

OFFICE OF THE DIRECTOR

Director

Dr Christopher P. Wild

Director's office team**Scientific officer**

Dr Eduardo Seleiro

Personal assistant to the Director

Ms Margot Geesink

Administrative assistant

Ms Susan Haver-Legros

Secretary

Ms Laurence Marnat

**Senior visiting scientist
responsible for the GHIS**

Sir Andrew J. Hall

Special advisor (NCD)

Dr Silvia Franceschi

THE OFFICE OF THE DIRECTOR COMPRISES A SMALL TEAM THAT SUPPORTS THE DIRECTOR IN THE IMPLEMENTATION OF THE VISION AND STRATEGY FOR THE AGENCY, AS OUTLINED IN THE IARC MEDIUM-TERM STRATEGY DEVELOPED IN CONJUNCTION WITH THE SCIENTIFIC AND GOVERNING COUNCILS. THE KEY FUNCTIONS ARE TO DEVELOP STRATEGIC PARTNERSHIPS TO SUPPORT THE MISSION OF THE AGENCY; TO ASSIST IN THE COORDINATION OF THE AGENCY'S SCIENTIFIC PROGRAMME, PARTICULARLY FOR PROJECTS THAT INTEGRATE ACTIVITIES ACROSS MULTIPLE SECTIONS OR GROUPS; AND TO MAINTAIN AND DEVELOP RELATIONS WITH IARC'S NETWORK OF PARTNERS. AS WELL AS THE SUPPORT TEAM, THREE GROUPS ARE WITHIN THE DIRECTOR'S OFFICE: COMMUNICATIONS (COM), EDUCATION AND TRAINING (ETR), AND LABORATORY SERVICES AND BIOBANK (LSB, REFLECTING THE FACT THAT THESE GROUPS PROVIDE SUPPORT TO SCIENTISTS ACROSS THE AGENCY. IN ADDITION, THE GAMBIA HEPATITIS INTERVENTION STUDY (GHIS), A LONG-TERM SPECIALIZED PROJECT OF THE AGENCY, IS MANAGED BY THE DIRECTOR.

The Director's Office assists in the coordination of relations and contacts with institutional partners, both governmental or nongovernmental research organizations and funding agencies, to support IARC's research programmes, and with key partners in global policy development for cancer prevention and control, including WHO Headquarters and Regional Offices, the International Atomic Energy Agency's Programme of Action for Cancer Therapy (IAEA-PACT), the United States National Cancer Institute's Center for Global Health (NCI-CGH), and the Union for International Cancer Control (UICC). In October 2013, IARC joined with WHO and UNESCO to support a meeting on Cancers of the Oesophagus held at the UNESCO Headquarters in Paris. In November 2013, IARC and WHO were sponsors of the World Cancer Leaders' Summit organized by UICC in Cape Town, South Africa. In addition to these

international partners, the Director's Office supports the Director in liaising with current Participating States and in maintaining and developing official contacts in prospective new Participating States.

In the 2012–2013 biennium, the Director's Office coordinated or assisted in the organization of two key strategic scientific meetings. The first was the IARC-Latin America Collaboration Meeting in Lyon in March 2012, attended by leaders of national cancer centres from 16 Latin American countries and supported by La Red de Institutos Nacionales de Cáncer (RINC), which helped ensure that the priorities for the region were reflected in the Agency's future planning. The second was a meeting held in Doha in October 2013, organized jointly by IARC and the WHO Regional Office for the Eastern Mediterranean (EMRO) and hosted with the assistance of the Supreme Council

of Health, Qatar. This meeting identified the priorities for cancer control and cancer research across the countries covered by EMRO and reflected the recent presence of Qatar as one of the Participating States of IARC.

The Director's Office organized several high-level meetings with key partners from leading national cancer centres. Dr Silvia Franceschi was assigned a new role as Special Advisor to the Director on the topic of noncommunicable diseases. In addition, the Director hosted the visit of Dr Margaret Chan, WHO Director-General, in February 2013 on the occasion of World Cancer Day. Dr Chan addressed all staff on IARC's contribution

to the work of WHO on cancer. This visit was followed by two high-level meetings (in February 2013 and December 2013) between senior IARC scientists and the WHO Assistant Directors-General, Deputy Director-General, and Dr Chan to identify priorities and set a joint programme of work across both organizations in relation to the Global Action Plan for Noncommunicable Diseases (2013–2020).

As part of its role in supporting scientific and coordination activities across the Agency, the Director's Office provides secretariat to several internal committees and ad hoc advisory groups. Most notable are the Senior Leadership Team

(SLT), comprising the Director, all Section Heads, the Director of Administration and Finance, and the Head of the Communications Group, which advises the Director on the implementation of the scientific strategy and on management issues, and the IARC Ethics Committee (IEC), which reviews all IARC projects and ensures that research is conducted in accordance with the most stringent ethical standards (for details of the composition and activities of the IEC, see page 138).

SECTION OF SUPPORT TO RESEARCH (SSR)

OFFICE OF DIRECTOR OF ADMINISTRATION AND FINANCE

Director of administration and finance

Mr David Allen

Administrative officer

Ms Virginie Vocanson

Secretary

Ms Anne-Magali Maillol

Assistant (Documents)

Ms Agnès Meneghel

ADMINISTRATIVE SERVICES OFFICE

Administrative services officer

Ms Elisabeth Françon

Administrative assistant

Ms Sophie Servat

Assistants (Supplies)

Ms Fabienne Lelong

Mr Didier Louis (Temporary Assistant, Procurement)

Ms Sandrine Macé

Assistant (Registry)

Mr François Deloche

Support staff

Ms Odile Drutel (Clerk)

(until December 2012)

Mr Antoine Hernandez (Driver)

Mr Michel Javin (Reproduction equipment operator)

Ms Rita Kibrisliyan (Receptionist) (until June 2013)

Ms Nicole Lagneau (Temporary Receptionist) (until July 2013)

Mr Ludovic Ripert (Storekeeper)

Ms Valérie Rut (Secretary)

Ms Séverine Sarboni (Clerk, Reception)

Support staff (Building maintenance)

Mr Patrice Barbieux (Electrician)

(until December 2012)

Mr José Cardia Lima (Technician)

Mr William Goudard (Carpenter)

Mr Hafed Lamouchi (Electronics)

Mr Jean-Alain Pedil (Security)

GRANTS, BUDGET AND FINANCE OFFICE

Administration and finance officer

Ms Angkana Santhiprechachit

External relations officer (IARC Grants Office)

Dr Olaf Kelm

Budget officer

Ms Editta Odame

Finance officers

Ms Julie Goux

Mr Rommel Nidea

Budget assistants

Mr Thomas Odin

Ms Madeleine Ongaro

Mr Franck Rousset

Finance assistants

Ms Françoise Florentin (Accounts)

(until April 2013)

Ms Laurence Piau (Accounts)

Support staff

Ms Belinda Annibaldi (Temporary Clerk, Finance)

Mr Pascal Binet (Clerk, Accounts)

Ms Lobna Boulegroun (Secretary, Finance)

Ms Nathalie Lamandé (Secretary, Grants)

Ms Adèle Séguret (Clerk, Accounts)

HUMAN RESOURCES OFFICE

Human resources officer

Ms Dina D'Amico

Junior professional officer

Ms Sara Allkämper (until February 2013)

Assistants (Human Resources)

Ms Isabelle Battaglia

Ms Maud Bessenay

Secretary

Ms Sophie Sibert

Central Secretarial Services (CSS)

Ms Carole Durieux

Ms Marieke Dusenberg

Ms Carole Lastricani

Secretary to IARC Staff Association Committee and Staff physician

Ms Isabelle Poncet

Social adviser

Ms Christine Astier

Staff physician

Dr Michel Baduraux

Dr Dorothée Cuche

(until December 2012)

INFORMATION TECHNOLOGY SERVICES

Programmer analyst

Mr Philippe Damiecki

IT officers

Mr Philippe Boutarin

Mr Christopher Jack

Support staff

Ms Lucile Alteyrac (Assistant, Informatics)

Mr Cédric Barrancos (Temporary Programming Technician)

Mr Nicolas Hernandez

(Temporary Assistant, Informatics) (until November 2012)

Mr Nicolas Tardy (Assistant, Informatics)

During the 2012–2013 biennium, the Division of Administration and Finance was renamed the Section of Support to Research (SSR) in recognition of its role in the achievement of IARC's scientific objectives through efficient and effective management of the Agency's resources and provision of administrative services, ensuring accountable risk mitigation and implementing strategies to strengthen IARC's capacities.

The Section is made up of specialized administrative units that manage and provide services intrinsic to the successful implementation of IARC's scientific programme in the areas of: Grants, Budget, and Finance; Human Resources; Conference, Office Administration, and Buildings; and Information and Communications Technology. SSR ensures that the Agency's activities uphold the highest standards of management, efficiency, and accountability in the use of

the funding made available by its Participating States and donors.

At the beginning of the reporting period, SSR teams implemented an ambitious 2-year work plan that had been reviewed and agreed upon by the Director and the Senior Leadership Team. Highlights of the results achieved include full implementation of the International Public Sector Accounting Standards (IPSAS), modernization and augmentation of the IT infrastructure, the launch of several staff recognition and career development programmes, several large-scale infrastructure interventions on the premises, and substantive progress in efforts to house the Agency in more suitable premises in the near future. In collaboration with colleagues across other Sections, SSR teams made considerable strides in revamping IARC's administrative policies and procedures with the aim of streamlining and simplifying, including automating several such processes.

In the face of continued escalating costs, the Agency remains committed to finding innovative approaches to ensure that delivery of the scientific programme is not adversely affected. SSR leads these efforts through careful resource planning and management, as well as advising the Director on a regular basis about potential areas of concern and remedial actions. In efforts to diversify the revenue stream for the Agency, SSR spearheaded efforts towards a corporate Resource Mobilization Strategy to be launched during the 2014–2015 biennium. During the current biennium, SSR achieved cost savings of approximately €150 000 through rationalization of recurrent contracts and reduced its projected operating budget by more than €325 000 for the 2014–2015 biennium in order to support the objectives of the scientific programme.

COMMUNICATIONS GROUP (COM)

Group head

Dr Nicolas Gaudin

Secretary

Ms Bernadette Geoffre

Editor

Dr Karen Müller

Scientific officer

Dr Rachel Purcell

Institutional webmaster

Ms Maria de la Trinidad Valdivieso
Gonzalez

Librarian

Ms Sharon Grant (until July 2013)

Press officer

Ms Véronique Terrasse

Technical assistants

Mr Antoine Bellon
(until October 2013)
Ms Latifa Bouanzi
Mr Roland Dray
Ms Sylvia Lesage
Ms Solène Quennehen

An integral part of the Director's Office, the Communications Group (COM) is responsible for the presentation of a homogeneous image of all aspects of IARC's work to the scientific community, the media, and the general public, as well as providing a service to the research Groups in all matters related to information.

RESTRUCTURING

As part of an Agency-wide effort to streamline processes and increase efficiency, in line with the IARC Medium-Term Strategy, COM presented an IARC Communications Strategy, which was endorsed by the Senior Leadership Team and agreed upon by the Director. After an internal review, COM was reorganized into a four-team unit, whose collective objective is to enhance the Agency's external profile, both institutionally and scientifically.

- The Knowledge Management Centre has the overall objective of integrating services and resources that support the creation, preservation, and dissemination of IARC research and knowledge. This team is responsible

for the functions of the IARC Library as well as enhanced support to the Agency's Publications Programme. The new position of Knowledge Manager is supported by a Librarian Assistant and a Publishing Assistant, whose terms of reference have been upgraded, to help the Knowledge Manager discharge the central publications functions.

- A Press Officer position was established to strengthen the Agency's external communications capacity and enhance media presence globally, and the position was filled earlier this year. The Press Officer is supported by a Multimedia Assistant.

- To best meet and coordinate the editing requirements across the Agency, a Technical Editor position has been moved from the Molecular Pathology Section to COM to support in part the English-language Editor.

- The Web team continues to improve IARC's presence on the Internet and to coordinate and manage the Intranet content. Currently, the Web services are carried out by the Institutional Webmaster with the support of a Web Assistant.

KNOWLEDGE MANAGEMENT SERVICES

Reporting to the Head, COM, the Knowledge Manager is responsible for the Knowledge Management Centre components: the IARC Library and Publications Programme. As the manager of the Library team, the Knowledge Manager coordinates the delivery of a wide range of information resources and services, and also manages the IARC Publications Programme, overseeing and coordinating the publication cycle from conception through to actual publication and dissemination.

- The Library is committed to providing access to information through acquisition, organization, and management of collections. The cost of online information is high, and demand for it is growing rapidly. The Library works closely with local libraries in Lyon and with WHO Libraries and Information Networks for Knowledge to provide additional means for IARC users to access information. Furthermore, the Library's highly efficient Document Delivery Service ensures a quick turnaround time between requests and delivery of documents. The IARC Library provides access to its



collections and services to institutions and individuals.

- The Publications Programme supports all IARC publication projects by using a cross-cutting approach to streamlining processes, establishing standard tools (e.g. automated manuscript submission software and applications) and formats (e.g. print version and ePub), and stepwise submission of projects, through the Advisory Committee on Publications. This approach caters both to publications produced by individual Sections, namely the WHO Classification of Tumours and the IARC Monographs series, and to the more general IARC Scientific Publications series and non-serial publications.

- The Knowledge Management Centre team also addresses IARC's contractual agreement with WHO Press for the dissemination of IARC publications to ensure higher efficiency and better return on investment. Therefore, COM, along with the Administration, has been seeking the support of an external consultant to explore various approaches to commercial development and market positioning for IARC publications and other data products (such as the PubCan integrated database, which is under development).

During the 2012–2013 biennium, IARC published several key reference publications:

WHO CLASSIFICATION OF TUMOURS

WHO Classification of Tumours of the Breast, fourth edition; and WHO Classification of Tumours of Soft Tissue and Bone, fourth edition.

IARC MONOGRAPHS

Volume 100 – A Review of Human Carcinogens (including a six-volume boxed set):

- Volume 100A (2012) Pharmaceuticals
- Volume 100B (2012) Biological Agents
- Volume 100C (2012) Arsenic, Metals, Fibres, and Dusts
- Volume 100D (2012) Radiation
- Volume 100E (2012) Personal Habits and Indoor Combustions
- Volume 100F (2012) Chemical Agents and Related Occupations.

In addition to these printed and electronic volumes, the Monographs Section published the following titles in free-access PDF format on the IARC web site:

- Volume 101 (2012) Some Chemicals Present in Industrial and Consumer Products, Food and Drinking-water
- Volume 102 (2013) Non-Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields
- Volume 103 (2013) Bitumens and Bitumen Emissions, and Some N- and S-Heterocyclic Polycyclic Aromatic Hydrocarbons
- Volume 104 (2013) Malaria and Some Polyomaviruses (SV40, BK, JC, and Merkel Cell Viruses).

IARC SCIENTIFIC PUBLICATIONS

In print exclusively:

- Improving Public Health through Mycotoxin Control, IARC Scientific Publication No. 158 (2012).

In electronic format exclusively:

- Air Pollution and Cancer, IARC Scientific Publication No. 161 (2013).
- Cancer Incidence in Five Continents, Vol. X (electronic version) (2013) (The printed version of this volume, IARC Scientific Publication No. 164, will be available in 2014.)

IARC CancerBases:

- IARC CancerBase No. 11, GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide (2013)

IARC Working Group Reports (PDF publication only):

- Current Status and Future Directions of Breast and Cervical Cancer Prevention and Early Detection in Belarus, Working Group Reports, Volume 6 (2012).

IARC Technical Publications:

- A Digital Manual for the Early Diagnosis of Oral Neoplasia, IARC Technical Publication No. 42 (2012).

Following in the footsteps of the seminal *World Cancer Report* published in 2003, and five years after the previous edition of this landmark publication, production of *World Cancer Report 2014* began in 2012. This landmark volume is expected to be published early in 2014, both in print and e-book format. The result of a major effort, which mobilized dozens of IARC scientists, many collaborators worldwide, and the whole COM team to various degrees, this book should become an

indispensable resource for scientists and public health professionals.

EDITING, LANGUAGE, AND TRANSLATION SERVICES

COM provides English and technical editing services to all IARC Groups for publication of papers in peer-reviewed journals and book chapters, or for publication in one of the established IARC Publications series. Additional support was added in 2013 when a Technical Editor position was moved from the Molecular Pathology Section to COM, to support in part the English-language Editor and thereby provide additional centralized resources to this key Agency-wide service. Further, the administration of external English-to-French translation services (mainly for large documents for IARC's governing bodies) has now been transferred to the English-language Editor. Day-to-day translation requirements are handled by COM for articles, technical documents, correspondence, memoranda, and other texts for all the scientific and administrative Groups. COM also organizes successful language courses for the Agency's staff in both working languages, plus Spanish beginning in 2012.

MEDIA SERVICES

The IARC Communications Strategy identified the need for reinforcing media presence and heightened activity in this area. Therefore, a professional position of Press Officer was established, which was filled in 2013. This activity has already shown that it is key to the development of IARC's image in the scientific community, the media, and the general public. Branding is now emphasized throughout the Agency (web, graphics support, media training, etc.). Two major press conferences, to announce the results of the evaluation of Diesel Engine Exhaust in June 2012 (Group 1 carcinogen) and of Outdoor Air Pollution in October 2013 (Group 1 carcinogen), demonstrate the usefulness of enhanced presence and cooperation with the WHO Media team. The IARC Media team rolled out six press releases in 2012 and nine in 2013 to a large network of more than 4500 correspondents all over the world. In addition, dissemination of more specific

news releases was made through the publication of 61 IARC News items in 2012 and an equal number to date in 2013.

WEB SERVICES

To promote an effective corporate image, COM's Web services team ensures that presentation of all of IARC's research available through the web and IARC subsites is standardized. As part of the Agency's communications and web strategy, a redesigned IARC web site was launched on 16 May 2012 and a mobile-optimized version was made available on 17 May 2013 to reach a wider audience. Also to increase accessibility, a special effort has been made to align the majority of the IARC research projects to also become available on such mobile platforms (<http://www.iarc.fr/en/websites/researchprg.php>).

COM's Web services team also helps to analyse the web needs of the IARC Groups, to conceptualize and guide the process of development (e.g. content

definition, design, and launch), and to maintain web sites for various Groups. During the 2012–2013 biennium, the Web services team developed and successfully launched the following web sites:

PUBLIC WEB SITES:

[The International Paediatric CT-scan Study](#)

[The Global Acute Leukaemia network \(GALnet\)](#)

[The Human Papillomavirus Infection and Head and Neck Cancer Study \(HPV-AHEAD\)](#)

[The IARC Biobank \(IBB\)](#)

[The InterCHANGE Study](#)

[The INTERPHONE Study](#)

[The Study of HPV and Precancerous Lesions In the Tonsil \(SPLIT\) Project](#)

[The WHO/IARC Classification of Tumours](#)

MEETING WEB SITES:

[Emerging Oncogenic Viruses](#)

[Emerging Issues in Head and Neck Cancer](#)

INTERNAL WEB SITE:

IARC Laboratory Services

The Web services team ensures greater visibility of the key IARC activities through the home page and feeds key performance indicators (KPIs) (particularly as relates to information access through the www.iarc.fr portal) to the Head of the Group and to the Director. The substantial impact of the media efforts is evident from the news coverage of the major releases mentioned above, which made global headlines. The profile of the media impact is being monitored by news monitoring services, led by COM. The media impact correlates closely to major media launches, and the IARC home page offers real-time IARC media coverage.

This team also maintains the Intranet service, which provides staff with many administrative resources and information for internal use (e.g. library, language classes [English, French, and Spanish], Occupational Health and Safety Committee, laboratory activities).

EDUCATION AND TRAINING GROUP (ETR)

Group head

Ms Anouk Berger

Acting head

Dr Eduardo Seleiro
(until May 2012)

**Responsible officer, fellowship
programme**

Dr Zdenko Herceg

Senior visiting scientist

Dr Rodolfo Saracci

**Assistant, fellowship
programme**

Ms Eve El Akroud

Assistant, courses programme

Ms Susan Anthony

Education and training in cancer research is one of the statutory functions of the Agency. For more than four decades, IARC's Education and Training programme has made a substantial contribution to the development of cancer research in many countries, with special emphasis on low- and middle-income countries (LMICs), through the training of cancer researchers, particularly in the field of cancer epidemiology. This has in turn contributed to shaping the Agency's research strategy and to widening the network of collaborators, as well as promoting and enhancing IARC's reputation and worldwide standing as an international organization.

Recognizing the importance of education and training activities within the Agency's mission, and after internal consultation and guidance from an ad hoc Advisory Group meeting in 2009, the ETR Group was established in 2010 as a distinct structure within the Office of the Director. The mission of ETR is to coordinate

the various IARC training initiatives and promote them both internally and externally. The Group is under the direction of an education and training officer, with two senior programme assistants managing the Fellowship and Courses Programmes.

The following sections present key achievements of ETR in 2012–2013. It should be noted that although the ETR Group oversees the activities of the Agency in these matters, many initiatives are led by the research Groups.

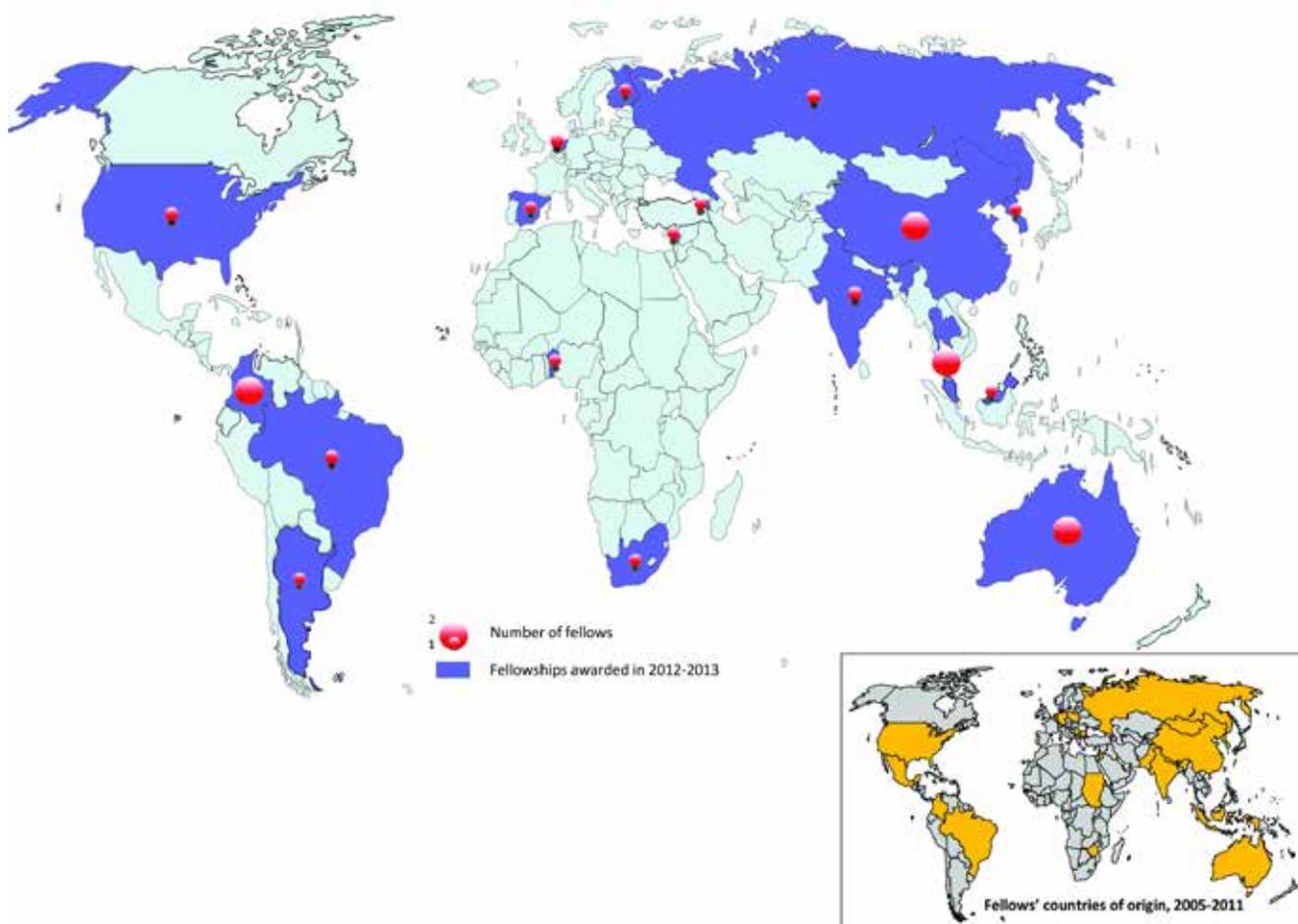
POSTDOCTORAL FELLOWSHIPS

Since 2005, IARC Postdoctoral Fellowships have been uniquely tenable at the Agency. They target scientists from LMICs, or with research projects relevant to these countries, in areas related to IARC's own programme and with an emphasis on interdisciplinary projects.

The number of applicants to the Postdoctoral Fellowship Programme has increased in recent years, testifying to the growing interest in the programme. Fellowships are awarded after a highly competitive process with interviews and an evaluation by an international panel of experts comprising the IARC Fellowship Selection Committee.

Fellowships were awarded to 12 postdoctoral fellows in 2012 and to 8 in 2013, coming from 16 different countries. The Agency hosted 18 or 19 fellows per year during this period, as the majority of awards were extended for a second year after a review by the Fellowship Selection Committee. Of the fellows, 70% were from LMICs; 45% were epidemiologists and 55% laboratory scientists; almost half were women (45%). A research Return Grant was awarded to three fellows from LMICs to establish their research activity in their own country. Although modest, this represents a significant boost for the initiation of such projects.

Figure 1. IARC Postdoctoral Fellowships awarded in 2012 and 2013, by country of origin.



ETR successfully obtained a second competitive grant from the EC-FP7 Marie Curie Actions-People-COFUND, which will contribute 40% of the postdoctoral fellowship costs for the next 5 years.

The bilateral agreements concluded with Cancer Council Australia in 2010 and with the Irish Cancer Society in 2011 to establish the IARC-Australia and the IARC-Ireland Postdoctoral Fellowship, respectively, allowed two additional fellows to be supported during the biennium. Other similar partnerships are currently under discussion with several institutions in Participating States.

A survey was carried out in 2012 to assess the outcomes of the programme since 2005. The online questionnaire was completed by 87% of former fellows: 77% of respondents returned to their home country; 81% have remained active in cancer research in public institutions; half considered that the fellowship had a direct impact on successfully obtaining grants after leaving IARC, and most of those benefiting from a Return Grant considered it beneficial to their career as well as to their institution; and all respondents felt that the fellowship was either “helpful” or “decisive” for their career.

SENIOR VISITING SCIENTIST AWARD AND EXPERTISE TRANSFER FELLOWSHIP

The Senior Visiting Scientist Award gives IARC the opportunity to host eminent researchers for up to 1 year, providing a significant boost to the Agency’s research activities and collaborations, as well as an excellent opportunity for the development of early career scientists within IARC. The Expertise Transfer Fellowship enables an established and experienced investigator to spend 6–12 months in an appropriate host institute in a LMIC to share knowledge and expertise in a research area relevant to the host country and related to IARC’s programme.

Seven Senior Visiting Scientist Awards and one Expertise Transfer Fellowship were awarded in 2012–2013 (Table 1). Additional funding, made available by the Governing Council in 2011 and 2012, allowed the granting of all the Senior Visiting Scientist Awards recommended by the IARC Fellowship

Table 1. Senior Visiting Scientist Awards and Expertise Transfer Fellowships awarded in 2012 and 2013

2012	
Professor Isabel Dos Santos Silva	London School of Hygiene & Tropical Medicine, London, United Kingdom
Professor Terrence Dwyer	Royal Children’s Hospital, Parkville, Australia
Professor Steven Rappaport	University of California, Berkeley, USA
2013	
Professor Leticia M. Fernandez Garrote	National School of Public Health, La Habana, Cuba
Professor John D. Groopman	Johns Hopkins University Bloomberg School of Public Health, Baltimore, USA
Professor Groesbeck P. Parham	Center for Infectious Disease Research in Zambia, Lusaka, Zambia
Professor Christopher J. Portier	Agency for Toxic Substances and Disease Registry, Atlanta, USA
Dr Esther De Vries ^a	Erasmus University Medical Center, Rotterdam, The Netherlands

^aExpertise Transfer Fellowship: 12 months at the National Cancer Institute, Bogotá, Colombia, to improve the use of population-based cancer registries in Colombia and other Latin American countries.

Selection Committee. In addition, the Swiss Federal Office of Public Health in Berne made a generous contribution to support the Senior Visiting Scientist Award programme.

NEW OPPORTUNITIES FOR TRAINING AT IARC

ETR further explored the expansion of the Fellowship Programme to include short-term stays at IARC (3–4 months) with the intention of transferring basic skills for cancer research to promising candidates from LMICs. In 2012 and in collaboration with the Union for International Cancer Control (UICC), the UICC-IARC Development Fellowship was successfully launched during the IARC Summer School. This initiative allowed two of the most promising participants of the 2012 and 2013 courses to return to IARC for a period of 3 months to receive further training and to set up research collaborations.

HOSTING ENVIRONMENT

In addition to the IARC Fellows described above, the Agency hosts junior and senior scientists supported by project funds from the research Groups. A total of 240 trainees, graduate students, postdocs, or visiting scientists funded by the Fellowship Programme or IARC Groups worked at IARC during the reporting period. A framework for hosting trainees, graduate students, postdocs, and visiting scientists, funded either by the Fellowship Programme or directly by the IARC Groups, has been developed and managed to ensure the quality of the hosting environment.

The Postdoctoral Fellowship Charter, implemented in 2011, has been extremely successful. It allows a more structured approach to postdoctoral training at IARC by defining expectations and providing opportunities for generic training to equip young scientists with essential skills to enhance career prospects. To

this end, 19 courses were organized at IARC during the biennium within four categories of generic skills: research skill development, responsible conduct of research, communication skills, and leadership and management (Table 2).

A related initiative, the creation of the IARC Early Career Scientists Association (ECSA), was encouraged. ECSA, which was launched in July 2013, aims to bring together students of all levels, as well as postdoctoral scientists and fellows, for training and career development in collaboration with ETR, for social activities, and to facilitate dialogue with ETR and IARC management. ECSA's mission and guidelines were defined by its members, with guidance and support from ETR and senior management.

IARC SUMMER SCHOOL IN CANCER EPIDEMIOLOGY

As a core activity of the IARC Education and Training programme, the IARC Summer School on Cancer Epidemiology is held every year at IARC in June–July, with the goal of improving methodological and practical skills of cancer researchers and health professionals. Both a Cancer Registration module (week 1) and an Introduction to Cancer Epidemiology

Table 2. Generic courses for early career scientists, 2012 and 2013

Research skill development

Principles of oncology (twice)

Epidemiology for non-epidemiologists: a short introduction (twice)

Biostatistics: data preparation and formatting

Biostatistics: generalized linear models using Stata

Basic UNIX for handling large data sets

Responsible conduct of research

Biomedical research ethics (twice)

Communication skills

Publishing in scientific journals

Leadership and management

Project management (three times)

Grant writing (four times)

Financial management

Task management

module (weeks 2 and 3) were organized each year. The target audience is epidemiologists, statisticians, physicians and oncologists, public health specialists, and others with a direct interest in cancer epidemiology or registration. Priority is given to researchers from LMICs.

A balance is sought between leaders in research and more junior staff, and between institutions or groups involved in cancer monitoring, in the evaluation of care practices and preventive interventions, or in etiological research.

Figure 2. IARC Summer School 2013: Introduction to Cancer Epidemiology. © IARC/R. Dray.



Table 3. Specialized and advanced courses, 2012 and 2013

Course title	Location	Number of participants	External collaborations
2012			
Course on cancer registration and survival: principles and methods	Mumbai, India	28	Tata Memorial Centre, UICC
PROLIFICA virology training workshop	Lyon, France	5	PROLIFICA, INSERM
Quality improvement and basic analysis of information in population - based cancer registries in Latin America	Cali, Colombia	36	Instituto Nacional de Cancerologia Colombia, Registro poblacional de cancer de Cali, Universidad del Valle, UICC, PAHO, RINC
Role of infections in human cancers	Trivandrum, India	30	HPV-HEAD consortium
Training course on principles, organization, evaluation, planning and management of cancer screening programmes (module 1)	Lyon, France	26	FCS, EPAAC
EPIC-Soft® 24-HDR	Online course	13	PILOT-PANEU consortium EFSA project
CanReg5	Webinar cycle	91 ^a	GICR, IACR
Cervical and breast cancer prevention training	Jaffna, Sri Lanka	20	Regional Cancer Treatment Center, Jaffna WHO SRL
2013			
EPIC-Soft® Train the trainers	Lyon, France and online learning	22	EU-MENU
EPIC-Soft® Train the trainers	Online learning	30	EU-MENU
Training course on principles, organization, evaluation, planning and management of cancer screening programmes (module 2)	Lyon, France	26	FCS, EPAAC
Training course to screen for (by visual inspection with or without colposcopy) and treat (by cold coagulation/cryotherapy) cervical cancer	Sikkim, India	32	Sikkim State Government STNM Hospital, Gangtok, Sikkim
Training course on colposcopy and LEEP procedures in the management of cervical cancer	Pattaya, Thailand	29	National Cancer Institute Bangkok and Thai Colposcopy Society
Statistical practice in epidemiology with R	Lyon, France	40	Bendix Carstensen, University of Copenhagen, Denmark; Krista Fischer, University of Tartu, Estonia; Esa Läärä, University of Oulu, Finland
1 st pathology training course – ESTAMPA study	Bogota, Colombia	18	Instituto Nacional de Cancerologia de Colombia
IARC regional hub course on cancer registration and epidemiology	Bangkok, Thailand	45	Tata Memorial Centre, US CDC, UICC
IARC regional hub course on cancer registration & epidemiology	Jakarta, Indonesia	40	Tata Memorial Centre, UICC
Cancer registry training course	Izmir, Turkey	44	European Network of Cancer Registries, US NCI, MECC, EU- Joint Research Centre, Izmir Cancer Registry, University of California Irvine
Training course for cancer registry staff: from population-based cancer registry data to a scientific publication	Buenos Aires, Argentina and online learning	8	Erasmus MC University Medical Center, Rotterdam, The Netherlands, IACR, UICC
Training course on cervical colposcopy – ESTAMPA study	Buenos Aires, Argentina	16	Argentinean Society of Lower Genital Tract Pathology and Colposcopy
CanReg5	Webinar cycle	120 ^a	GIRC, IACR
Paediatric oncology for cancer registries	Lyon, France	40	ENCCA, ENCR

^a Participated in one or more of the 6 webinars that were offered each year.

The application rate for the course has been consistently high (up to 250 applicants), with an average of 45 participants attending each module. During the biennium, the Summer Schools enabled the training of a total of 124 researchers and health professionals from 60 countries, 103 of them (83%) from 45 different LMICs.

The Summer School modules have been very well received by the participants, who expressed their appreciation of the quality of the content, the teaching, and the learning environment. As indicated by the results of a course outcomes evaluation carried out in 2012, the vast majority of responding participants were able to apply what they had learned directly to their work. The course also promotes the development of collaborations with other participants, as well as with IARC groups and partners. Finally, most participants remain active in cancer research in public institutions and reuse training material for their own learning or to train others.

SPECIALIZED AND ADVANCED COURSES

Specialized and advanced courses are sometimes organized by IARC's scientific Groups, often with the support of ETR. The majority of these courses are associated with collaborative research projects, where IARC is transferring skills necessary for the conduct of the projects. This will subsequently enable the implementation of the research findings in the countries concerned. Specialized methodological courses held at IARC include Statistical Practice in Epidemiology with R, in collaboration with members of the R development team, and courses on the EPIC-Soft® 24-hour dietary recall and the CanReg5 software (see eLearning below). In some instances, specialized courses are co-organized with external partners and held at diverse locations throughout the world (Table 3). Over the biennium, specialized and advanced courses enabled the training of a total of approximately 700 scientists and health professionals.

Figure 3. IARC Summer School 2013: Measures of occurrence and association. © IARC/R. Dray.



E-LEARNING

IARC has sought to develop distance learning projects to complement and expand the initiatives described above. Some specialized courses were offered completely as distance learning courses. For example, the Cancer Information Section organized a cycle of six webinar sessions on the use of CanReg5 during 2012. Each session combined a live lecture with a Q&A session and was attended by participants from all regions of the world. The sessions were recorded and posted as teaching and learning material on the web site of the Global Initiative for Cancer Registry Development in Low- and Middle-Income Countries (GICR; http://gicr.iarc.fr/index.php?page_id=4&lang_id=1). Both high attendance of the virtual sessions and the large number of downloads of material underline the value of this approach. A similar successful experience was conducted by the Dietary Exposure Assessment Group with a 3-day course on the EPIC-Soft® 24-hour dietary recall software conducted 100% at distance over a period of 2 weeks.

ETR reshaped its web site as an online single entry point to all IARC education and training initiatives, including, for

example, a database that links to existing online IARC learning and training resources such as the digital training manuals for cervical screening and treatment published by the Screening Group (<http://training.iarc.fr>).

Finally, the Agency initiated partnerships to develop e-Learning material that can be used in different contexts. In particular, IARC contributed content and expertise for the development of the International Atomic Energy Agency-Programme of Action for Cancer Therapy (IAEA-PACT) Virtual University for Cancer Control network (VUCCnet) demonstration module on cervical cancer prevention that was successfully tested by the Institut Català d'Oncologia (ICO) in 2011 and 2012. Further negotiations with IAEA-PACT are under way to develop an e-Learning module on cancer registration in 2014. Other collaborations set up during the biennium have led to the planning of a joint IARC/ICO online course in cancer epidemiology targeting Latin American countries, as well as to the contribution to the contents of an e-Learning session, Introduction to Cancer, developed by the London School of Hygiene & Tropical Medicine.

THE GAMBIA HEPATITIS INTERVENTION STUDY (GHIS)

Group head

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Cancer registrar

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The Gambia Hepatitis Intervention Study (GHIS), now in its third decade, is a collaborative project undertaken by IARC, the government of the Republic of the Gambia, and the Medical Research Council, United Kingdom. GHIS was initiated in 1986 to evaluate the effectiveness of hepatitis B virus vaccination in childhood for the prevention of infection, chronic liver disease, and hepatocellular carcinoma in adulthood in a high-risk population. Led by the Director's Office, GHIS is a high-profile project of the Agency. At the beginning of GHIS, a population-based National Cancer Registry (NCR) was established. Cancer cases are identified through public health facilities and private clinics.

Dr Ramatoulie Njie, the hepatologist managing the project, together with a

team of tumour registration officers, carries out enhanced surveillance of chronic liver disease and cancer in hospitals and health centres around the country. She is assisted by junior doctors from the local Edward Francis Small Teaching Hospital (EFSTH) whom she has trained in ultrasonography and liver biopsy techniques. Suspected cases of liver cancer are assessed by ultrasonography, by quantitative α -fetoprotein assays, and, in many cases, by histological confirmation from liver biopsy samples. Histopathology reporting is carried out by two independent pathologists: in The Gambia by Professor O. Khalil at EFSTH and in London by Professor Rob Goldin at Imperial College. All confirmed cases of liver cirrhosis and cancer are recorded in the NCR.

CURRENT STATUS

- There have been sufficient numbers of confirmed liver cancer/liver cirrhosis cases to allow us to start testing the record linkage with the original GHIS vaccination database. This is being undertaken with Sir Andrew J. Hall, now a senior visiting scientist at IARC.
- To further strengthen the histological diagnoses, consideration is being given to sending slides for validation by the histopathology team at IARC.
- Improving the quality of the NCR remains a priority, through recruitment and training of additional tumour registration officers, improving the quality of cancer diagnoses, and providing histopathology support to GHIS.

LABORATORY SERVICES AND BIOBANK GROUP (LSB)

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Ms Elodie Colney

Mr Thomas Cler

Ms Gertrude Tchoua

Mr Jose Garcia

Ms Sophie Guillot

Mr Christophe Lallemand

Established in 2010, the Laboratory Services and Biobank Group (LSB) is responsible for managing the IARC Biobank facility and the common laboratory platform. The LSB Group works closely with the Laboratory Services Committee (LSC) and the Biobank Steering Committee (BSC) to ensure that its activities are adapted to the needs of the Sections and Groups across the Agency. To make information related to all laboratory services readily available and easily accessible, an intranet web site was developed and launched in mid-2013.

In the current biennium, LSB's main focus has been on operational and quality control issues that are important in shaping the future of the Agency's laboratories and the Biobank. LSB led the development of an Access Policy for biospecimens stored in the IARC Biobank. This policy is published on the IARC web site and provides clear guidance on how potential collaborators should approach the Agency with proposals for new studies using existing resources. The centralization of IARC's biological samples, consisting of more than 5 million biospecimens, is being conducted according to principles of best practice, using a common sample management database, developing a Minimum Recommended Data set for biobank data collection, and ensuring optimal storage through investment in new equipment and systems.

A significant initiative in 2012 was the creation of the Technician Discussion Group (TDG). In recognition of the important role played by laboratory technicians in research at IARC, the TDG brings together the technicians, the LSC Chair, and the LSB Head on a regular basis to discuss ongoing laboratory issues and opportunities. The TDG serves as an important medium of communication between LSC, LSB, and laboratory staff.

CATALOGUING, REVIEWING, AND REORGANIZATION OF BIOBANK RESOURCES AND INFRASTRUCTURE

The database used for sample archiving and management, SAMI (Sample Management for IARC), has provided the opportunity to centralize the IARC

Biobank resources. Prior to entry into the centralization programme, collections undergo inventory and inspection for apparent discrepancies between records in existing databases versus actual storage location. The ultimate aim of the inventory is to create and maintain a comprehensive catalogue and up-to-date information on IARCs biological resources. So far, out of the estimated ~1.5 million samples that constitute the IARC-based collection (excluding European Prospective Investigation into Cancer and Nutrition [EPIC] samples, which are stored in a separate database), more than 500 000 (~30%) have been inventoried; close to 400 000 of the inventoried samples have been uploaded, and another 165 000 are in databases ready for migration into SAMI.

To deal with the acute shortage of storage space, samples were reorganized to take up less space, aged freezers were replaced, and back-up equipment was acquired to accommodate the increasing number of samples received (19 000 samples/year) and to prepare for emergencies and breakdowns. In addition, the IARC Biobank facility was expanded to accommodate additional freezers and a separate facility for ambient-temperature storage.

An automatic temperature monitoring system was installed in 2012 to provide real-time monitoring of the storage facilities. This ensures timely interventions that minimize the risk of unexpected breakdowns and thus maintain a stable and secure environment for samples.

INTRODUCTION OF IARC'S MINIMUM RECOMMENDED DATA SET FOR STANDARDIZED DATA COLLECTION FOR IARC STORED SAMPLES

The SAMI database is supported by an integrated IT system and enables users to upload, monitor, and trace sample movement. The original version of SAMI provided a structure for importation of basic information on the origin of the biospecimens and sample location.

Historically, the IARC Biobank has not had direct links to the field and clinical settings where the pre-acquisition and acquisition stages of biospecimens took

place. Since it is important that tools and mechanisms are available to collect vital information on sample quality, from the point of acquisition to transportation to IARC, the Minimum Recommended Data set (MRD) was developed to collect standard data and provide information for the broad use of the stored samples, so as to increase sample value and utility and align the IARC Biobank with other international repositories. The MRD items are extracted from MIABIS (Minimum Information About Biobank Data Sharing: <http://bbmri-wiki.wikidot.com/en:dataset>) and SPREC² (Standard PREanalytical coding for biospecimens: defining the sample PREanalytical code). In implementing MRD, project, patient, and sample information are provided through the completion of a registration form for incorporation into SAMI. The original programme has been upgraded to deal with the heterogeneity of the Biobank samples already in storage, but it will require further upgrading to accommodate the attributes of the MRD.

SAMPLE ACCESS POLICY AND REVISION OF MATERIAL TRANSFER AGREEMENT AND SHIPMENT PROCEDURES

LSB contributes to IARC's mission to promote cancer research internationally by ensuring that the sample collections stored in the IARC Biobank are used for research in a way consistent with IARC's scientific goals and the applicable legal and ethical standard practices. Therefore, in collaboration with BSC, an Access Policy was developed to manage requests for collaborative studies using samples within the Biobank. Information about how to access the resources is available on the newly designed Biobank web site (<http://ibb.iarc.fr/>).

Revisions of the Material Transfer Agreement (MTA) and shipment procedures were initiated during the biennium, in collaboration with the Section of Support to Research (SSR), to bring the documents in line with WHO procedures. In addition, a central Biobank archive system has been created for referencing and archiving fully executed MTAs, informed consent templates, and documents related to shipping and sample exchange.

The IARC Biobank maintains high-quality sample collections from international collaborative studies; provides safe storage facilities; acts as custodian for collections from collaborators in low- and middle-income countries (LMICs); and operates a service platform for sample retrieval, DNA extraction, and shipment of biological material to international collaborators worldwide, according to international guidelines and protocols. During the biennium, a total of 24 projects were conducted relating to 37 requests from international institutions, resulting in a total of more than 16 000 sample retrievals from liquid nitrogen, 16 000 DNA extractions, more than 18 800 DNA aliquots, and shipment of 94 parcels to 17 different destinations worldwide. In addition to activities in evidence-based research (Caboux *et al.*, 2012), emphasis has been on stringent quality control protocols being introduced in the pre-analytical processing services.

IMPLEMENTATION OF GOOD LABORATORY PRACTICE TOOLS, INCLUDING STANDARDIZATION OF LABORATORY STANDARD OPERATING PROCEDURES

Good laboratory practice (GLP) is an essential component of laboratory-based research. To facilitate research conducted at IARC, and in alignment with the Agency's mission of providing leadership in cancer research, several GLP tools were introduced. One is the Electronic Laboratory Notebook (ELN), which replaces the conventional paper notebook as the method of documenting experimental records. In addition to being a safe and secure method of documentation, ELN makes it possible to include multimedia (audio/video clips), electronic files, and hyperlinks to laboratory-based records. Also, captured information can be organized, shared, and easily searched in ELN.

Along the same lines was the introduction of a uniform format for the preparation of laboratory standard operating procedures across the Agency. The template ensures the accurate and up-to-date documentation of laboratory procedures to enhance the smooth running of laboratory activities.

Figure 1. Activities in the IARC biobank pre-analytical services platform. © IARC/R. Dray.



An Agency-wide service of checking and performing basic maintenance on laboratory pipettes was introduced to help researchers and technicians better control their experiments.

SUPPORT OF COMMON LABORATORY PLATFORMS, FACILITIES, AND EQUIPMENT

In line with IARC's 2010–2014 Medium-Term Strategy, which highlighted the paramount importance of performing interdisciplinary research, efforts have been made in the past two years to reinforce the interaction between laboratory-based and epidemiological research. Constant upgrading, updating, and acquisition of state-of-the-art scientific instruments are essential to support this effort.

IARC upgraded the Biobank platform in 2012 by replacing an ageing high-throughput DNA extractor and acquiring an electrophoresis and gel documentation system and DNA volume inspection system. During this same period, a DNA/RNA extractor and a digital slide scanner were obtained for the common laboratory facilities. To respond to the increasing workload associated with the development of large-scale projects, the Agency purchased four specialized robots for sample preparation and extraction to provide high-quality data at a reduced labour cost. IARC also funded the replacement of the ageing pyrosequencing system, an essential

tool for the conduct of high-throughput DNA methylation analysis.

A reliable and efficient maintenance programme is now in place to ensure that equipment is kept in good condition for optimal use of all available resources. In addition, LSB maintains the common laboratory reagents and consumables store, which provides laboratory staff with easy access to commonly used items.

HEALTH AND SAFETY

Health and safety issues are addressed in close collaboration with the Staff Physician and the Occupational Health and Safety Committee (OHSC). LSB acts as technical adviser to OHSC and organizes regular training sessions to keep laboratory staff informed and to provide reminders on safety issues.

LOW- AND MIDDLE-INCOME COUNTRIES BIOBANK SUPPORT

Even though there is a strong international trend towards the development of biobanking, there has been relatively little emphasis on this in LMICs, despite the opportunities for important research projects with partners from these regions. In LMICs, population cohorts and biobanking facilities are either underdeveloped or non-existent, and many of these countries have yet to develop standard sample management protocols and guidelines or to regulate

the exchange of biological samples for research purposes.

Therefore, IARC is exploring the development of an LMIC Biobank and Cohort Network (BCNet). The network will create opportunities for LMICs to work together in a coordinated and effective manner, and jointly address the shortfalls in biobanking infrastructure and other shared challenges such as ethical, legal, and societal issues. A situational analysis on infrastructure and facilities was conducted, followed by a BCNet International Working Group meeting in Lyon in September 2013, organized in collaboration with the United States National Cancer Institute Center for Global Health. Representatives from international societies, networks, and organizations, including ISBER, ESBB, RINC, NCRI, AORTIC, and P³G, met with LMIC partners to identify potential areas and opportunities for cohort building, define specific aims and objectives for the network, determine short- and long-term goals, and advise IARC on next steps, including the specific role the Agency might play in this initiative.

IARC is also participating in some specific national developments in biobanking – for example, supporting initiatives in Egypt (Academy of Scientific Research and Technology, Cairo) and India (Tata Memorial Hospital, Mumbai). Site visits were conducted in 2012–2013 in support of the Agency's involvement in the planning of both these biobank projects.

Figure 2. Participants at the BCNet International Working Group meeting. © IARC/R. Dray.



INTERNATIONAL COLLABORATIONS

LSB participated in the following research activities: The Gambia Hepatitis Intervention Study, the EU-FP7-Prevention of Liver Fibrosis and Cancer in Africa (PROLIFICA) effort (Fye *et al.*, 2013; Mendy *et al.*, 2013a), and the EU-FP7-EPIC-CVD study. LSB is a co-applicant in the recently funded EU-FP7 BBMRI-LPC Grant. The Agency is exploring the possibility of joining BBMRI-ERIC under the category of international organization as an observer.

IARC acts as the custodian for biological samples collected from three national recruitment sites involved in the PROLIFICA project. As a member of

international biobanking societies, IARC has been asked to serve on the conference programme committees for ESBB (2012) and ISBER (2013) and is a member of the biorepository independent expert committee for the Wellcome Trust and NIH-funded Human Heredity and Health in Africa (H3Africa) Common Fund Biorepository programme. An important achievement during the biennium is the contribution as lead author for the biobanking and biosampling chapter in the *Handbook on Cancer Research in Africa*. This volume, which is commissioned by AORTIC, will be published at the end of 2013 and is being translated into French and Portuguese by WHO.