

IARC EDUCATION AND TRAINING PROGRAMME

1. The Agency is reviewing its objectives and approach to education and training. The Director requests the Scientific Council to consider the proposals in this document and to advise him on the future priorities and opportunities in this key area within the context of the IARC Medium-Term Strategy (2010–2014).

Introduction

2. In line with the IARC Statute, the provision of education and training is a core activity of the Agency. Special attention is given to countries where resources for the control of chronic diseases in general and cancer in particular are limited. By helping to develop local expertise in cancer research and by strengthening research institutions through international collaborations, IARC aims to enhance cancer prevention through cancer research.

3. The Agency has a unique role as an interdisciplinary scientific research organization coordinating international collaboration in cancer research and providing strong and independent scientific evidence required for policymaking by national governments and international organizations, including the WHO. The Agency also attracts top international cancer researchers who spend various periods of time contributing to the Agency's programmes, making IARC the ideal environment for education, training and exchange.

4. Outside of industry, research posts are usually housed in educational environments. One success of IARC in the context of training has been its role in actively building and maintaining relationships with diverse and numerous key players in the field of cancer research, including past fellows, course attendees and course faculty. In this way the activity has helped create subsequent opportunities for conducting high-quality research in a cost-effective way, as well as providing an important mechanism for recruiting scientists to cancer research.

5. For example, IARC post-doctoral fellowships currently include modest support to fellows upon return to their home countries to help them establish cancer research projects targeting the most important local needs in collaboration with IARC; cancer registration training leads to increased capacity in registries that contribute to the Agency's collation of global cancer data; and training in cancer screening techniques is applied in subsequent research projects with high impact for public health.

6. In contrast to many other educational programmes the IARC programme is an extension to its ongoing research in low- and medium-resource settings. It is thus restricted to areas of research expertise and activity at the Agency. This link to the strategic research objectives of the Agency has undoubtedly contributed to the impact and effectiveness of its education and training programme.

7. In recent years the IARC education and training programme has had no single individual dedicated to developing the programme. Rather individual scientists have provided oversight to specific parts of the programme e.g. Fellowships, by assigning a small fraction of their overall time to the tasks. They have been supported by excellent administrative staff. In addition, there has been no overall integration of the programme, with research Groups taking initiatives in their individual areas of expertise e.g. cancer registration. Clearer leadership and an integrated plan are therefore important aspects if the programme is to develop and achieve its full potential.

8. Education and training at IARC focuses on courses and fellowships. The past approaches are summarized briefly below.

Courses Programme

9. The training courses programme was initiated in 1968 aimed at improving cancer research knowledge worldwide, particularly in areas where local opportunities for instruction are limited; the courses also served to identify and prepare collaborators in the Agency's field programmes. Between 1995 and 2005, 2–3 courses were organized annually either at the Agency, generally specialized courses, or in developing countries, where they were mostly basic courses in cancer epidemiology.

10. Since 2005, mainly in response to difficulty in targeting the best students at regional level, resources were focused on one summer course held at IARC, and an international course co-organized with another funding institute.

11. Over the years Groups in the Agency have increasingly organized courses specific to their research programme using mainly extra-budgetary funding. IARC staff also frequently participate in courses organized by other organizations.

12. In 2009 the Agency conducted a number of training courses worldwide. Examples are highlighted below:

- The 2009 IARC Summer School was held in Lyon (14 June–3 July 2009). There were 54 participants (including 27 from low- and medium-resource countries) from a total of 35 countries. The main topics covered included cancer registration and an introduction to cancer epidemiology.
- The Agency, jointly with the Cancer Institute of the Chinese Academy of Medical Sciences (CICAMS), organized a Cancer Registration Course (14–19 September 2009) in Beijing, China. There were 34 participants from four different countries in the region.
- A cervical cancer prevention course was organized in Libreville, Gabon in collaboration with WHO-AFRO (20–25 April 2009). There were 30 participants from 11 different countries in the region.

Fellowship Programme

13. The IARC Fellowship Programme was initiated in 1966 and was aimed at young scientists with no previous postdoctoral experience. Applicants were chosen regardless of their country of origin and the host institution could be anywhere in the world. Selection paid particular attention to cancer epidemiology as there was a virtual absence of graduate training programmes in chronic disease epidemiology at the time.

14. As well as being successful in terms of publication record and percentage of scientists returning home and remaining in cancer research (73%), the programme also enhanced the visibility of IARC and fostered the establishment of novel networks, notably for promoting epidemiological and public health activities in developing countries. Approximately 15 fellowships per annum were awarded and the stipend rate compared well with that provided by other granting organizations. The awards were for one year although extensions were possible paid from local funds.

15. In 2004 the Scientific Council recommended that the programme increase its focus on recruiting Fellows from resource-poor countries and from then until 2009 fellowships were granted only to candidates from these countries. Fellowships were tenable solely at IARC and an extension for a second year was possible subject to satisfactory performance. A post fellowship Return Grant was introduced ("seed grant") to set up a collaborative research project upon return home. In addition an expansion of the programme included two new features: the introduction of a PhD fellowship programme, again aimed solely at low- and medium-resource countries and an Expertise Transfer Fellowship to enable a senior researcher from a high-income country to transfer knowledge and expertise to a host institute in a low- or medium-resource country.

16. The Agency awarded eight fellowships in 2009 comprising four new post-doctoral awards and four extensions for a second year. In addition, two PhD studentships were extended for a second year and two Visiting Scientist Awards granted for six months each to Professor Julian Peto (UK) and to Professor David Richardson (USA). Overall the various awards related to candidates from Bulgaria, People's Republic of China, India, Indonesia, Iran, Mongolia, the Russian Federation, the United Kingdom and the USA. There was no Expertise Transfer Fellowship awarded.

17. In October 2009 the Agency successfully secured European Union co-funding for the Fellowships Programme, to a value of € 0.84 million, to develop the programme to encourage young scientists from high-resource countries to devote a career to international cancer research to benefit low- and medium-resource countries.

18. Over the years the Groups in the Agency have increasingly directly recruited pre- and post-doctoral students supported by extra-budgetary funds. Therefore the Agency has a mixture of fellows in receipt of an IARC award and those supported by other funds from specific research Groups. Nevertheless, all post-doctoral fellows are approved by the IARC Fellowship Committee in order to maintain a level of quality control across the Agency.

19. The majority of fellows over the years have been post-doctoral, although in recent years an increased number of PhD students have studied at the Agency, most from local universities.

20. Currently there are 34 post-doctoral scientists and 47 students at the Agency from a total of 36 different countries. Of the pre- and post-doctoral fellows combined 14 are supported by IARC fellowships. The remainder are supported by other funds, typically from extra-budgetary sources (grants, fellowships) or regular budget.

Future directions

21. In May 2009 the Director convened an internal working group to review the objectives, content, leadership and funding of the education and training programme at the Agency. This was followed in November by an *ad hoc* Advisory Group (AG) meeting on the future activities in the area for the next five years. The AG included external experts: Dr X. Bosch (Catalan Institute of Oncology, Spain), Dr A. Company (Catalan Institute of Oncology, Spain), Professor R. Eeles (Royal Marsden NHS Foundation Trust, UK and former Chairperson of the IARC Fellowships Selection Committee), Professor J. Peto (London School of Hygiene & Tropical Medicine, UK), Dr R. Saracci (European Educational Programme in Epidemiology, Italy), Ms B. Vought (UICC, Switzerland) and Professor D. Zaridze (Russian N.N. Blokhin Cancer Research Centre and member of the Scientific Council). The future plans outlined below are the result of considerations within the Agency in terms of the Medium-Term Strategy (2010–2014) development and advice from the AG.

Structure

22. The Agency will establish an Education and Training (ETR) Group incorporating both the Courses and Fellowship programmes, to be led by a senior professional scientist in order to strengthen this area of activity. The priorities set for the development and delivery of the IARC Education and Training programme should continue to be driven by the research priorities of the Agency. The assignment of a professional staff member to head the Group will help promote the programme through development of a coordinated, integrated and focused portfolio of activities as well as the development of strong external partnerships.

23. In order to filter and prioritize training needs, the Agency will set up an internal advisory group of IARC scientists to ensure the programme continues to focus on training of benefit to low- and medium-resource countries and to adapt to the latest developments in cancer research.

Courses Programme

24. The Agency will develop its activities based on the following principles:

- IARC Courses should be matched to the Agency's core competencies in cancer registration, cancer epidemiology, molecular epidemiology and cancer screening and early detection. Training of IARC staff is considered outside the remit of the ETR Group and to be the responsibility of Human Resources.
- International courses based in low- and medium-resource countries should continue, but in a more coordinated fashion to avoid fragmentation, duplication and overload on IARC staff time and resources. The internal advisory group will allow IARC staff involved in these courses to discuss their proposals and will permit development of a rolling biennial plan, inclusive of details of required resources and partnerships.
- The IARC Summer School will continue in its current form in Lyon. The course will draw both on IARC staff and external professionals for course delivery. The course content will be reviewed by the internal advisory group to ensure that capacity built during the international courses is further developed.
- IARC will evaluate the application of distance learning (DL) to its education and training. A first analysis will be made through a small working group composed of IARC staff and DL experts in oncology, biomedicine and public health coming from institutions where this type of teaching tool has already been developed. A specific consideration will be the feasibility of a DL introductory course on cancer epidemiology (based on the IARC publication: 'Cancer Epidemiology: Principles and Methods').
- The Agency will seek partnerships for courses where this adds value. However, partnerships will not involve commercial partners, in order to maintain the independence of the Agency.
- IARC will continue to make its basic courses available without fees.

Fellowship Programme

25. The Agency will seek to expand its fellowships programme through identifying extra-budgetary sources of funding including exploring bilateral agreements with Participating States. The Agency will also improve the post-doctoral experience at IARC through the provision of a more structured approach to training.

26. The following principles will apply to development of the Fellowship programme at IARC:

- The recruitment of Fellows will be driven by scientific excellence, with priority, but not exclusivity, given to Fellows from low- and medium-resource countries and research projects relevant to these countries. Selection will be by peer-review through the IARC Fellowship Selection Committee.
- Emphasis in terms of expansion of the programme will be on post-doctoral training rather than pre-doctoral, the former being better suited to the Agency's profile. However, pre-doctoral fellows from the local universities are beneficial to creating good working relations in the French scientific community, particularly in relation to

collaborations with laboratory groups. IARC Fellowships will continue to be located at the Agency in Lyon.

- All IARC post-doctoral fellows will be provided with a “charter” describing what can be expected from an IARC supervisor and what is expected of the Fellow in return. This “charter” will also include a programme of developing core competencies in order to enhance career prospects, including the writing of scientific papers, grant writing, basic statistics and project management, and access to distance learning programmes where appropriate. Progress will be monitored throughout the fellowship period and the performance of the fellow and supervisor evaluated with an exit questionnaire. The “charter” and evaluation procedures will be agreed by the IARC Senior Leadership Team.
- Recognizing that the majority of students at IARC lie outside the Fellowship Programme and within the research Groups, the new ETR Group will cooperate with senior scientists across the Agency to ensure the education and training needs of all pre- and post-doctoral fellows at IARC are addressed adequately. The question of extending the training curriculum in this way needs to be explored in-house.

27. There are other options on which the Director would appreciate the advice of the Council, recognizing these initiatives would require the Agency to identify additional resources if supported:

- Developing the Return Grant to Fellows to include a post-fellowship contribution over a biennium (for example, salary complementation or research resources) to help Fellows from low- and medium-resource countries to establish their research activity in their own country. An international and national “mentor” could be assigned to the Fellow as an additional way to help anchor and support the Fellow on return.
- The possibility of Fellows spending alternate years at IARC and another suitable institution of the Fellow’s choice. This would link IARC to key institutions around the world and create a global network of experts who could also contribute as IARC faculty.
- The possibility of extending the Fellowship Programme to include short-term stays at IARC (1–3 months) in order to transfer basic skills for cancer research to promising candidates from low- and medium-resource countries.

Dissemination

28. Renewed efforts will be made to disseminate information about IARC Education and Training opportunities with special emphasis on low- and medium-resource countries in collaboration with NCD contacts in WHO Regional Offices, the UN Senior Fellowship Officers, the extended courses programme as well as through the implementation of RSS (web feed formats) feeds on IARC websites. To further increase awareness, the announcements of awards could also be posted on the websites of the technical units of the WHO Regional Offices.

Resources

Personnel

29. Ms M. Heanue (P4 professional scientist) will coordinate the programme across the Agency and liaise with external partners, including seeking to develop the extra-budgetary resources of the programme. The Fellowship programme will continue to be managed by Ms E. El Akroud (LY6) and the Courses programme by Ms S. Anthony (LY5). Ms S. Haver (LY5) will also provide some administrative support to the programme. Dr Z. Herceg is responsible for the Fellowship programme.

Finance

30. As a core IARC activity, the majority of the costs of the programme are currently covered by the regular budget. For the biennium 2010–2011 the fellowship budget has been increased to 800 000 Euros (from 540 000 in 2008–2009) and the Courses budget from 140 000 to 180 000 Euros. The Fellowship programme continues to benefit from generous support of 50 000 Euros per annum from the Italian Association for Research on Cancer and 840 000 Euros from 2010–2014 from the Marie Curie award mentioned above.

31. In addition, to this support, limited funds are obtained from governmental and non-governmental organizations, to sponsor fellows and course participants from low-income countries e.g. the US National Cancer Institute, the European Commission (through the ECNIS Network of Excellence and FP7 Marie Curie), the International Atomic Energy Agency, the Alliance for Cervical Cancer Prevention, the International Union Against Cancer, the Italian Association for Research on Cancer and various WHO Regional Offices. The funds raised from participation fees in advanced courses are used for the same purpose.

32. The Scientific Council is asked for advice in seeking additional funding from, for example, Participating States and Foundations, in order to finance the expansion of Education and Training proposed here.

33. The proposed Education and Training programme at IARC will be assessed through specific Key Performance Indicators (KPIs) that are currently being considered by the Scientific Council (see document SC/46/9).

Summary

34. The Agency will develop its Education and Training programme into an integral whole, under the direction of a full-time senior scientist in order to coordinate the various IARC initiatives and promote them both internally and externally. This priority is in keeping with its educational mission and in support of its research programme. The purpose is to foster knowledge on frontier developments in cancer research relevant to prevention and to develop skills in epidemiological research, and laboratory research geared towards epidemiology, with special emphasis on training initiatives of benefit to low- and medium-resource countries.

35. Education and training is vital, providing as it does the opportunity to build a new generation of cancer researchers worldwide with the motivation and skills to tackle the global cancer burden. The ETR Group will place renewed emphasis on this task, drawing on partnerships where appropriate and using modern technology to transfer its knowledge base to the individuals and organizations where it will have most impact.