

EDUCATION AND TRAINING GROUP (ETR)

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As a core statutory function of the Agency, IARC's education and training programme has made a substantial contribution to the development of human resources for cancer research in many countries and has also helped to shape the Agency's research strategy and widen its network of collaborators.

Key achievements of IARC's education and training programme during 2016–2017 are presented here. Whereas the Education and Training Group (ETR) coordinates the Agency's activities in these areas, many initiatives are led by the research Groups.

POSTDOCTORAL FELLOWSHIPS

During 2016–2017, new IARC Postdoctoral Fellowships were awarded to 14 postdoctoral fellows from 12 different countries. Research Return Grants were awarded to two fellows from low- and middle-income countries (LMICs), contributing to the establishment of their research activity in their own country.

Fellowships awarded in 2016 (7 new and 10 extensions) were co-funded by the European Union under the Marie Skłodowska-Curie Actions–People–COFUND Programme. Unfortunately,

IARC was deemed ineligible to apply for European Commission MSCA–COFUND calls under the Horizon 2020 framework. Failure to complement funding from the IARC regular budget with additional sources of funds will lead to a significant reduction in the number of training opportunities for Fellows. In order to maintain an effective programme while pursuing alternative funding, the Agency will henceforth restrict the awarding of IARC Fellowships to candidates from LMICs. In view of additional constraints on the regular budget in 2018–2019, the call for applications was suspended in 2017.

In addition to agreements with Cancer Council Australia and the Irish Cancer Society, a new bilateral training agreement with the Research Council of Norway was negotiated, for the training of postdoctoral scientists from Norway at IARC. The 2016 call for proposals led to the award of the first fellowship in November 2016, and the Fellow joined IARC in early 2017.

SENIOR VISITING SCIENTIST AWARD AND EXPERTISE TRANSFER FELLOWSHIP

Two Senior Visiting Scientist Awards were made in 2016–2017 (Table 1). Beyond the development of collaborative research projects, the Senior Visiting Scientist Award often leads to the expansion of important research initiatives or the joint production of key resources for capacity-building.

SHORT-TERM FELLOWSHIPS

In collaboration with the Union for International Cancer Control (UICC), the UICC-IARC Development Fellowship enables one participant of the IARC Summer School to return to IARC for a period of 3 months for further training and collaborative work. In 2017, this fellowship was awarded to a researcher from Kenya. Two other researchers, from Colombia and Libya, also benefited from a 1-month stay within the same call, funded by IARC. A fourth candidate, from Thailand, was supported by a UICC Technical Fellowship.

HOSTING ENVIRONMENT

The Agency also hosts a number of trainees, students, postdoctoral scientists, and visiting scientists supported by project funds from the research Groups. A total of 253 Early Career and Visiting Scientists from 59 different countries worked at IARC during the biennium.

All current rules and procedures pertaining to the IARC Research Training and Fellowship Programme were collected in one single handbook document. In parallel, a review of the programme was carried out, based on the feedback received from various sources, leading to the improvement of the terms and conditions under which

Table 1. Senior Visiting Scientist Awards, 2016 and 2017

2016	
Professor Pär Stattin	Department of Urology, Uppsala University Hospital, Uppsala, and Register holder, National Prostate Cancer Register, Sweden
2017	
Dr John Brent Richards	Departments of Medicine, Human Genetics, Epidemiology and Biostatistics, McGill University, Montreal, Canada

Early Career and Visiting Scientists work while at the Agency.

The Agency continued to support the Early Career Scientists Association (ECSA), which was created in 2013. Among other activities, ECSA successfully held Scientific and Career Days in 2016 and 2017 (Figure 1). In 2017, the invitation was extended to scientists from the Cancéropôle Lyon Auvergne Rhône-Alpes (CLARA) to present their work to peers in the field. Also, a Buddy Programme was launched in 2016, to provide complementary and informal support to newcomers.

Within the framework of the IARC Postdoctoral Fellowship Charter, ETR continued to develop the programme of internal generic skills courses. The close collaboration with the Human Resources Office, within the IARC Learning and Development Framework developed in 2015, led to an increase in the number of courses offered (Table 2). About 50 face-to-face courses were offered to Early Career Scientists in 2016–2017 and

were attended by more than 110 different people. Online opportunities were also offered.

The relationship with the schools of the University of Lyon has been strengthened, in particular through the opening of some of the above-mentioned courses to local students.

IARC SUMMER SCHOOL IN CANCER EPIDEMIOLOGY

In view of budget constraints, the IARC Summer School in Cancer Epidemiology was not held in 2016. The event was held in Lyon in June–July 2017, with the goal of improving the methodological and practical skills of cancer researchers and health professionals. A new one-week module on Implementing Cancer Prevention and Early Detection (Figure 2) was organized and ran in parallel with the module on Cancer Survival Methods for Cancer Registries, followed by the two-week module on Introduction to Cancer Epidemiology. Additional financial support for the

Figure 1. ECSA Scientific and Career Day 2016. © IARC/Anouk Berger.



Table 2. Generic courses for Early Career Scientists, 2016 and 2017

Research skill development

Basic UNIX for handling large datasets
Cancer pathology: basic principles (twice)
Causality in cancer epidemiology
Data analysis for life sciences 1: statistics and R (massive open online course [MOOC])
Data preparation and formatting
Data science: exploratory data analysis (MOOC)
Epidemiology for non-epidemiologists (twice)
Galaxy: introduction to Galaxy
Galaxy: administration and development of tools
Galaxy: DNA methylome analyses
Galaxy: mutational signatures analyses with MutSpec
Generalized linear models using Stata
Introduction to biostatistics
Laboratory safety: biological risks (twice)
Linux cluster

Research ethics

Biomedical research ethics: an introductory course (twice)

IT skills

Adobe Acrobat Pro: PDF mastery (online)
Excel intermediate course

Writing skills

Effective scientific posters
EndNote basic (twice a year)
EndNote advanced (three times)
Grant writing (twice)
Open Access workshop (three times)
Publishing in scientific journals (twice)
PubMed workshop
Systematic reviews search methodology (twice a year)
Web of Science (twice a year)
Zotero

Communication skills

Effective interpersonal communication
Effective presentation skills
IARC Learning Week: harassment session
Instructor development course

Leadership and management

Financial management (twice)
Project management (twice)
Task management (twice)

Summer School came from the United States National Cancer Institute (NCI) as well as from the Nordic Cancer Union (NCU).

The Summer School was very well received by the 77 participants from 47 countries, of whom about 90% were from LMICs.

IARC “50 FOR 50” INITIATIVE

The IARC “50 for 50” initiative, organized in conjunction with the scientific conference held in Lyon on 7–10 June 2016 to celebrate the 50th anniversary of the establishment of IARC, was a fellowship programme that brought together, in Lyon, 50 future leaders in cancer research from LMICs, one for each year of IARC’s existence. The selected participants came from 36 countries across the globe. The one-week programme included participation in the three-day scientific conference, a two-day pre-conference workshop, and a series of networking events to foster collaborations. A dedicated online space was set up for preparatory work, providing access to a variety of resources and networking. The vast majority of the participants rated the initiative very positively, stressing the quality of the interactions and the opportunity to learn about a wide variety of research topics and meet world experts in those fields.

Figure 2. IARC Summer School 2017, module on Implementing Cancer Prevention and Early Detection. © IARC/Sandrine Montigny.



IARC has brought learning and training resources closer to their target audiences by developing eLearning material and initiatives.

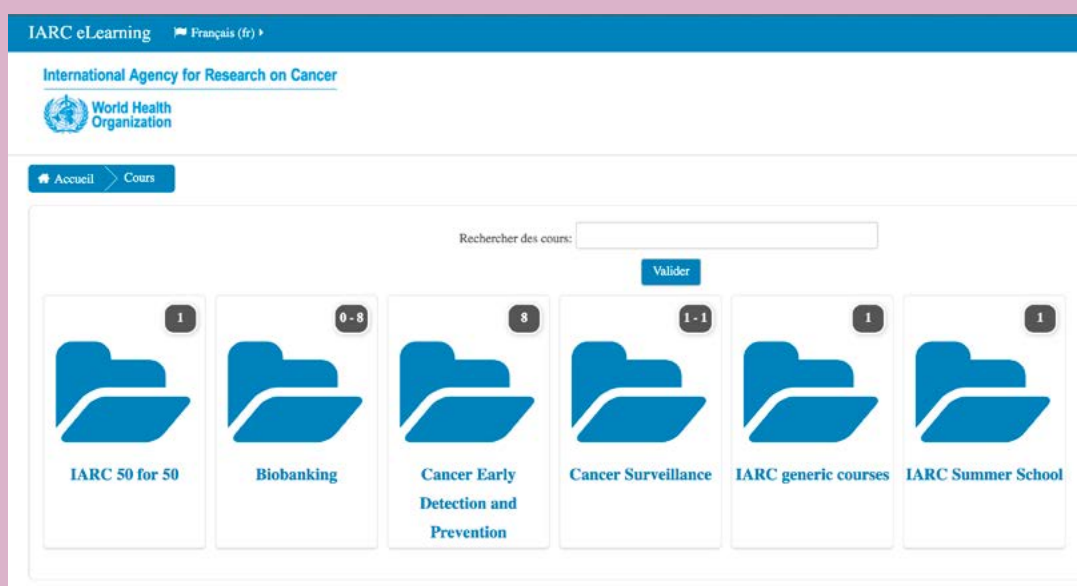
A learning management system was set up in 2016, enabling the design and deployment of online spaces for course participants to access practical information and learning resources before, during, and after the event (learning.iarc.fr).

Video-based learning resources were produced using the recording infrastructure set up at the Agency during the previous biennium, and made available from IARC WebTV (video.iarc.fr), from the learning management system, or from other IARC webpages.

eLearning modules were developed that combine videos and quizzes and are used as online material for participants to prepare before a face-to-face course (blended approach).

Webinar series were organized, reaching out to an increasing number of professionals worldwide (in biobanking and cancer registration).

Finally, partnership initiatives have been pursued to develop eLearning materials and courses. The collaboration established with the Institut Català d'Oncologia (ICO), Spain, led to the launch of the second joint online course in cancer epidemiology aimed at Latin American countries (<http://www.e-oncologia.org/cursos/postgrado-fundamentos-metodologicos-investigacion/#.Wdhz82iCzD4>).



IARC eLearning website. © IARC.

SPECIALIZED AND ADVANCED COURSES

Specialized or advanced courses are organized by IARC's scientific Groups, with increasing support from ETR. Most of these courses are associated with collaborative research projects, where

IARC is transferring skills needed to conduct the projects and to enable the subsequent implementation of the research findings in the countries concerned. In some instances, specialized courses are co-organized with external partners and held at

diverse locations throughout the world (Table 3). During the biennium, more than 60 courses were organized, enabling the training of a total of about 2500 scientists and health professionals.

Table 3. Specialized and advanced courses, 2016 and 2017

Course title	Location	Number of participants	External collaborations
2016			
CanReg5: train the trainers workshop	IARC	14	UICC; Regional Hubs for Cancer Registration in Sub-Saharan Africa, Asia, and Latin America
Basic cancer registration course	Malaysia	80	Regional Hub for Cancer Registration in Southern, South-East, and Eastern Asia; National Cancer Institute Thailand; Ministry of Health, Malaysia
Cancer registration workshop	Kazakhstan	27	Regional Hub for Cancer Registration in Northern Africa, Central and Western Asia; Kazakh Institute of Oncology and Radiology
Cancer registration assessment and workshop	Iraq	18	Regional Hub for Cancer Registration in Northern Africa, Central and Western Asia; WHO Regional Office for the Eastern Mediterranean
Basic cancer registration course	Indonesia	60	Regional Hub for Cancer Registration in Southern, South-East, and Eastern Asia; National Cancer Institute Thailand; Ministry of Health, Indonesia
Cancer registration workshop	Australia	45	Cancer Council Australia and other regional partners
Caribbean cancer registry workshop	Turks and Caicos Islands	22	Caribbean Public Health Agency (CARPHA); North American Association of Central Cancer Registries (NAACCR); United States National Cancer Institute (NCI), National Institutes of Health (NIH)
Cancer registration course	Russian Federation	44	WHO Regional Office for Europe
IARC–GICR course: Descriptive epidemiology research and analytical approach using population-based cancer registry data	Turkey	35	Regional Hub for Cancer Registration in Northern Africa, Central and Western Asia; Ministry of Health, Turkey
Workshop on cancer survival methods for population-based registries in low-and middle-income countries	Morocco	50	African Cancer Registry Network/Regional Hub for Cancer Registration in Sub-Saharan Africa; International Association of Cancer Registries
Online course on reports for cancer registries	Argentina	33	Regional Hub for Cancer Registration in Latin America; INC Argentina for Argentinian registries (hospital- and population-based)
Basic cancer registration course	India	35	Regional Hub for Cancer Registration in Southern, South-East, and Eastern Asia; WHO Regional Office for South-East Asia
CanReg regional training course	USA	10	Caribbean Public Health Agency (CARPHA); North American Association of Central Cancer Registries (NAACCR); United States National Cancer Institute (NCI), National Institutes of Health (NIH); Regional Hub for Cancer Registration in Latin America
Coding course (ICD-O-3) for hospital-based cancer registries and population-based cancer registries (online outreach for the Hub)	Chile	59	Ministry of Chile for Chilean registries; Regional Hub for Cancer Registration in Latin America
Cancer registration course	Kyrgyzstan	26	WHO Regional Office for Europe
Cancer registration course	Ghana	25	African Cancer Registry Network/Regional Hub for Cancer Registration in Sub-Saharan Africa; IAEA
CME on breast cancer management	India	100	Christian Hospital Ambilikai and Cancer Control Foundation of India, Pollachi
Interactive workshop: strengthening the cancer control programme in Ukraine	IARC	5	
Orientation course on cervical and breast cancer early detection and control	Bangladesh	200	Directorate General of Health Services, Ministry of Health and Family Welfare, Government of Bangladesh; Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka; WHO country office for Bangladesh
Leadership training in colposcopy and advocacy for cervical cancer control	India	22	American Cancer Society
Training on thermocoagulation treatment of cervical precancerous lesions	Zambia	30	National Coordinator Cancer Prevention, Ministry of Health, Zambia
Training course on colposcopy and LEEP procedures in the management of abnormal cervical cancer screening results	Indonesia	23	Thai Society for Colposcopy and Cervical Pathology (TSCCP), Thailand; Department of Obstetrics and Gynaecology, Faculty of Medicine, Gadjah Mada University, Indonesia

Table 3. Specialized and advanced courses, 2016 and 2017 (continued)

Course title	Location	Number of participants	External collaborations
Project staff training for the follow-up phase of the 2- versus 3-dose HPV vaccine clinical trial in India	India	39	
Oncological screening: cervical cancer	Russian Federation	50	Petrov Research Institute of Oncology, Saint Petersburg, Russian Federation
Training course on the role of colposcopy in the early detection and prevention of cervical cancer for medical officers and nursing officers at colposcopy units	Sri Lanka	50	National Cancer Control Programme, Ministry of Health, Nutrition and Indigenous Medicine, Colombo, Sri Lanka; WHO country office for Sri Lanka
Training course for master trainers in cervical cancer prevention, early detection, and management (participants from Morocco and Gabon), blended training (online/face-to-face course in India), in French	India	16	Lalla Salma Foundation for Cancer Prevention and Treatment, Rabat, Morocco; Tata Memorial Centre Rural Cancer Project, Nargis Dutt Memorial Cancer Hospital (NDMCH), Barshi, Maharashtra, India
IARC-BELMED course: training course on principles, organization, evaluation, planning, and management of cancer screening programmes	Belarus	34	WHO headquarters, Switzerland; Public Health England, United Kingdom; Centro Javeriano de Oncología, Colombia
Introduction: training on Food Table GloboDiet	GoToMeeting	6	University College Dublin, Ireland
Train the trainers course on GloboDiet 24hDR interviews: data cleaning	GoToMeeting	5	GloboDiet collaborators, Malta
Train the trainers course on GloboDiet 24hDR interviews	GoToMeeting	8	GloboDiet collaborators, Brazil
ICAMA – Latin American Research Network in breast cancer: training in pathology and epidemiology	Costa Rica	15	PRECAMA collaborators in Latin America plus ICAMA colleagues from Guatemala
ABC-DO pathology training course	Uganda	22	
Training workshop for pathologists in cancer management	Côte d'Ivoire	24	West African Division of the International Academy of Pathology (WADIAP)
B3Africa webinars 1–3	GoToWebinar	23 + 60 + 22	Medical University of Graz, Austria; Uppsala University, Karolinska Institutet, Sweden
B3Africa face-to-face training course	South Africa	23	Stellenbosch University, Faculty of Medicine and Health Sciences, South Africa
2017			
Cancer registration workshop	Gabon	20	African Cancer Registry Network/Regional Hub for Cancer Registration in Sub-Saharan Africa
SurvCan-3: data collection for survival studies: follow-up using passive and active methods, live webinar	GoToWebinar	34	Cancer Institute (WIA), Chennai, India
Basic cancer registration course	Sri Lanka	60	Regional Hub for Cancer Registration in Southern, South-East, and Eastern Asia
Intermediate analysis cancer registration course	Ecuador	18	Regional Hub for Cancer Registration in Latin America; PAHO; INC Argentina; SOLCA Quito
Basic cancer registration course	Myanmar	70	National Cancer Institute Thailand; National Cancer Center Japan
Essential TNM: webinar sessions (3)	GoToWebinar	97 + 97 + 92	Regional Hub for Cancer Registration in Latin America; National Cancer Registry Uruguay
Cancer registration methods and strengthening cancer registries	Russian Federation	33	WHO Regional Office for Europe; Moscow Research Institute for Oncology; Regional Hub for Cancer Registration in Northern Africa, Central and Western Asia
Online regional transmission (Latin America) from Colombia National Cancer Institute coding course	Colombia (virtual for the region)	60	Regional Hub for Cancer Registration in Latin America; WHO/PAHO country office in Colombia
Cancer coding and staging masterclass	IARC	20	African Cancer Registry Network; WHO Regional Office for Europe
Hands-on training course in thermocoagulation for master trainer gynaecologists (participants from China)	India	4	Cancer Institute of the Chinese Academy of Medical Sciences (CICAMS), Beijing, China; Christian Cancer Centre, Ambilikai, India

Table 3. Specialized and advanced courses, 2016 and 2017 (continued)

Course title	Location	Number of participants	External collaborations
Hands-on training of pathology technicians for capacity development and strengthening of cytopathology, histopathology, and immunohistochemistry services in Bangladesh	Bangladesh	12	Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh
Cervical cancer screening using VIA and management of premalignant lesions	Ecuador	6	Fundación Internacional Buen Samaritano Paul Martel Inc. (FIBUSPAM) and Instituto Nacional de Enfermedades Neoplásicas (INEN), Peru
Training course for master trainers in cervical cancer prevention, early detection, and management (participants from Bangladesh and India)	India	18	Directorate General of Health Services, Ministry of Health and Family Welfare, Government of Bangladesh; Tata Memorial Centre Rural Cancer Project, Nargis Dutt Memorial Cancer Hospital (NDMCH), Barshi, Maharashtra, India; WHO country office for Bangladesh
Training course for service providers in thermocoagulation and loop electrosurgical excision procedure (LEEP)	China	36	Cancer Institute of the Chinese Academy of Medical Sciences (CICAMS), Beijing, China; Inner Mongolia Provincial Health Services
Training course for master trainers in cervical cancer prevention, early detection, and management	India	7	Chittaranjan National Cancer Institute
Training course in breast cancer awareness, prevention, early detection, and treatment	Ghana	130	Breast Care International
Training course on colposcopy and LEEP procedures in the management of abnormal cervical cancer screening results	Thailand	71	National Cancer Institute Thailand
CICAMS-IARC training course: planning and implementing cancer control programmes	China	36	Cancer Institute of the Chinese Academy of Medical Sciences (CICAMS), Beijing, China
Medical statistics for clinicians training course	India	50	Regional Cancer Centre, Trivandrum, India
Training course for master trainers in cervical cancer prevention, early detection, and management	India	15	Tata Memorial Centre Rural Cancer Project, Nargis Dutt Memorial Cancer Hospital (NDMCH), Barshi, Maharashtra, India
Training course for master trainers in cervical cancer prevention, early detection, and management	India	8	Regional Cancer Centre, Trivandrum, India
On-site visit to a recognized centre on breast cancer screening	United Kingdom	6	Public Health England, United Kingdom
ESTAMPA update on colposcopy training, within the First International Congress of Colposcopy and Pathology of the Lower Genital Tract	Peru	25	Peruvian League Against Cancer; Ministry of Health of Peru; PAHO; WHO; ESTAMPA sites around Latin America
Oncological screening	Russian Federation	20	Petrov Research Institute of Oncology, Saint Petersburg, Russian Federation
Training course on planning, feasibility, and piloting of the BELMED programme	Belarus	35	Public Health England, United Kingdom; WHO Regional Office for Europe
On-site training supplemented by a course	Belarus	20	Public Health England, United Kingdom; Loughborough University, United Kingdom
ICAMA – Latin American Research Network in breast cancer: training in pathology and epidemiology	Colombia	15	PRECAMA collaborators in Latin America plus ICAMA colleagues from Guatemala
B3Africa webinars 4–6	GoToWebinar	15 + 14 + 17	Medical University of Graz, Austria; Swedish University of Agricultural Sciences
Training course for master trainers in cervical cancer prevention, early detection, and management	Bhutan	20	Ministry of Health, Royal Government of Bhutan; Jigme Dorji Wangchuck National Referral Hospital, Thimphu, Bhutan
BCNet/BBMRI-ERIC training workshop on biobanking for pathologists and pathology/histology technicians	Egypt	24	BBMRI-ERIC, Children's Cancer Hospital, Egypt
BCNet symposium: B3Africa in-person training	IARC	49	B3Africa consortium