International Agency for Research on Cancer

World Health Organization

Governing Council **GC/62/12**
Sixty-second Session 31/03/2020

Monday 11 and Tuesday 12 May 2020
To be held by webconference (due to COVID-19 pandemic and travel restrictions)

ACCEPTANCE OF GRANTS AND CONTRACTS

1. Post facto reporting

The Governing Council is invited to note the post facto reporting of grants and contracts accepted by the Director over €100 000 per annum, including sums passed to third parties, as detailed below.

Director's Office (DIR)

Education and Training Group (ETR)

1.1 Project title: **The Human Exposome Assessment Platform (HEAP)**

HEAP will create a research framework for the efficient and systematic assessment of known and unknown environmental exposures and their possible relevance to human health. The framework will enable population-based biospecimens annotated using registry linkages and real-time recorded exposome data from wearable devices. HEAP will provide informatics infrastructure, platform and software tools for storing, mining, and integrating heterogeneous data towards the generation of knowledge on how environmental exposures affect the health of the citizens of Europe. HEAP will overcome the fragmentation between disciplines, countries, infrastructures, and data sources to provide a framework for international collaboration on systematic exposome assessment using large and stringently followed cohorts of biospecimens, beyond state-of-the-art recording and analysis tools, and a secure and scalable informatics platform. The framework will generate a common knowledge base through a continue-learning platform for present and future applications of integrated human exposome data. HEAP includes expertise on ethics and law, environmental epidemiology and study design, biospecimen analysis and interpretation of data, e-Science tools and IoT, machine learning and computing infrastructures, as well as expertise in stakeholder outreach and public engagement.

Donor:	European Commission - Research and Innovation (BE)
Duration:	60 months
Funds for IARC:	€546 125.00
Funds for partners:	€11 450 390.00
Total:	€11 996 515.00

Partners: Karolinska Institutet, Sweden; Statens Serum Institute, Danemark; University of Tampere, Finland; Medlaw Consult, Netherlands; University of Oulu, Finland; Medical University of Graz, Austria; University of Warsaw, Poland; Logical Clocks Inc, Sweden; University College London, United Kingdom; IT Center for Science, Finland.

Section of Cancer Surveillance (CSU)

1.2 Project title: **Supporting Population-Based Cancer Registries**

This project contributes to broader efforts in support of population-based cancer registries (PBCR), in line with Vital Strategies' Data Impact Program, within the Data for Health Initiative funded by Bloomberg Philanthropies. More specifically, IARC has collaborated with its associated IARC Regional Hubs in Mumbai and Sub Saharan Africa to develop PBCR capacity, in liaison with Vital Strategies. Training, technical expertise transfers and strategic advice have already been provided through initial pilot projects in Tanzania and Myanmar. To complement existing activities, the project objectives are to: i) provide technical support in cancer registration to Myanmar, Tanzania and two additional countries; ii) develop a set of best practices guidelines for PBCRs, including indicators to monitor progress; and, iii) develop one e-learning module on cancer registration (subject topic to be determined).

Donor:	Vital Strategies (US)
Duration:	18 months
Funds for IARC:	€180 000.00 (US$ 200 000.00)
Funds for partners:	-
Total:	€180 000.00 (US$ 200 000.00)
Partners:	The African Cancer Registry Network (AFCRN), United Kingdom

1.3 Project title: **Cancer risk in childhood cancer survivors (CRICCS): understanding the causes to target prevention**

An effective cancer therapy results in a high survival of children with cancer. However, the survivors are subjected to increased morbidity and mortality compared to their unaffected peers and they have a greatly elevated risk of a second cancer. This risk varies with age, neoplasm, therapy and year of diagnosis. Using the data of more than 400 000 unique cancer patients we will quantify the risk of second primary cancers in the population of 225 000 five-year survivors followed-up for a mean time of nine years and characterize the distribution of close to 4000 second cancers in various subpopulations. The results will help to assess the burden and outline preventive actions.

Donor:	Children with Cancer UK (GB)
Duration:	36 months
Funds for IARC:	€408 757.53 (GBP 349 400)
Funds for partners:	-
Total:	€408 757.53 (GBP 349 400)
Partners:	Public Health England (PHE), United Kingdom; University College London, United Kingdom; Lund University Medical Center, Sweden.

Section of Early Detection and Prevention (EDP)

Prevention and Implementation Group (PRI)

1.4 Project title: **Quality Assurance in the ESTAMPA study: presenting update of study results and of QA measures in place**

The recent WHO action call to eliminate cervical cancer demands evaluation of screening strategies that can be affordable and sustainable in different settings around the globe. HPV-based screening programmes represent the current best alternative because HPV testing will identify most women harbouring cervical precancer and cancer, who then can be adequately treated. However, as HPV infection is very common, thus, a large proportion of women testing positive for HPV will not have cervical disease. In order to complete the screening process, all HPV positive women should be referred to workup diagnostics. This action will generate a lot of unnecessary anxiety among women and will possibly collapse diagnostics health services. This is why a second test, triage, on HPV positive women is needed, so that the majority of women with disease are referred to diagnosis and treatment and the majority of HPV positives without disease are reassured of being less likely to have disease and are recalled 12 or 18 months later for a check-up.

The ESTAMPA study aims at 1) evaluating different screening techniques that can be used as triage of HPV positive women, and 2) contributing to the implementation of HPV-based screening programmes that can achieve and maintain good-quality and at the same time be affordable and sustainable in Latin America.

Thus, Quality Assurance in the study is essential and in this project “Quality Assurance in the ESTAMPA study: presenting update of study results and of QA measures in place”, we will concentrate on evaluating if the QA measures proposed served the purpose of achieving and maintaining good-quality of each step in the screening process across participating centres.

Donor:	World Health Organization - Headquarters (CH)
Duration:	6 months
Funds for IARC:	€129 950.00
Funds for partners:	-
Total:	€129 950.00
Partners:	n/a

Screening Group (SCR)

1.5 Project title: **Correlation of abnormal morphologic features of the cervix with underlying histopathology – Supplement grant**

This Administrative Supplement application is for requesting support for the parent-grant-supported clinical trial site in Lusaka, Zambia to create a set of cervical images from women with histologically confirmed high-grade neoplasia (Cervical Intraepithelial Neoplasia 3 – CIN3) and <CIN3 lesions. The focus of this supplement will be to collect and correlate digital images of cervical lesions with pathology results, in order to determine to what extent the morphologic (physical) features of abnormal cervical lesions, or combination of features, can predict underlying

histopathology, and the impact of HPV and HIV infection on the relationship between surface morphology and pathology. The present proposal is not a clinical trial as no participant will be recruited prospectively for any study related intervention. The de-identified images and information collected from the women undergoing LEEP procedures in the Zambian Ministry of Health operated LEEP clinics will be used. Methods: Women who have been screened for cervical cancer per standard protocol in Zambia using VIA augmented with digital photography, and are deemed to need excisional treatment with LEEP, will be tested for HIV and HPV infection and have LEEP performed by qualified healthcare providers in line with standard protocols, at appropriate facilities. The clinical information, the images of cervix collected by nurses prior to LEEP, HIV and HPV test results and the histopathology results will be collected from appropriate facilities. All patient-level data will be de-identified prior to analysis. Informed consent will be obtained from all women.

Donor:	National Institutes of Health - National Cancer Institute (US)
Duration:	12 months
Funds for IARC:	-
Funds for partners:	€193 208.30 (US$213 726.00)
Total:	€193 208.30 (US$213 726.00)
Partners:	University of North Carolina at Chapel Hill, USA; UNC Global Projects LLL, Zambia

1.6 Project title: **Extended Follow-up of the Participants of IARC-INDIA HPV Vaccination Study to Evaluate the Effectiveness of one, two and three Doses of Quadrivalent HPV Vaccine in Preventing Cervical Neoplasia**

Supplementary study 1: Evaluation of 10-year long term immune response to single dose of quadrivalent HPV vaccine

The primary of objectives of the supplementary study to the IARC-India single dose of HPV vaccine evaluation study are to determine: a) whether recipients of a single dose of quadrivalent HPV vaccine have sustained immune response against targeted HPV types at 10 years post vaccination; and b) whether this response is superior to the immune response seen after natural infection in unvaccinated women.

Supplementary study 2: Assessing month 18 immune responses as correlates and signatures of risk of subsequent type-specific HPV endpoints

The primary objective of the supplementary study is to assess population-level associations for Month 18 immune response markers in different vaccine dose groups as correlates of subsequent type-specific incident HPV endpoints.

The study population will consist of the participants that fulfill the following criteria: received any number of doses of the HPV vaccine in the IARC-India study; have a Month 18 post-vaccination blood sample already obtained and stored; and have given at least one cervical cell sample for analysis of incident HPV infection.

Supplementary study 3: Using mathematical modeling and health economics to support the design of a sustainable vaccination programme

The aim of the project is to address key HPV vaccination policy questions in India, by developing an open-source HPV agent-based model for India, informing the model with local epidemiological and costing data, and combining impact projections with costs and budget impact estimates. The findings of the project will be instrumental to design a sustainable HPV vaccination programme in India.

Donor:	Bill & Melinda Gates Foundation (US)
Duration:	67 months
Funds for IARC:	€1 338 857.36 (US$ 1 464 833.00)
Funds for partners:	€681 508.56 (US$ 745 633.00)
Total:	€2 0202 366 (US$ 2 210 466.00)
Partners:	German Cancer Research Center Heidelberg (DKFZ), Germany; Rajiv Gandhi Centre for Biotechnology (RGCB), India; RTI International, India; VU UMC Amsterdam, Netherlands

Section of Evidence Synthesis and Classification (ESC)

IARC Handbooks Group (IHB)

1.7 Project title: **IARC Handbook on cervical cancer elimination**

The mission of IARC is the global control of cancer, with emphasis on primary and secondary prevention, which are the most effective responses to the rising burden of the disease.

The IARC Handbook on cervical cancer screening is a crucial support to the work of the Agency in evaluating effective measures of prevention, particularly in low- and middle-income countries (LMICs). The IARC Handbook on cervical cancer screening is developed in close collaboration with the WHO Cervical Cancer Elimination Initiative, for which the Agency's work is instrumental in building the scientific evidence for developing recommendations that will help achieve the targets set by WHO.

Donor:	Medical Research Council (GB)
Duration:	16 months
Funds for IARC:	€224 137.93 (GBP 200 000)
Funds for partners:	-
Total:	€224 137.93 (GBP 200 000)
Partners:	n/a

Section of Genetics (GEN)

Genetic Cancer Susceptibility Group (GCS)

1.8 Project title: **Comprehensive molecular characterization of lung supra-carcinoids**

Typical carcinoids (TCs; grade 1) and atypical carcinoids (ACs; grade 2) are well-differentiated lung neuroendocrine tumours, for which the pathogenesis is understudied and the etiology remains unknown. The majority of studies on pulmonary carcinoids (PCa) have either focused on targeted sequencing of a limited panel of genes or on genomic analyses in small series of samples. Multi-omics studies on PCa are almost inexistent, altogether resulting in a limited understanding of these diseases. This is partially explained by the rarity of these diseases and the consequent lack of large biorepositories with high quality samples required for large and comprehensive genomic studies. To date, we have led the most extensive multi-omics studies focused on these diseases, which led us to unveiling a new entity that we have called supra-carcinoids, and which warrants further investigation.

Our overall aim is to uncover the molecular mechanisms responsible for supra-carcinoids through comprehensive characterization of this aggressive group of lung carcinoids. To achieve this, we will pursue the following specific aims: 1) identify an independent series of supracarcinoids (WP1); 2) perform multi-omic analyses on this series (WP2); and 3) model the development and progression of supra-carcinoids using organoids (WP3).

Donor:	Neuroendocrine Tumor Research Foundation (US)
Duration:	24 months
Funds for IARC:	€272 100.00 (US$300 000.00)
Funds for partners:	-
Total:	€272 100.00 (US$300 000.00)
Partners:	Centre Léon Berard (CLB), France; Hospice Civil de Lyon (HCL), France; Hubrecht Institute, Netherlands.

Genetic Epidemiology Group (GEP)

1.9 Project title: **Protein Biomarkers of Lung Cancer Risk**

Lung cancer is the most common cause of cancer death in France and around the world, but survival rates are strongly dependent on the clinical stage at diagnosis. Early detection through low-dose computed tomography (CT) scans has been shown to reduce lung cancer mortality by at least 20%, but with important costs, including a high false-detection rate and relatively poor cost effectiveness. There are important differences in the benefit of screening in different participant groups as defined by their underlying risk of lung cancer, thus highlighting the urgent need to develop improved risk prediction tools for identifying eligible subjects to screen. However, current risk models only provide nominal improvements in risk discrimination over the currently used screening criteria.

The overarching objectives of this project are i) to perform a proteomics scan using Olink proteomics technology on pre-diagnostic samples from the EPIC cohort to identify novel Promising

biomarkers of lung cancer risk; ii) to replicate and validate the risk association for all Promising risk biomarkers within the Lung Cancer Cohort consortium (LC3), define a limited panel of replicated risk biomarkers for risk modelling and evaluate the extent to which such a risk prediction model improves models based on questionnaire data; and iii) to evaluate if validated protein-biomarkers are useful in working up individuals with positive or indeterminate nodules on CT using samples from an ongoing CT-screening study.

This project offers unique translational opportunities to refine screening eligibility criteria and diagnostic work-up, thereby improving screening efficiency, and ultimately reduce lung cancer mortality and the harms of screening.

Donor:	Institut National du Cancer (FR)
Duration:	48 months
Funds for IARC:	€457 036.00
Funds for partners:	€75 192.00
Total:	€532 228.00
Partners:	Institut Gustave Roussy, France

1.10 Project title: **Assessing the role of obesity and insulin across multiple cancers using a Mendelian randomization approach**

Approximately 40% of the cancer burden in high income countries can be explained by known lifestyle, environmental and clinical risk factors. However, major differences in cancer incidence throughout the world, as well as rapid changes over time, indicate that many novel cancer risk factors remain to be discovered. Mendelian randomization has recently emerged as a powerful tool to identify potential causative factors for many cancers and offers a complimentary approach to traditional epidemiological methods. Several developments have occurred over the last 10 years that will allow for powerful and comprehensive Mendelian randomization studies for cancer. These include the availability of very large genome-wide datasets for individual cancers, numbering even more than 100 000 case-control pairs for breast cancer. A second important development is an increased understanding of the genetics behind many potential risk factors, including lifestyle risk factors, vitamin levels, proteins and metabolites. Finally, methodological developments have been important in identifying potential weaknesses in Mendelian randomization methods and proposing sensitivity analysis to identify the extent to which underlying assumptions are likely to hold true. We will perform a consistent and reproducible Mendelian randomization analysis in order to elucidate the role of obesity, metabolic and clinical risk factors for seven common cancers. These will include kidney, pancreas, lung cancer, head and neck cancer and lymphomas, as well as breast and prostate cancer.

Donor:	World Cancer Research Fund International (GB)
Duration:	36 months
Funds for IARC:	€142 374.60
Funds for partners:	€174 013.40
Total:	€316 388.00
Partners:	Umeå University, Sweden; McGill University, Canada

Section of Infections (INF)

Infections and Cancer Epidemiology Group (ICE)

1.11 Project title: **Uganda HPV prevalence and vaccine impact study**

This study supports a baseline HPV survey, to describe pre-vaccine HPV prevalence, in an established General Population Cohort (GPC) in rural south-western Uganda, administered by the London School of Hygiene and Tropical Medicine (LSHTM) UK in collaboration with the Uganda Virus Research Institute (UVRI). The cohort comprises a cluster of 25 neighbouring villages with approximately 20 000 residents. Data are collected by annual census and bi-annual health survey. In the 2019–2020 survey round an additional effort will be made to collect urine samples from ~2000 unvaccinated women aged 16–21 years. Participants will be asked to self-collect a urine sample using a device, that will be analysed at the Centre for the Evaluation of Vaccination, University of Antwerp, Belgium. Two different testing methods of different analytical sensitivity will be used for HPV testing, in Amsterdam, and at IARC. In addition, a survey of all 11–14 year old girls living in the same community (estimated number = 1150), will be undertaken, asking their HPV vaccination status, including questions about number of vaccine doses received and when/at what age. This survey will provide information on the current HPV vaccination coverage in this cohort, and an estimation of vaccination coverage if and when funding is found to perform a repeat urine survey in this community in about five years' time in order to show HPV vaccine impact.

Donor:	Bill & Melinda Gates Foundation (US)
Duration:	36 months
Funds for IARC:	€257 089.92 (US$ 281 280.00)
Funds for partners:	€207 222.08 (US$ 226 720.00)
Total:	€464 312.00 (US$ 508 000.00)
Partners:	Antwerp University, Belgium; Stichting VUMC, Netherlands; MRC Uganda Virus Research Institute, Uganda.

Section of Nutrition and Metabolism (NME)

Biomarkers Group (BMA)

1.12 Project title: **Mechanisms underlying the effect of body fatness on risk of postmenopausal breast cancer: a nested case-control with causal mediation analysis**

The World Cancer Research Fund concluded that there is convincing evidence that "body fatness" in adult life increases the risk of postmenopausal breast cancer. The WCRF dose response meta-analysis for body mass index (BMI) gave a relative risk (RR) of 1.12 (95% confidence interval (CI) 1.09 to 1.15) per 5 kg/m2, although the association was restricted to hormone receptor positive tumours WCRF CUP 2017. The mechanisms by which adiposity causes postmenopausal breast cancer are uncertain, but are most likely due to metabolic disturbances caused by increased mass of adipose tissue. Adipose tissue of obese individuals secretes increased amounts of leptin (a pro-inflammatory adipocytokine), pro-inflammatory cytokines and free fatty acids, secretes less

adiponectin, and causes disturbances in the production of sex steroid hormones and in cellular sensitivity to the effects of insulin. In turn, these factors can affect cell proliferation, apoptosis and angiogenesis, which are hallmarks of cancer.

Our proposed research aims to assess the roles of the three putative mechanistic pathways (Figure 1) in explaining the association between adiposity and risk of postmenopausal, ER-positive breast cancer.

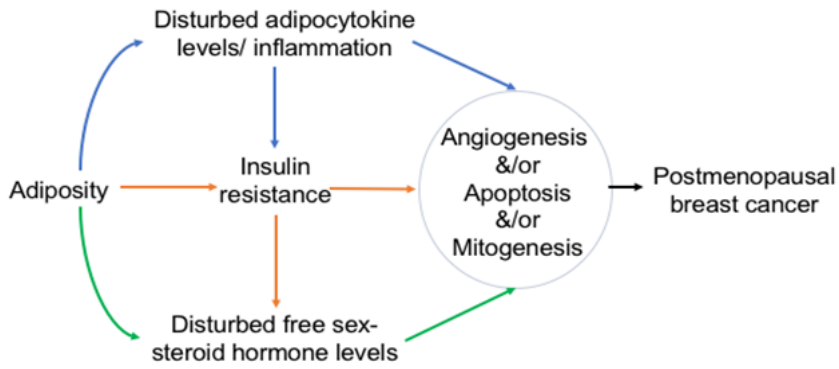

Figure 1: potential mechanisms linking adiposity to postmenopausal breast cancer.

To achieve our objectives, we will conduct a case-control study nested within the Melbourne Collaborative Cohort Study (MCCS).

Based on the research briefly reviewed above, we hypothesize that for postmenopausal women:

1. Adiposity, as measured by BMI and waist circumference, is associated with increased risk of ER-positive breast cancer;

2. Biomarkers of each of the three pathways shown in Figure 1 are associated with risk of ER-positive breast cancer, and we predict that free estradiol will have the strongest association;

3. The effect of adiposity on the risk of ER-positive breast cancer is largely mediated through the three pathways shown in Figure 1.

Donor:	World Cancer Research Fund International (GB) – through Cancer Council Victoria
Duration:	48 months
Funds for IARC:	€264 118.38 (GBP 236 506.00)
Funds for partners:	€124 710.96 (GBP 111 673.00)
Total:	€388 829.34 (GBP 348 179.00)
Partners:	Cancer Council Victoria, Australia; University of Melbourne, Australia.

1.13 Project title: **The food metabolome as a novel concept to assess dietary exposures in Children**

Development of obesity and risk of chronic diseases is largely influenced by the diet. However, the association is hard to grasp, as dietary assessment methods based on questionnaires are prone to measurement error, particularly in children. Much progress has been made recently in the development of metabolomics and the measurement of the food metabolome in human biological samples which led to the identification of new dietary biomarkers as more objective indicators of diet. But to date few dietary biomarkers have been validated in population studies, particularly in children, where they would be most useful. Therefore, the present project aims to comprehensively measure the food metabolome in urine samples from two children cohorts, in order to 1) identify food metabolites related to short-term food intake, 2) investigate variability of the level of these metabolites, 3) identify biomarkers best predicting habitual food intake, and 4) evaluate longitudinal associations between food metabolites and health outcomes. The present study is based on the established IDEFICS/I.Family and DONALD cohorts with unique longitudinal data including repeated examinations and repeated biosample collections. In the IDEFICS/I.Family cohort children aged 2–9.9 years at baseline were deeply phenotyped at three study examinations over a seven-year follow-up period. In the DONALD birth cohort children were annually examined from age 3 months to adulthood. Urine samples repeatedly collected from these cohorts will be analysed by high resolution mass spectrometry. Out of several thousand signals detected in 1800 spot urine samples in the IDEFICS/I.Family study and 600 24h-urine samples in the DONALD study, metabolites that are linked to short-term food intake will be identified through analysis of associations with dietary intake data obtained from 24h-dietary recall (24h-DR) (IDEFICS/I.Family) and 3d-weighed dietary records (3d-DR) (DONALD) collected on the days of urine collections. We will focus on the most frequently consumed fruit and vegetables, sweet and fatty snacks and sugar-sweetened beverages that have been linked to obesity risk. Temporal variation of food metabolites over 1–4 years will be evaluated from up to three repeated urine sample collections. A comparison of 24h-urine versus spot urine samples and use of 24h-DR versus 3d-DR to identify relevant metabolites will be conducted. Next, food metabolites to estimate habitual food intake based on the combined information of different traditional instruments will be studied. In the last step, the prospective association between food metabolites and anthropometric and clinical risk markers will be investigated, and the performance of dietary biomarkers compared with that of traditional approaches based on questionnaires. As two independent cohorts are studied simultaneously results are directly replicated. The exploitation of the food metabolome as proposed here should constitute a major breakthrough to further identify novel and valid dietary biomarkers.

Donor:	Agence Nationale de la Recherche (FR)
Duration:	36 months
Funds for IARC:	€286 215.98
Funds for partners:	€367 488.00
Total:	€653 703.98
Partners:	Leibniz Institute for Prevention Research and Epidemiology - BIPS, Germany; University of Bonn, Germany.

1.14 Project title: **EXposome Powered tools for healthy living in urbAN SEttings**

By 2030 more than 80% of Europe's population will live and interact with a complex urban environment, consisting of a mixture of social and environmental factors. These factors include: where we live and work, where and what we eat, our social network, and what chemical substances we are exposed to. Individually or collectively these factors, known as the Urban Exposome, have an often modifiable impact on our health and provide important targets to improve population health. By studying the impact of the Urban Exposome on the major contributors to Europe's burden of diseases, with a particular focus on cardio-metabolic and pulmonary diseases, EXPANSE will address one of the most pertinent questions for urban planners, policy makers, and European citizens: "How to maximize one's health in a modern urban environment?" EXPANSE will take the next step in Exposome research by: 1) bringing together the exposome and health data of more than 55 million Europeans in administrative cohorts, in-depth exposome, phenotype, and OMICs information for more than 2 million Europeans, and personalized exposome assessment for 5000 individuals living in five "Urban Labs"; 2) applying a novel approach to use ultra-high-resolution mass-spectrometry to agnostically screen for exogenous chemicals in 10 000 blood samples; 3) studying the evolution of the Exposome and health through the life-course via both (matured) birth and adult cohorts; and 4) evaluating the impact of changes in the Urban Exposome on the burden of Cardio-Metabolic and Pulmonary Disease. EXPANSE will translate its insights and innovations into research and dissemination tools that will be openly accessible via the EXPANSE toolbox. By applying innovative ethics-by-design throughout the project, the social and ethical acceptability of these tools will be safeguarded. Tool discoverability and accessibility will be stimulated through the EXPANSE hub in which citizens, public sector policy makers, and private sector companies collectively participate. IARC brings its expertise on the Exposome, and plays a major role in the project in collecting mass spectrometry data, in their interpretation and curation in the Exposome-Explorer database.

Donor:	European Commission - Research and Innovation (BE)
Duration:	60 months
Funds for IARC:	€1 266 093.43
Funds for partners:	€10 727 813.56
Total:	€11 993 906.99
Partners:	University of Utrecht, Netherlands; UMC Utrecht, Netherlands; Helmholtz Association, Germany; University of Tartu, Estonia; NIOM, Poland; ISGlobal, Spain; Imperial College of Science Technology and Medicine London, United Kingdom; TPH, Switzerland; University of Athens, Greece; University of Masaryk, Czech Republic; INSERM, France; Vanderbilt University Medical Center, Netherlands; Karolinska Institutet, Sweden; Columbia University, USA; Icahn School of Medicine at Mount Sinai, USA; Capionis, France; Azienda Sanitaria Locale Roma 1, Italy; Game Solutions Lab BV, Netherlands; M2M4ALL, Netherlands.

Multiple Sections

1.15 Project title: **MRC funding for a portfolio of IARC projects**

Project 1: Oesophageal squamous cell carcinoma (ESCC) is among the most common cancers and causes of cancer death in both sexes in East Africa, yet etiological research is in its infancy and thus primary prevention measures are few. We propose a project that aims to i) advance research on ESCC in East Africa, with the view to improve the future wellbeing of the populations of Kenya, Tanzania and Malawi, through cancer prevention and early detection; ii) invest in capacity building for NCDs and cancer research of African graduate/post-doctoral scientists. The ESCC research will be conducted based on the already-completed ESCC Africa PrEvention research (ESCCAPE) activities, to generate a comprehensive assessment of oesophageal cancer risk factors and a risk score for the disease. For the capacity building component, graduate/postdoctoral African scientists will be hosted at IARC for four person-years (e.g. two people for two years each) to gain experience in all aspects on cancer epidemiological study conduct and analyses through working on African cancer studies and attendance of relevant training courses in statistical methods in epidemiology. (Total budget: GBP 332 220; implemented by ENV Section).

Project 2: Cancer screening programmes are complex and resource-intensive but can have huge benefits when implemented in the right manner with appropriate quality. Moreover, technologies and approaches proven to be effective in high-resource settings may not be feasible and/or affordable in LMICs, and alternative solutions may be needed to tackle the cancer burden in such settings.

Specific objectives are to: collect and disseminate information on cancer screening practices and programmes in selected East African countries; harmonize data collection and data analysis for the comparative evaluation of screening programmes of the target countries; assist countries in organizing their health information system to collect standardized data for continuous quality improvement of cancer screening programmes; provide capacity-building of service providers and programme managers in collection of high-quality data for programme evaluation and quality improvement; conduct in depth situational analysis to identify the Strengths, Weaknesses, Opportunities and Threats (SWOT) related to the implementation and scaling up of the existing programmes; share the information with policy-makers, programme administrators, researchers, and other stakeholders, with the objective of improving planning, evaluation, and quality assurance of cancer screening programmes in the African nations. (Total budget: GBP 314 140; implemented by EDP Section).

Project 3: Making use of established structures within The Global Initiative for Cancer Registry Development (GICR), IARC will coordinate actions with partners to ensure selected SSA cancer registries are strengthened with respect to the availability, quality and use of their data to inform cancer control planning. Over the duration of the project, three key deliverables are envisioned: i) Consultancies. Following a site visit, report on current status is back up with specific steps to be taken to improve cancer data in the country. The report would be developed closely with the Ministry of Health and those working in cancer; ii) Training. Participants will be invited from selected SSA countries for a three-day course. Topics will be determined based on input from peers in the region and those targeted to attend the training. GICRNet trainers in SSA, a

programme that involves local experts in the development and delivery of educational material, will be included as faculty in the course; iii) Structured Mentoring. To complement in person training, short exchanges between a registry that needs support and one that is well-established will be arranged. Mentors will be primarily selected from the GICRNet so that linkages with standardized material can be used; iv) CanReg5 Redevelopment. The software will be repurposed for better stability, speed and functionality, including off-the-shelf analytic and data quality modules and development of a mobile version of CanReg5 that permits real time data collection. (Total budget: GBP 353 640; implemented by CSU Section).

Donor:	Medical Research Council (GB)
Duration:	24 months
Funds for IARC:	€1 174 193.55 (GBP 1 000 000)
Funds for partners:	-
Total:	€1 174 193.55 (GBP 1 000 000)
Partners:	n/a

2. Prior approval for projects in collaboration with the private sector

Please note that the following projects have been provisionally approved by the Chairperson of the Governing Council.

Section of Environment and Radiation (ENV)

2.1 Project title: **Coordination of the International Birth Cohort Harmonisation Group**

The International Birth Cohort Harmonisation Group has been established to strengthen the collaboration and coordinate the activities of the birth cohorts from Japan, China, France, Denmark and Norway, among others. This is essential to achieve the scientifically most reliable results from those studies. Even large cohorts are hardly big enough to investigate effects on health outcomes in children, as most of them are not common, although very severe, such as sudden infant death or childhood cancer. This is why pooling of data is necessary to increase the statistical power of studies to detect any associations between environmental exposures and health outcomes. An important prerequisite of pooling is the comparability of data, which applies both to how the exposure information is collected and operationalized, and how the outcomes are assessed. This requires procedures for harmonization of data. Successful harmonization requires the moderation of a neutral coordinator ensuring that the most scientifically rigorous approach is taken and that every country has an equal opportunity to participate in this process.

IARC has taken up this role in summer 2015 and the fourth year agreement proposes to continue the scientific secretariat and coordination work as well as the coordination and conduct of joint statistical analyses of lead exposure across studies.

A tripartite collaboration between the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany, the Ministry of the Environment, Japan and IARC has been set up for this. For the fifth year of implementation, the Japanese Ministry has mandated the

Center for Environmental Information Science (CEIS) to handle the contracting with IARC on their behalf. This service provider was chosen by the Ministry through an open bidding process.

Since its foundation in 1977, CEIS has been dedicated to promoting collaboration and communication on environmental issues, and to contributing to the creation of human society in harmony with global environment (https://www.ceis.or.jp/)

Donor:	Ministry of the Environment, Japan (through CEIS) Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany
Duration:	12 months
Funds for IARC:	€ 60 060 - (€30 030 from Germany and € 30 030 from Japan)
Funds for partners:	-
Total:	€ 60 060 - (€30 030 from Germany and € 30 030 from Japan)
Partners:	n/a

Director's Office (DIR)

2.2 Project title: **Burpeesforcancer campaign – voluntary undesignated contribution**

In November 2019, a Swedish company named Interspiro, organized a fundraising campaign (Burpeesforcancer campaign) which raised €15 000, to be given to IARC.

The WHO Office for Partnership and Non-State Actors (PNA) confirmed that **Interspiro** is a private sector entity and therefore the WHO Policy and Operational procedures for the private sector apply. Interspiro is a company registered in Sweden, where the production and main offices are located, with sales offices in several other countries. The company manufactures and markets respiratory equipment for firefighting, hazardous environments and diving. No apparent connections with arms and tobacco have been uncovered and major reputational issues have not been identified based on currently available information. Interspiro signed the tobacco and arms disclosure in October 2019.

Donor:	Interspiro
Duration:	n/a
Funds for IARC:	€15 000
Funds for partners:	-
Total:	€15 000
Partners:	n/a

3. Prior approval for projects over €500 000 per annum

The Governing Council is invited to consider, for approval, projects submitted over €500 000 per annum, excluding sums passed on to collaborating institutions, and projects that require more than €100 000 per annum, excluding the principal investigator's staff costs, from the IARC regular budget.

There are no projects to be considered for prior approval this year.

4. For information reporting

The Governing Council is invited to note that contracts for a total of over €100 000 per annum have been accepted by the Director for the initiative below. However, the funds are from various donors and each donor contributes less than €100 000 per annum therefore no formal post facto reporting is required.

Section of Environment and Radiation (ENV)

4.1 Project title: **Cancer Prevention Europe**

Demographic changes and evolving patterns of risk factors will result in major increases in the cancer burden across Europe in the next two decades, presenting a threat to sustainability of health care systems. No country can treat its way out of the cancer problem. The only realistic way to control the epidemic is by complementary efforts on treatment and prevention, within an integrated plan for cancer control. Cancer prevention must be an essential component in the response by national governments given the high and increasing costs of cancer therapies and the wider economic and societal impacts of the disease. There are many examples of the effectiveness of primary prevention, not least in parts of Europe through reductions in smoking prevalence, lowering of environmental and workplace exposures through legislation, and in the reduced cervical cancer incidence and mortality following introduction of cancer screening in organized national programmes. Research provides the evidence-base for these types of preventive interventions, encompassing studies of the burden of cancer, the causes, the evaluation of interventions and their implementation. While Cancer Core Europe (CCE) has been created as a network for the coordination of best clinical approaches, based on the long-term experience of comprehensive cancer centres in Europe, no such network for cancer prevention exists. Progress in cancer prevention would benefit by bringing together skills and partners across Europe within an integrated plan which avoids duplication and inefficiencies. We propose the creation of an alliance of European organizations focused on prevention, tentatively entitled Cancer Prevention Europe (CPE), to foster coordination, research and training devoted to prevention. We foresee a first phase of two years in which the focus will be on defining the scope, building partnerships and promoting the initiative among potential stakeholders and funders in Europe, including the relationships with CCE. This twin-track initiative (CPE and CCE) will build on the recognition that cancer biology is providing a “common soil” which can benefit both clinical and population approaches to cancer control. This has been previously referred to as “two-way translational cancer research” to emphasize the added value of drawing advances in cancer biology into both clinic and population settings. Among the initiatives, we propose the creation of a European Knowledge Hub for Cancer Prevention that will promote i) a more rapid spread of information on best practices and successful, high quality prevention efforts, ii) the expansion of systematic evaluations of evidence on the effectiveness of prevention strategies along the lines of the *IARC Handbooks on Cancer Prevention* and iii) promising areas of underfunded research. These strands will support translation of knowledge into action within national cancer control plans and more widely as part of policy and legislation to improve health. Prevention can bring rich dividends but interventions must be promoted and implemented. CPE would provide access to data on cancer burden, risk factors and evidence-based preventive interventions. In addition, recognized leadership in cancer prevention would serve as a resource both for collating but also

interpreting the scientific evidence-base for prevention and making this available to European policymakers at national and international level.

Donor: Several partners contributing through membership fees
Duration: 12 months
Funds for IARC: €166 000.00
Funds for partners: -
Total: €166 000.00

Partners: Danish Cancer Society, Denmark; Karolinska Institutet, Sweden; Cancer Research UK (CRUK), United Kingdom; Imperial College of Science, Technology and Medicine London, United Kingdom; European Institute of Oncology, Italy; German Cancer Research Center, Germany; World Cancer Research Fund International (WCRF), United Kingdom; Institut National du Cancer (INCa), France; CLARA, France; Maastricht University, Netherlands; Europa Donna, France; European Cancer Leagues, Belgium; Institut Curie, France; Irish Cancer Prevention Network, Ireland.

5. Interest income from grants

In accordance with the standing authorization provided to the Director under resolution GC/55/R23 and the conditions set forth in the signed agreements, interest income totalling €4886 was apportioned to two grants in 2019. Details are provided in the table below:

Grant No.	Project	Donor	Interest (in euros)
100639	Extended Follow-up of the Participants of IARC-INDIA HPV Vaccination Study to Evaluate the Effectiveness of one, two and three Doses of Quadrivalent HPV Vaccine in Preventing Cervical Neoplasia	Bill and Melinda Gates Foundation	4506
100401	Monitoring HPV vaccination and HPV screening programs to promote sustained implementation in low and middle income countries	Bill and Melinda Gates Foundation	380
Total interest income apportioned to grants			4886