

LABORATORY SERVICES AND BIOBANK GROUP (LSB)

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Mr Edwin Bouchet
(until March 2014)

Ms Ninon Guichard
(until March 2015)

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The Laboratory Services and Biobank Group (LSB) was formed in 2010 to manage the IARC Biobank facility and the common laboratory platforms. The Group was reorganized in 2014 to address the growing complexity of its workload, which has changed because of the increasing services provided to IARC scientific Groups as well as external collaborators and the growing support that LSB provides to low- and middle-income countries (LMICs). The Group required a stronger process management role and data management capacity.

To ensure that biospecimens are kept under optimal conditions, LSB liaises closely with the Administrative Services Office (ASO), and the two Groups were reorganized simultaneously to address overlapping and complementary responsibilities. LSB now has 10.5 positions (reduced from 13); one post was moved to ASO, two posts were eliminated, and a data management assistant position was created.

LABORATORY SERVICES

COMMON LABORATORY PLATFORMS

Laboratory Services has continued, in conjunction with the Laboratory Steering Committee, to oversee the common laboratory platforms and the maintenance of equipment. Efforts to reinforce interactions between laboratory-based and epidemiological research include the upgrading, updating, and acquisition of state-of-the-art scientific instruments. During the biennium, the shared platforms acquired new equipment, including a benchtop next-generation sequencer of medium capacity, a nucleic acid small-volume extractor, upgraded liquid-handling instruments to provide high-throughput facilities, an enzyme-linked immunosorbent assay (ELISA) plate reader, a vacuum concentrator, a modular high-throughput thermal cycler and real-time detection system, and a digital droplet polymerase chain reaction (PCR) system.

HEALTH AND SAFETY

Health and safety issues are managed in collaboration with the Occupational Health and Safety Committee. Improve-

ments include the installation of an emergency button to stop the liquid nitrogen supply from the main tank in case of an emergency and the installation of cameras for surveillance when personnel are working alone in the cryogenic rooms. During the biennium, advice was provided to several Groups on the relocation of their offices and laboratories.

The 5-year authorization for handling radioisotopes was renewed, and permission to use genetically modified organisms (GMOs) was also granted for another 5 years.

IARC BIOBANK

The IARC Biobank maintains biological sample collections from international collaborative studies and operates a service platform for sample retrieval, DNA extraction, and shipment of biological material worldwide. IARC's facilities also serve as a custodian for collections from LMICs.

Sample location records for 5 million of the more than 7 million biological specimens in the Biobank have been uploaded into the IARC sample management system (SAMI) database. Data about the European Prospective Investigation into Cancer and Nutrition (EPIC) study's collection, which were managed by a commercial program (Tetraed), were also migrated into SAMI.

New samples arrive at IARC with a set of minimum data, which are managed centrally and recorded in SAMI using newly developed standard operating procedures and working instructions. Standard practices are implemented across the Agency for the efficient management of the reception, shipment, and storage of biological samples under optimal conditions to provide reliable material.

A revision of the Common Minimum Technical Standards and Protocols for Biological Resource Centres, first published in 2007, was started in 2015.

BIOBANK SERVICES

The Biobank continues to provide pre-analytical services and operates on

a cost-recovery basis, with a major contribution from the central IARC Regular Budget for infrastructure and salaries. During the biennium, a total of 16 projects were conducted relating to 24 requests from international institutions. This resulted in more than 12 540 sample retrievals from liquid nitrogen, 9280 DNA extractions, 22 000 DNA aliquots, and the shipment of 122 parcels to 21 countries worldwide. In addition to the implementation of stringent quality control measures, the Biobank participated in international proficiency schemes and scored very highly in the DNA extraction and DNA quantification programmes.

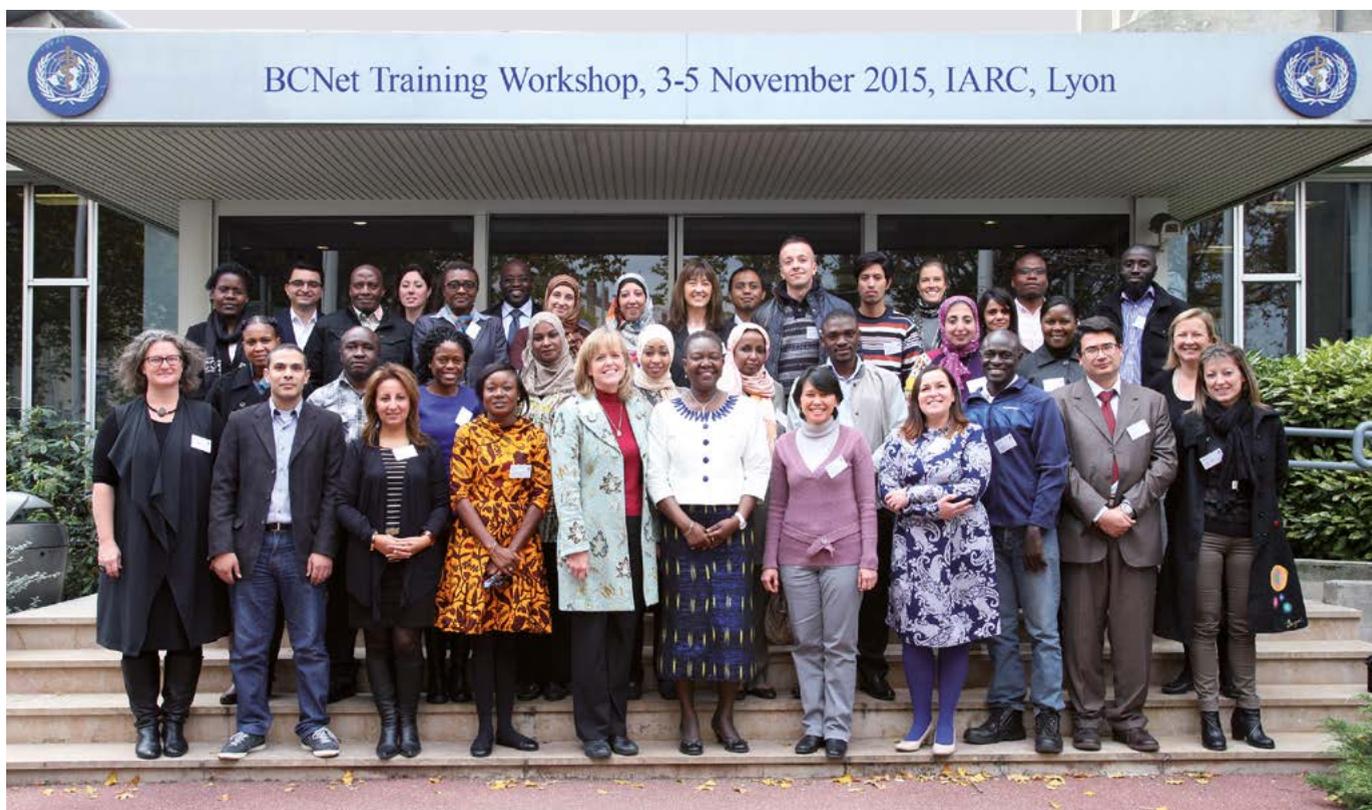
BCNET

Activities to establish the LMICs Biobank and Cohort Building Network (BCNet) continued, and the network is developing into a focal point for LMIC biobanking. A report of the situational analysis, conducted in 2013, was published during the biennium (Mendy et al., 2014). Four additional organizations have joined BCNet (Breast Care International, Ghana; the Centre for Infectious Disease Research in Zambia; Gadjah Mada University, Indonesia; and Institut Pasteur, Tunisia), bringing the membership to 29 institutions from 18 countries. The network's website (<http://bcnet.iarc.fr/>) was launched in September 2014.

TRAINING

With funding and support from the United States National Cancer Institute's Center for Global Health (NCI-CGH) and other partners, the first BCNet Training Workshop was held at IARC in November 2015, covering ethical, legal, and social issues (ELSI); quality; and information technology.

LSB continues to provide on-site training for colleagues from LMICs. During the biennium, LSB hosted students from Ghana, Indonesia, Lithuania, and The Gambia. Training is organized in collaboration with Centre Léon Bérard to include training in the handling and processing of fresh tissue.



COLLABORATIONS

In collaboration with the McCabe Centre for Law and Cancer and Melbourne Law School (Australia), IARC is contributing to the training of future professionals in the field of cancer research with a project to examine ELSIs associated with cancer biobanking in LMICs. A master's student spent 8 weeks at IARC to research issues including informed consent and access to data and samples; conduct an analysis of international, regional, and national laws and policies; and assist in writing and editing generic templates (consent forms, access policies, and access agreements). The report will be published soon.

In 2014, IARC joined the pan-European Biobanking and BioMolecular resources Research Infrastructure–European Research Infrastructure Consortium ([BBMRI-ERIC](#)) as an observer. IARC will share its expertise in international networking and interoperability issues to ensure that compatible structures developed within Europe will be accessible to the wider international community.

LSB continues to support the African Organisation for Research and Training in Cancer (AORTIC), linking the organization with BBMRI and BCNet and other biobanking organizations in Europe.

GRANTS

Two grant awards were received, within the European Union's Horizon 2020 programme: (i) ADOPT BBMRI-ERIC, which aims to expand BBMRI beyond Europe (October 2015–September 2018), and (ii) B3Africa (Bridging Biobanking and Biomedical Research across Europe and Africa), for which IARC is leading the Training and Dissemination work packages (July 2015–June 2018).