|---|
| BBMRI-ERIC | | | *biobanking* |
| EATRIS-ERIC | | | *translational medicine* |
| ECRIN-ERIC | | | *clinical research* |
| ELIXIR | *bioinformatics* | | |
| EMBRC | *marine organisms* | | |
| EMPHASIS | | *plant phenotyping* | |
| ERINHA | | | *pathogenic microorganisms* |
| EURO-BIOIMAGING | *imaging* | | |
| EU-OPENSCREEN | *chemical biology* | | |
| INFRAFRONTIER | | *functional genomics* | |
| INSTRUCT-ERIC | *structural biology* | | |
| ISBE | *systems biology* | | |
| MIRRI | *microorganisms* | | |

*Areas in the life-sciences covered by RIs within the frame of CORBEL [adapted from the ESFRI Roadmap 2016]*

# OBJECTIVES ...

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.
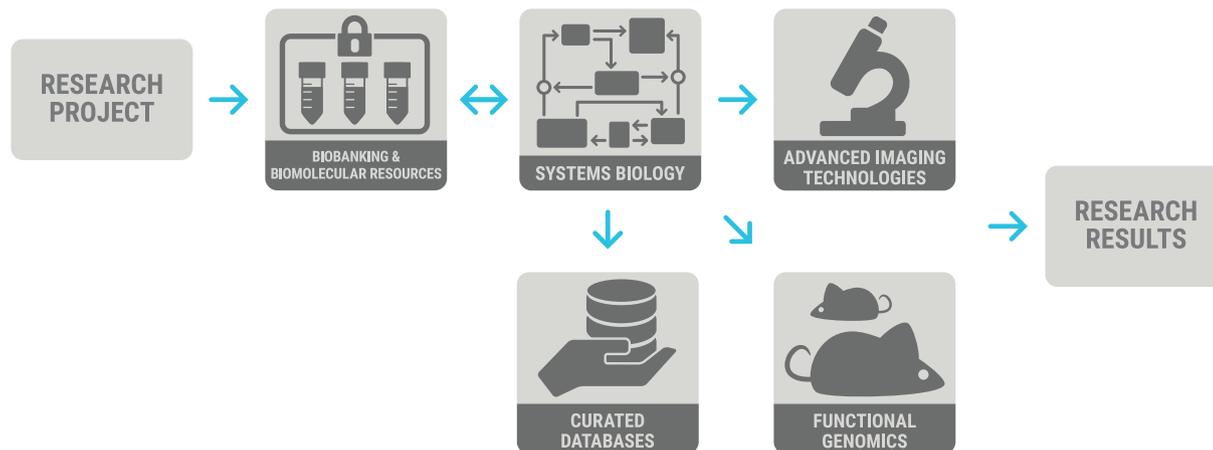


*Example for shared services to support interdisciplinary research projects*

**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-ERIC

BIOBANKING AND BIOMOLECULAR RESOURCES RESEARCH INFRASTRUCTURE

**BBMRI-ERIC** ®

BBMRI-ERIC is a research infrastructure of biobanks and biomolecular resources. Our main goal is to provide expertise and services, advancing the use of European sample collections and its data for the benefit of human health. Our activities are on a non-economic basis and primarily intended for our member countries.

### SERVICES OFFERED INCLUDE

» Key IT Services: Directory, Negotiator, BIBBOX, MIABIS 2.0

» Key Quality Management Services

» Key ELSI Services: ethics check of research proposals, ELSI Helpdesk (custom-based) and Knowledge Base (online service)

### ACCESS MODALITIES
Access can be on-site or virtual, depending on the requested service.

### HOW TO APPLY FOR A SERVICE?
Access online through webpage or an email application (e.g. Self Assesment Survey) depending on the requested service

### WHAT DOES IT COST?
Services are free for those biobanks/researchers that are located in a member state. ↗

### CAN I APPLY FOR FUNDING FROM YOUR RI?
No.

### CONTACT
contact@bbmri-eric.eu

### WEBSITE
www.bbmri-eric.eu ↗



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# EATRIS-ERIC

## EUROPEAN INFRASTRUCTURE FOR TRANSLATIONAL MEDICINE

EATRIS' aim is to make translation of scientific discoveries into medical products more effective to improve human health and quality of life. We are achieving this objective in two ways:

1. we support researchers in developing their biomedical discoveries for novel preventive, diagnostic or therapeutic products up to clinical proof of concept by providing access to the EATRIS infrastructure. The infrastructure comprises over 90 leading research institutions in the translational field located in 12 countries across Europe;

2. we empower collaboration between key stakeholders globally for the validation and introduction of novel tools and methodologies to support R&D.

### SERVICES OFFERED INCLUDE
» access to high end facilities for preclinical and early clinical development
» support for funding applications: translational assessment of projects
» access to Regulatory and early HTA expertise
» training

### ACCESS MODALITIES
Access modes vary according to the type of service requested.

### HOW TO APPLY FOR A SERVICE?
Users should contact the EATRIS coordination office.

### WHAT DOES IT COST?
Costs vary according to the service requested. Services provided by the coordination office are free of charge for EATRIS academic institutions.

### CAN I APPLY FOR FUNDING FROM YOUR RI?
No.


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### CONTACT
Anton Ussi, antonussi@eatris.eu

### WEBSITE
www.eatris.eu ↗

# ECRIN-ERIC

## EUROPEAN CLINICAL RESEARCH INFRASTRUCTURE NETWORK



ECRIN is a pan-European distributed infrastructure that links scientific partners and networks across Europe to facilitate multinational clinical research. ECRIN provides sponsors and investigators with support for the development and implementation of multinational trials.

### SERVICES OFFERED INCLUDE
» support for funding application
» advice for preparation of multinational clinical trials
» trial management operations
» clinical trial tools

### ACCESS MODALITIES
The access mode depends on proposal and needs.

### HOW TO APPLY FOR A SERVICE?
Users submit their request or proposal to the ECRIN office.

### WHAT DOES IT COST?
Information and advice are free for ECRIN members. ↗ The cost of trial management services depends on the type of service requested.

### CAN I APPLY FOR FUNDING FROM YOUR RI?
No.

### CONTACT
National European Correspondents (see www.ecrin.org/contact/eu-co)

Sabine Kläger, sabine.klager@ecrin.org

### WEBSITE
www.ecrin.org ↗



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# ELIXIR

## A DISTRIBUTED INFRASTRUCTURE FOR LIFE-SCIENCE INFORMATION



ELIXIR brings together bioinformatics resources from over 180 universities and research institutes across 20 European countries. It coordinates the collection, quality control and management of biological data and enable scientists to find, analyse and share these data to gain new insights into how living organism work.

### SERVICES OFFERED INCLUDE
» databases
» tools
» interoperability services and guidelines
» computing facilities
» training courses

### ACCESS MODALITIES
Users access the services online ↗ and directly with the resource they are interested in.

### HOW TO APPLY FOR A SERVICE?
No application to or access via the ELIXIR Hub is required.

### WHAT DOES IT COST?
Whilst there may be a charge for accessing some national compute facilities, the majority of services are free for users.

### CAN I APPLY FOR FUNDING FROM YOUR RI?
No.

### CONTACT
Dr. Jerry Lanfear, jerry.lanfear@elixir-europe.org

### WEBSITE
www.elixir-europe.org ↗



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# EMBRC

EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE

**EMBRC**
EUROPEAN
MARINE
BIOLOGICAL
RESOURCE
CENTRE

EMBRC aims to provide a strategic delivery mechanism for excellent and large-scale marine biological and ecological research in Europe. With its services, EMBRC supports 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 the marine bioresources to deliver for societally relevant research domains.

## SERVICES OFFERED INCLUDE
» access to ecosystems
» marine biological resources
» experimental facilities
» technology platforms
» e-Infrastructure, data & services

## ACCESS MODALITIES
Access can be on-site or remote, depending on the requested service.

## HOW TO APPLY FOR A SERVICE?
Users can apply through EMBRC website ↗ that will redirect the user to national EMBRC operators, depending on services needed.

## WHAT DOES IT COST?
Costs depend on the requested service.

## CAN I APPLY FOR FUNDING FROM YOUR RI?
There are periodic Open Calls, for information see the EMBRC website.


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## CONTACT
Dr. Ilaria Nardello, secretariat@embrc.eu

## WEBSITE
www.embrc.eu ↗

# EMPHASIS

EMPHASIS' mission is to provide European-wide demand-driven services such as access to multi-scale phenotyping infrastructures to analyse genotype performance in diverse environments and quantify the diversity of traits. EMPHASIS is currently in the preparatory phase with the goal to establish a long term operation of the phenotyping infrastructure. The objective is to enable access to infrastructure for phenotyping under controlled and field conditions linked to a coordinated infrastructure for storing and analysing data, and with platforms for plant/crop modelling.

## SERVICES OFFERED INCLUDE
Access to plant phenotyping facilities through the I3 project EPPN2020. ↗

## ACCESS MODALITIES
Physical access

## HOW TO APPLY FOR A SERVICE?
Users have to submit an application that will be peer reviewed.

## WHAT DOES IT COST?
Access costs are covered by the EPPN2020 ↗ project.

## CAN I APPLY FOR FUNDING FROM YOUR RI?
Funding for access will be granted in the course of the EPPN2020 ↗ calls.

## CONTACT
Prof. Urlich Schurr, u.schurr@fz-juelich.de

Prof. François Tardieu, francois.tardieu@supagro.inra.fr

## WEBSITE
emphasis.plant-phenotyping.eu ↗



© EMPHASIS

# ERINHA

## EUROPEAN RESEARCH INFRASTRUCTURE ON HIGHLY PATHOGENIC AGENTS



erinha

European Research Infrastructure
on Highly Pathogenic Agents

ERINHA RI aims to reinforce the European capacities for the study of Risk Group 4 pathogens and enhance the coordination of Biosafety Level 4 (BSL-4) and supporting research facilities. It provides access to its members' facilities to all interested scientists with a relevant research project. ERINHA AISBL supports cutting-edge research into the pathogenesis of human diseases caused by the most dangerous microorganisms (Ebola, Nipah, Lassa, etc.) as well as applied research to develop new therapeutic techniques, diagnostic tools and prophylactics. ERINHA provides the external users (scientists from Academia, Industry, other RIs, States etc.) with access to its members' facilities and expertise through the Central Coordinating Unit (CCU) hosted in Paris, France.

## SERVICES OFFERED INCLUDE

» access to high containment facilities and high consequence pathogens expertise (BSL 4 and connecting infrastructures)
» project coordination and management of large scale research programmes on high consequence pathogens
» training for potential users
» advice and scientific expertise provider
» access to pathogens specimens

## ACCESS MODALITIES
Depending on the project requirements: on-site or remote mode.

## HOW TO APPLY FOR A SERVICE?
Application should be submitted to the ERINHA Central Coordinating Unit office either by e-mail or by post.

## WHAT DOES IT COST?
Access costs to perform research activites. Costs for paid services: training, advice on biosfaety and biosecurity issues etc.

## CAN I APPLY FOR FUNDING FROM YOUR RI?
No.



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## CONTACT
Diana Stepanyan, diana.stepanyan-yerdamian@inserm.fr

Hervé Raoul, herve.raoul@inserm.fr

## WEBSITE
www.erinha.eu ↗

# EU-OPENSCREEN

## EUROPEAN INFRASTRUCTURE OF
## OPEN SCREENING PLATFORMS FOR CHEMICAL BIOLOGY
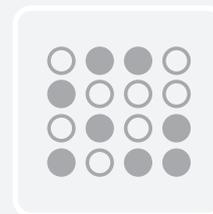


Chemical Biology is the interdisciplinary research field which studies the effects of chemical compounds on biological systems. The primary objective of EU-OPENSCREEN is to offer access to a distributed Chemical Biology research infrastructure which meets the needs of scientists seeking a better understanding on 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
» high-throughput compound/drug screening (HTS)
» access to a unique European compound collection
» assay adaption
» chemical optimization and profiling of preliminary 'hits'
» bioprofiling of donated compounds

### ACCESS MODALITIES
EU-OPENSCREEN offers to researchers from academic institutions, SMEs and industrial organisations open access to its shared resources. Depending on the project requirements, the RI can be assessed remotely or on-site.

### HOW TO APPLY FOR A SERVICE?
Users are requested to submit project proposal to the EU-OPENSCREEN office.

### WHAT DOES IT COST?
The costs for a screening project depend on the number of screened substances (a compound replenishment fee applies) and the maturity/ complexity of the assay (personnel and consumable costs are negotiated between project partners).

Users from countries which are members ↗ of the EU-OPENSCREEN ERIC will receive a discount on the compound replenishment fee.



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### CAN I APPLY FOR FUNDING FROM YOUR RI?
EU-OPENSCREEN supports individual researchers or consortia applying for (inter-)national grants.

### CONTACT
EU-OPENSCREEN headoffice, office@eu-openscreen.eu

### WEBSITE
www.eu-openscreen.eu ↗

# EURO-BIOIMAGING

EUROPEAN RESEARCH INFRASTRUCTURE FOR
IMAGING TECHNOLOGIES IN BIOLOGICAL AND BIOMEDICAL SCIENCES

Innovative imaging technologies are revolutionizing biology and medicine by allowing researchers to visualize, characterize and measure molecular and cellular function with a precision never reached before.

Through Euro-BioImaging (EuBI), researchers can have access to imaging instruments, expertise and related services 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, SPIM)
» multi-modal molecular imaging (e.g. (Micro)-PET, (Micro)-SPECT)
» medical imaging (e.g. High-Field MRI, Phase contrast imaging)

### ACCESS MODALITIES
In most cases, access is on-site with support by expert technical staff. Access to the Image Data Resource is remote and online via the EuBI website.

### HOW TO APPLY FOR A SERVICE?
Online application via the interim Web Access Portal.↗ Access is granted using a selection procedure based on scientific soundness and technical feasibility of the project.

### WHAT DOES IT COST?
Contributions to running costs and consumables will be discussed during the project planning phase.

### CAN I APPLY FOR FUNDING FROM YOUR RI?
EuBI users can be supported by funded access programs such as iNEXT.↗ Further funding opportunities will be announced on the EuBi website.
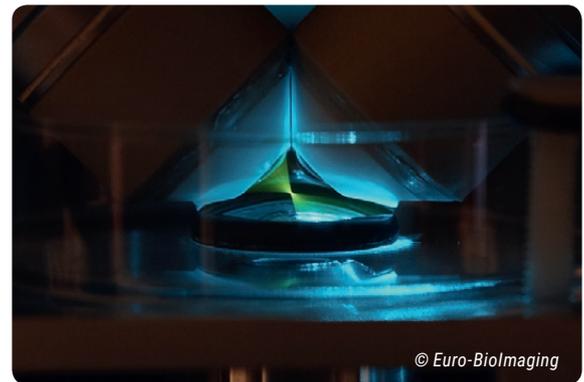


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### CONTACT
Dr. Antje Keppler, keppler@embl.de

### WEBSITE
www.eurobioimaging.eu ↗

# INFRAFRONTIER

## EUROPEAN INFRASTRUCTURE FOR THE DEVELOPMENT, PHENOTYPING, ARCHIVING, AND DISTRIBUTION OF MAMMALIAN MODELS



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.

INFRAFRONTIER is a pan-European research infrastructure formed by more than 25 research centres in 14 European countries and Canada. The INFRAFRONTIER partners actively work together to provide high-quality platforms, resources, services and data and to disseminate and share knowledge and expertise. Our central mission: Advancing the understanding of human health and disease.

## SERVICES OFFERED INCLUDE
» archiving and distribution and archiving of scientifically valuable mutant mouse strains
» rodent model development (mouse and rat) using gene targeting in embryonic ES-cells or CRISPR/Cas9 technologies
» systemic phenotyping of mutant mice for a whole-organism view on gene function
» germ-free (axenic) mice
» validated genetically engineered mouse models of cancer
» access to comprehensive expertise and training

## ACCESS MODALITIES
Details are specified on our website.

## HOW TO APPLY FOR A SERVICE?
All resources and services can be accessed via the INFRARONTIER website.

## WHAT DOES IT COST?
Most of the INFRAFRONTIER resources and services are provided free of charge. Handling fees to recover costs apply for some services.


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## CAN I APPLY FOR FUNDING FROM YOUR RI?
There are periodic Open Calls, for detailed information see the INFRAFRONTIER website.

## CONTACT
INFRAFRONTIER headquarter, info@infrafrontier.eu

## WEBSITE
www.infrafrontier.eu ↗

# INSTRUCT-ERIC

## INTEGRATED STRUCTURAL BIOLOGY INFRASTRUCTURE LTD.



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
» structural data collection using X-ray, imaging, NMR and mass spectrometry methods
» biophysical characterisation of samples for quality management
» sample preparation including protein expression and crystallisation, cryo-EM and tomography samples
» data analysis

### ACCESS MODALITIES
Access can be on-site, remote or mail-in sample.

### HOW TO APPLY FOR A SERVICE?
Online submission of proposals via the Instruct website.

### WHAT DOES IT COST?
Services are free for academic users; on service-basis for commercial use (user access is on a fee for service basis; no obligation to disclose or publish data).

### CAN I APPLY FOR FUNDING FROM YOUR RI?
Travel and accommodation is paid for users where a physical visit to an Instruct facility is required. Details are found at the Instruct website.
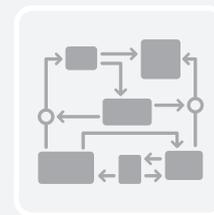
### CONTACT
Dr. Claudia Alen Amaro, Claudia@strubi.ox.ac.uk



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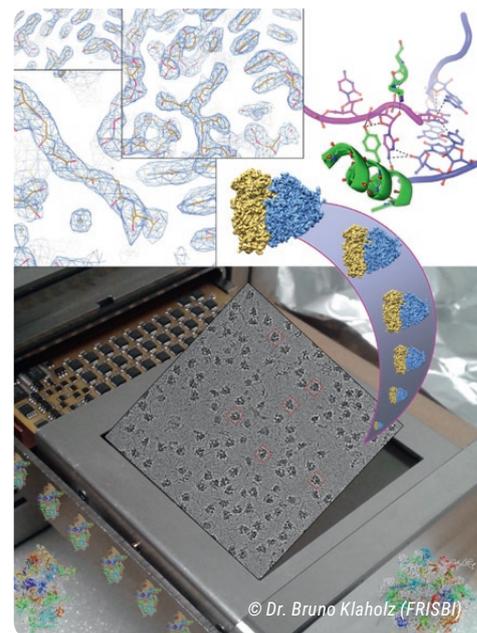
### WEBSITE
www.structuralbiology.eu ↗

# ISBE

## INFRASTRUCTURE FOR SYSTEMS BIOLOGY EUROPE



Systems biology approaches address how the dynamic interactions between biological components (molecules, cells, tissues, organs) lead to the functioning of living organisms. The heart of the systems biology approach is an iterative process between laboratory experiments and mathematical modelling, using computers.

Fostering project collaborations between experimental and computational teams, and with complementary RIs, ISBE empowers European researchers in academia, clinics and industry, providing access to state-of-the-art services, tools and training in systems biology. ISBE actively supports scientists in facilitating model-compliant data generation, making their research assets FAIR (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
» development and exploitation of quantitative and predictive computational models to understand the functioning of complex biological systems
» model-compliant data generation (e.g. metabolomics), model-based data integration and data analysis
» model analysis and validation, model-based simulation
» tools and standards that make research assets FAIR
» training and education
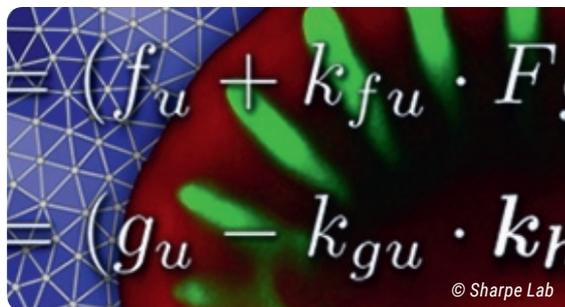
### ACCESS MODALITIES
Access can be on-site or remote, depending on the requested service.

### HOW TO APPLY FOR A SERVICE?
Via peer-review application in the framework of the CORBEL or via on-line submission on ISBE website (starting from 2018).

### WHAT DOES IT COST?
All web-based services as well as simple advice by ISBE personnel is free.



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Costs for more extensive support and data generation are project-based.

### CAN I APPLY FOR FUNDING FROM YOUR RI?
Not yet.

### CONTACT
Prof. Dr. Gennaro Piccialli; picciall@unina.it

### WEBSITE
project.isbe.eu ↗

# MIRRI

MICROBIAL RESOURCE RESEARCH INFRASTRUCTURE



MIRRI is the pan-European research infrastructure for microbial resources. MIRRI serves public and private bioscience users by facilitating access to a broad range of high quality bioresources and data in a legal compliant way.

The MIRRI partners strive to alleviate the fragmentation of bioresource holdings and expertise, to deliver fit-for-purpose microbial material, to add value to microbial biodiversity, and to discover and preserve the yet unknown or uncultivated microorganisms. MIRRI cooperates with its users and other RIs to exploit the microbial diversity to the benefit of the bioeconomy.

## SERVICES OFFERED INCLUDE
» access to microbial material and related databases
» deposit and preservation of microbial material
» isolation, cultivation, identification, phenotypic and molecular typing of microorganisms
» screening and bioassays with microorganisms
» training, consultancy, contract research

## ACCESS MODALITIES
Access modes depend on the kind of service requested.
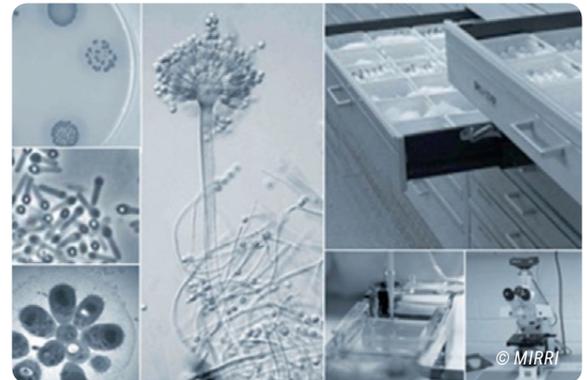
## HOW TO APPLY FOR A SERVICE?
Please contact the MIRRI Interim Secretariat for further information.

## WHAT DOES IT COST?
The costs depend on the kind of service requested.

## CAN I APPLY FOR FUNDING FROM YOUR RI?
No.


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## CONTACT
MIRRI Interim Secretariat, info@mirri.org

## WEBSITE
www.mirri.org ↗

**MORE INFORMATION**

www.corbel-project.eu

www.corbel-project.eu/newsletter

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