

Taking advantage of an opportunity to join the European Strategy Forum for Research Infrastructures (ESFRI) -A new dimension in driving innovative microbiological research in Europe - Establishing the Microbial Resources Research Infrastructure (MIRRI)

Harnessing the power of networking of collections is bearing fruit. The World Federation for Culture Collections has been fighting the cause for over 4 decades (<http://www.wfcc.info>) and in Europe the European Culture Collection's Organisation (ECCO – <http://www.eccosite.org>). However, a lot of work needs to be done both by collections and Governments if they indeed wish to harness the power of microbial diversity which is already the source of wondrous drugs and chemical products. We need to harness the microorganisms if we are to tackle the big global challenges of today in poverty alleviation, food security, healthcare, climate change and the environment. ECCO has incubated several European initiatives that have helped collections survive for example, recent European Community Framework Programme projects such as the Common Access to Biological Resources and Information (<http://www.cabri.org>), EBRCN (European Biological Resource Centres Network – www.ebrcn.net) and the European Consortium of Microbial Resource Centres (<http://www.embarc.eu>). Project funding is not the answer but networking to improve coverage, provide high quality products and services will help access funds that will keep them going as a pipeline to research, development and the bioeconomy.

The GBRCN, ECCO and EMbaRC submitted a proposal via the French delegation to the European Strategy Forum for Research Infrastructures (ESFRI). The ESFRI Biological and Medical Sciences working group evaluated the proposal for the Microbial Resources Research Infrastructure (MIRRI) during their meeting in Paris, June this year and have unanimously recommended it for inclusion into the ESFRI road map. The full forum meets in September to decide on its acceptance.

MIRRI brings together European microbial resource collections with stakeholders (their users, policy makers, potential funders and the plethora of microbial research efforts) aiming at improving access to enhanced quality microbial resources in an appropriate legal framework, thus underpinning and driving life sciences research. It will build the European platform for microorganisms within the future Global Biological Resource Centre Network (GBRCN). Biological Resources, such as microorganisms and their derivatives, are the essential raw material for the advancement of biotechnology, human health and research and development in the Life Sciences. All members of the European Culture Collections' Organisation are included in the initial consortium of collaborators in this initiative.

ESFRI are establishing pan-European structures to drive innovation to provide the resources, technologies and services as the basic tools necessary to underpin research. Having launched ten research infrastructures in the biological and medical science area, Europe is laying down the foundation for a major push to harness biodiversity in its battle to overcome natural resource depletion and reduce man's impact on our environment.

The mission of ESFRI is to support a coherent and strategy-led approach to policy-making on research infrastructures in Europe, and to facilitate multilateral initiatives leading to the better use and development of research infrastructures, at the EU and international level. The ESFRI strategy aims at overcoming the limits due to fragmentation of individual policies and provides Europe with the most up-to-date Research Infrastructures (RI), responding to the rapidly evolving Science frontiers, advancing also the knowledge-based technologies and their extended use. The advantage of this type of initiative is that it not only intends to link European partners but that non-European partners are not only allowed but expressly invited to participate. The ground for such an RI in the microbial area was prepared by the OECD Biological Resource Centre initiative spanning 1999 to 2006 which has proved immensely important in providing best practice and the cornerstones for biological resource networking. MIRRI will be co-ordinated by the GBRCN Secretariat based in Braunschweig, Germany and

will integrate services and resources, bridging the gap between the organism and provision of innovative solutions. MIRRI will provide coherence in the application of quality standards, homogeneity in data storage and management and sharing the workload to help to release the hidden potential of microorganisms.

If accepted, MIRRI will move into the first of the three predefined phases, which are the preparatory, construction and operational phases. The preparatory phase focuses on governance and structure including technical, legal governance and financial issues. It establishes the links between the microbiological resource centre community, its users, policy makers and potential funders. The preparatory phase for MIRRI will build on:

- The foundation set by the OECD BRC Task Force providing best practice¹
- The GBRCN demonstration and the EMbaRC projects
- Voluntary scientific-technically based collection network activities, such as WFCC and ECCO

MIRRI will enhance existing European microbial collections linking them to non-European country partners globally and will bring added value:

- The networking of the partners will enable a broader coverage of bioresources and services provided. The EMbaRC project - the European Consortium of Microbial Resource Centres project funded under the EU 7th Framework Programme (Grant agreement number: FP7- 228310) has begun the process of establishing policy for deposit of microorganisms in microbial resource centres. E.g. by encouraging editors and research programme funders to make the organisms and information associated with them available for confirmation of results and for future work. MIRRI will identify gaps in coverage and develop a strategy to provide these resources.
- The prime delivery of MIRRI would be the co-ordinated approach to coverage of organisms, the expertise to handle them and the delivery of mechanisms to ensure implementation of best practice in the provision of the resources and services.
- MIRRI will establish a distributed platform for microbial taxonomy to ensure best use of the remaining expertise and to put in place a human resource development programme.
- MIRRI will also tackle key obstacles to research needs in a co-ordinated way and will enable provision of services above what is currently supplied by individual microbial resource collections:
 - i. Bringing together working groups to focus on delivery of resources that meet specific needs
 - ii. Implement common policies that work across international boundaries to facilitate access
 - iii. Help establish facilities and resources in countries or regions rich in microbial diversity but without resources and facilities to make them readily available for research
 - iv. Create linkages to data in other systems relevant for data mining and enabling targeting of specific microbial resources for specific tasks – bringing all microbial collection data together creates the critical mass to make this action meaningful
 - v. Establishment of common operational procedures within the existing legal framework for facilitated while legitimate and safe access

The network will focus efforts through the cluster model to deliver an improved resource to meet user needs. This can only be achieved via a co-ordinated effort such as MIRRI as current structures do not have the capacity. Close cooperation with other RI's such as the Biobanking and Biomolecular Resources Research Infrastructure (BBMRI) that have different user groups, will greatly serve the broad scientific user communities. User demands are varied and cannot normally be serviced by one collection alone; a co-ordinated response to their needs is required. International co-operation is the only way forward to provide:

- enhanced worldwide accessibility to information and biological material
- co-ordination of operational procedures in delivery of quality
- linkage between scientific needs and government policies

- frameworks for regulatory initiatives
- linking mechanisms for countries without BRCs
- enhanced efficiency and reduced redundancies
- improved transparency.

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