The SONA Newsletter
The Society of Neuroscientists of Africa

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WHY TWO IBRO-AFRICAN CENTERS FOR ADVANCED TRAINING IN NEUROSCIENCE?

Sten GRILLNER, IBRO Secretary General
Nobel Institute of Neurophsiology, Stockholm, Sweden

For over a decade IBRO has through its African Regional Committee (ARC) organized and funded workshops and schools aimed at research training and also teaching. These activities and the formation of SONA have contributed to a growing community of African neuroscientists. IBRO puts a substantial part of its budget into ARC activities. It is necessary of course to see that this support is used in as a creative and effective way as possible to promote research training in both basic and clinical neuroscience, including neurology and psychiatry. Like any endeavor we believe that things can be further improved by taking into account experience from other regions. As research facilities vary widely over Africa, there is a need to foster a nucleus of well-trained neuroscientists, who in turn will train a new generation of great scientists.

As a next step to make the training programme more effective, and in addition to the current type of courses, we have decided to develop two permanent training sites, one in Southern Africa, Cape Town and the other in Northern Africa, Rabat, inspired by the courses in Cold Spring Harbor and other examples in Europe and Asia. A major advantage being that all infrastructure regarding practicalities in organizing courses (lecture halls, lab facilities, housing, catering, coordination) will be available. On each site, there will be different courses given, each coordinated by a separate course-director with invited speakers, and possibilities for hands on teaching of different techniques and approaches. ARC in interaction with the local representatives will decide who should be invited to be course directors. The course directors can be from any part of Africa or from other parts of the world.

IBRO-central in interaction with ARC (chair Pierre Luabeya) and African neuroscientists like Musa Babandla, Vivienne Russell, Nouria Lakhdar-Ghazal, Abdul Mohammed and also Abdel El Manira, who have been engaged in planning for the training sites in Cape Town and Rabat respectively. We very much hope that this will constitute a major step forward, in which graduate students and post-docs will have the possibility to be trained with important techniques and learn about new concepts - in the new IBRO-African Centers for Advanced training in Neuroscience. In addition, some courses will be continued in the old format, like that for teaching tools.

On another important matter, I would like to complement Pierre Luabeya and ARC for organizing an excellent workshop in Kinshasa on Global advocacy (September 2014), and the need for neuroscientists to engage in providing evidence for the importance of Brain Research, and make legislators and funding organizations realize that diseases of the brain are often chronic and very costly for society (in Europe 35% of the total costs for health care), not to mention the suffering of patients and their relatives. If the neuroscientists themselves do not argue for brain research, who would be expected to do so? It is therefore important for each national neuroscience society to provide the evidence for the needs of brain research. The plans are that there will be some seed money available for the societies to apply for later in the year.
Dear SONA Members, Colleagues and Friends,

In anticipation of the SONA International Conference, the Secretary General of The Society of Neuroscientists of Africa (SONA SG) is pleased to invite Local, National or Regional African Neuroscience Societies, Groups or Universities/Research Units to submit an application to become the host of the next SONA International Conference in 2017.

Since recent SONA Conferences were held in North Africa (Sharm Sheikh, Egypt, 2009), East Africa (Addis Ababa, Ethiopia, 2011), North Africa (Rabat, Morocco, 2013) and Southern Africa (Durban, South Africa, 2015), requests coming from West and Central Africa are strongly encouraged. The call for applications is open for all countries, and selection will be made based on the priority of regions and/or quality of the proposal. Applications will be reviewed by a committee and submitted for discussion and voting during the General Assembly of SONA on 26 March 2015, in Durban. Countries with armed conflicts, safety or health risks are asked to refrain.

Since the SONA policy regarding international conferences has changed, the organization of the SONA conferences is no longer the responsibility of one person or a group of people, but the duty of the structures of SONA as defined in the new constitution. The results of this new working method are clear to reach international excellence. It is necessary and important to maintain this standard by involving the various committees, especially the scientific committee of the conference for assessment of applications. For this, we will set up a scientific committee for our society from which the organizers can benefit for evaluation of different activities. Based on international standards, the members of the scientific committee selected for particular activities will not be revealed.

The proposal must specify the following information knowing that the conference will be organized in close coordination with the SONA SG.

1. What are the neuroscience activities that have been developed and organized in your country: workshops, schools, conference? What are the neuroscience capacities in your country in term of research structures, PhD students, seniors, researchers. This will ensure a good local attendance.

2. What are the satellite activities you may organize before or after the conference?

3. What plans do you have to finance the conference? How will you raise funds from international, national and local resources, knowing that IBRO will fund only fifth of the conference needs. A comprehensive budget detailing the financial needs and costs should be provided. Continued on page 4

TEN REQUIREMENTS TO HOST THE SONA MEETING

Nouria LAKHDAR GHAZAL, SONA SG, Mohamed V University, Rabat Agdal, Morocco

NEUROSCIENCE: A LUXURY OR A NEED?

Marina BENTIVOGLIO, Past IBRO SG, University of Verona, Italy

In the last 15 years, due to the efforts of the African Regional Committee (ARC) of IBRO, of SONA, as well as of other scientific societies, international organizations and funding agencies, neuroscience timidly showed up on the variegated stage of the African continent. Due to historical conditions and solid cultural premises, neuroscience centers were already present in North Africa, especially in Morocco, and in South Africa. The real novelty is the effort of networking within sub-Saharan Africa: a huge territory, with numerous Universities (even if this is not the usual way common people look at sub-Saharan Africa) though with limited resources, full of young people thirsty of knowledge, capable of individual initiatives hampered by severe weaknesses in the organization of a collective society essential for research and training in science.

In 2002, when Rita Levi-Montalcini (1909-2012; Nobel laureate in 1986 for the discovery of Nerve Growth Factor) had launched her Foundation for the education of African women, I discussed with her the need of higher education and training in neuroscience in Africa. Despite her vision and firm belief that education, especially of women, was the key to development and freedom (“The future of the planet depends on the possibility to give to all women an access to education and leadership”), Rita was puzzled. She wondered “In a continent and in countries that suffer from problems such as starvation and illiteracy, why should the training of young researchers be considered a priority?” To answer this and other questions, as I already stated in an article commemorating Rita (Neuroscience 252, 438-442, 2013), I circulated a brief questionnaire among the Alumni of ARC-IBRO Schools (which had started in 2000). The answers were very stimulating (and Rita found them convincing): “When should one stop education? Which is the meaning of primary education if one cannot go ahead?” “What is more advantageous, to be an informed user of technologies, or an untrained consumer of technologies?” “Scientific thinking is a pre-requisite for the development of a modern society. Without science, there is no development... What comes first, resources or those who can exploit them? In the absence of trained people, resources are useless. And trained researchers are essential for the training of other young investigators.”

Science is a need, neuroscience, a leading field in biomedicine, is a need. Looking into local realities is a need. Training is a need, and training in neuroscience has now been ongoing in Africa since at least 15 years. This is certainly not a long period in a historical perspective, but is sufficient for one generation of neuroscientists. And now Africa badly needs to foster networking in order to stand on the international science scene. The explosion of information-communication technology is certainly making a difference. But the participation of African neuroscientists to the international scene is still limited. African indexed publications still make up only a minimal proportion of the international literature in neuroscience, and mostly in collaborative efforts with non-African institutions. SONA can and should play a key role in prioritizing efforts and foster networking within the continent. It is now time to pass into action and move on for a real change.
This school funded by IBRO and ISN was held at the International Centre for Insect Physiology and Ecology (ICIPE). This school was organized by Nilesh B. Patel (University of Nairobi, Kenya), Richard Brown (Dalhousie University, Canada). For the first time ever within the insect research institute, the neurobiology of insect behavior was included. This new aspect to this behavioral school involved partnership with Teaching and Research in Natural Sciences for Development of Africa (TRENDS: http://trendinafrica.org/). Two TRENDS instructors, Lucia Prieto Godino, University of Lausanne, Switzerland, and Tom Baden, Bernstein Centre for Computational Neuroscience, Germany, provided the genetically modified Drosophila as well as equipment built using 3D printer and open hardware and software. This was exciting for the students from many African countries including Morocco, Algeria, Nigeria, Cameroon, Zambia, South Africa, Zimbabwe and Kenya. They learnt some aspects of neurobiology and neurochemistry of the Drosophila. This knowledge could be useful for better understanding for methods of control of disease vectors such as mosquitoes or tse tse flies. This would also emphasize the importance and relevance of neuroscience teaching, training and research in African universities and local agencies.

Besides insects, the students also learnt about setting up rodent behavioral bioassays and the pitfalls involved. There were a number of hands-on practical sessions. The students were divided into groups to prepare a mini-proposal to study a question with the equipment provided. With data gathered from the practicals and its analysis, each group gave a presentation of their proposal.

Richard Brown as usual brought along a suitcase of neuroscience books for distribution to all students. For the outing, the students had lunch at the Carnivore Restaurant followed by a mini-safari in the Nairobi National Park. It is hoped that the students will be motivated to carry out studies on the unique African fauna especially the small mammals. Further information and lecture details can be found at IBRO African Neuroscience School website: http://www.uonbi.ac.ke/projects/ibro/index.php?option=com_content&view=article&id=70&Itemid=85

THE RETROSPECTIVE-PROSPECTIVE PAGE (RPP): what is it about?
The RPP will focus on two events having similar objectives and activities. The RETROSPECTIVE part will focus on an event held recently, its organization, achievement, program and faculty members. Major strengths and challenges that faced this event will be addressed. The PROSPECTIVE part will address events to be held in the future, its topic, objectives, confirmed faculty to be engaged, its venue and sponsorship. The aim the RPP is to ensure:
1. visibility for the past and future neuroscience events,
2. mutually benefit from the experience of past and future events.
3. Overall, create a dynamic in willing to improve the quality of organization of neuroscience events in Africa.

PROSPECTIVE NEUROSCIENCE SCHOOL, 13-17th May 2015
Khouribga IBRO-ARC Neuroscience School, Neurotoxicity and Brain Disorders
Aim: The school will focus on aspects of brain disorders due to neurotoxicants, and will include technical workshops. The school will also focus on professional skills through intense proactive discussions and individual presentations. Another important aim is to allow the students a deep insight on important questions related to neurosciences research challenges and opportunities. Overall, the programme below will cover 5 days with lectures, professional writing, and communication skills, technical workshops, as well as group discussions and social activities.
Theme and School Summary: High-level exposure to neurotoxicants, which cause alteration of brain structure and function, is an important health problem worldwide, including the African continent. The school will address neurotoxicity due to some agents including heavy metals such as lead, manganese, aluminum, as well as insecticides, cuprizone and other neurotoxicants in the diet, such as cyanogens, alcohol and ammonia particularly in early ages. Important pathological conditions such as neurodegeneration, neuroinflammation, axonopathy, myelopathy, and transmission toxicity, will be addressed. The school will emphasize the consequences of neurotoxicants at the molecular, cellular, functional, and behavioral levels.
Confirmed Instructors: Desiré Tshala-Katumbay (Congo/USA), Enrico Sanna (University of Cagliari, Sardinia, Italy), Giovanni Biggio (University of Cagliari, Sardinia, Italy), Marina Bentivoglio (University of Verona, Verona, Italy), Markus Kipp (RWTH Aachen University, Aachen, Germany), Mohamed Najimi (Université Sultan Moulay Slimane, Beni Mellal, Morocco), Mohamed Salama (Mansoura University, Mansoura, Egypt), Nouria Lakhdar-Ghazal (Université Mohamed V, Rabat, Morocco), Samir Ahboucha (Hassan First University, Khouribga, Morocco).
Sponsorship: provided by the International Brain Research Organization - African Regional Committee (IBRO-ARC), the Hassan First University and other agencies, whose help is very gratefully acknowledged.
http://ibro.info/events/applications-open-for-the-ibroarc-khouribga-school/
THE MAGIC OF THINKING BIG
Abdul Kadir H. MOHAMMED, Past ARC chair Linnaeus University, Växjö; and Karolinska Institutet, Stockholm, Sweden

On Monday morning on 28 January 2013, the European Commission officially announced at a press conference in Brussels that The Human Brain Project (HBP) is one of the Future and Emerging Technology Flagship (FET) that would receive up to a billion euros. The FET initiative aims to promote ambitious and science-driven research initiatives.

The European Commission welcomed the Human Brain Project as: “The world's largest experimental facility for developing the most detailed model of the brain, for studying how the human brain works and ultimately to develop personalised treatment of neurological and related diseases. This research lays the scientific and technical foundations for medical progress that has the potential to dramatically improve the quality of life for millions of Europeans” (http://cordis.europa.eu/fp7/ict/programme/fet/flaghip/home_en.html).

The HBP (https://www.humanbrainproject.eu/) - one of the biggest scientific projects in the history of neuroscience - is a ten-year project currently involving collaborations between 24 nations across Europe and beyond, and 112 universities and research institutions. It is one of what Sten Grillner has called “Megascience efforts and the brain” (Neuron 82, 1209-1211, 2014) - the other initiatives being (i) US BRAIN (Brain Research through Advancing Innovative Neurotechnologies), (ii) the Allen Brain Institute for Brain Science (which has embarked upon a 10-year project to understand the mouse visual cortex (the MindScope project)) and (iii) the Japan Brain/MINDS (Brain Mapping by Integrated Neurotechnologies for Disease Studies) which is focused on defining the circuitry of the non-human primate brain. Together these 4 megaprojects involve more than 1000 scientists. It is the declared aim of HBP to establish synergistic collaborations with these international initiatives to avoid duplication of effort and build momentum in the global effort to understand the brain and its diseases.

The HBP is focusing on data integration rather than data generating. Some 100,000 neuroscience articles are published each year covering different aspects, such as cellular, molecular, genetic, physiological and behavioural in different species and analysed in different brain regions. With such a tremendous amount of neuroscience data being generated by new techniques, part of the challenge of the HBP (through its neuroinformatics subproject) is to integrate this overwhelming data from different subdomains of neuroscience. HBP has several structured objectives including: developing interactive supercomputing, map brain diseases and implement a programme of transdisciplinary education to train young scientists to exploit the convergence between ICT and neuroscience. The G20 World Brain Mapping and Therapeutics initiative is “aimed at bringing the finest scientists, engineers, physicians and surgeons across the globe in order to rapidly introduce clinical solutions for neurological disorders”. The African Brain Mapping and Therapeutics Initiative was launched as part of the G20 Brain Mapping Initiative, which aimed at complementing President Obama’s BRAIN Initiative and the HBP. It is expected that this initiative will engage strategic groups in the entire Africa including the African Academy of Sciences. As John Ouma, Secretary General of South Africa Neurosurgical Society said, “initiatives like this could help bring the best science and technology to our patients and help us train the best scientists and physicians by engaging with pioneers in the field”.

These megaprojects call for the establishment of a strong culture of team science, collaboration and data sharing, and it is imperative that Africa aspires to be part of this endeavour.

THE SONA WEBSITE: www.sonafrika.info

In 2014 a new SONA website has been launched which includes all information about the SONA and other affiliated regional organizations. SONA urge its members to regularly visit this website and contribute by providing new ideas and information to improve and update its content.

TEN REQUIREMENTS TO HOST THE SONA MEETING

4. Propose a theme of the conference to attract a wide African participation.
5. Tentative dates and duration of the conference.
6. The venue: city and the place where the conference will be held, specifying the available infrastructure, access, transport, especially the safety and security systems that will or may be implemented.
7. Please consider ease of access to the venue city, airlines and local transport.
8. Attractions of the chosen city and opportunities to visit the country, etc.
9. Organizing committee if available but the principal organizer has to be defined knowing that she/he will be the next SONA president.
10. The approximate calendar.

Complete applications should be usually sent directly to SONA SG, Pr Nouria Lakhdar-Ghazal (nakhdarghazal@gmail.com), and Joint SONA SG Musa Mabandla (mabandlam@ukzn.ac.za). In order to allow members of the regional committee to apply, applications will not be sent in a regional evaluation basis. Thank you for your consideration and looking forward to hear from you.

Nouria Lakhdar Ghazal: SONA SECRETARY GENERAL

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It has been decade since the National Institutes of Health’s Fogarty International Center (FIC) in Bethesda USA has administered the Brain Disorders in the Developing World: Research across the Lifespan research programmes. The FIC and NIH have funded the programmes that to date have resulted in more than 435 peer-reviewed articles, plus 14 books or book chapters, and facilitated long-term training of at least 140 scientists in 44 low and middle income countries (LMICs). The research involves neurodevelopmental disorders, neurological conditions of adolescent years and old age, mental health and substance abuse disorders, infectious disease, environmental exposures, gene-environment interactions and brain trauma. The programmes also promote inter-regional collaborations and increase capacity building.

In order to be eligible to apply, each project must include a team of investigators, at least one in the US or another high-income country plus one or more collaborators in a LMIC. In addition to the likelihood accomplishing significant research, each project is expected to further the research capabilities of the partners in the LMIC. Importantly, almost all LMIC trainees received their mentoring in their home country. The total funding collectively from the FIC and other National Institutes of Health to date has been approximately $84 million. Expectedly, the research findings from many projects have had significant impact and helped countries develop health care policies, ranging from establishing the first surveillance system for retroviral and viral meningocencephalitis in Peru, to bringing fetal alcohol syndrome to the attention of Russian leadership and key health officials.

To celebrate the achievement a Symposium was held in February 2014, with almost 400 registrants, featured 65 oral presentations by grantees and over 100 scientific poster exhibitors. Following the Symposium, neurologists, neurosurgeons, epidemiologists and neuroscientists met for 2 days to begin the process of writing review papers targeted to look to future needs and opportunities for clinical and basic neuroscience research and, designed to address neurological and psychiatric disorders across the lifespan in LMICs. These are now on target to be published as a supplement to a journal, with Professors Donald Silberberg and Raj Kalaria serving as Co-Editors.

The Brain Disorders program has been coordinated since its inception by Dr. Kathleen Michels, Division of International Research and Training, Fogarty International Center. The Writing Project is being coordinated by Nalini P. Anand, Director, Division of International Science Policy, Planning and Evaluation and Director, Center for Global Health Studies, FIC. Future opportunities for obtaining funding for research through this NIH program can be seen at the Fogarty Center’s web site, www.fic.nih.gov.

The next deadline for grant applications to the Brain Disorders in Developing Countries will be January 5, 2016.

GLANCE AT THE SONA CONSTITUTION

SONA OBJECTIVES AND FUNCTIONS
Revised, Rabat, June 2013.

- Promote and foster the scientific activities of neuroscientists in Africa; and to stimulate and nurture the spirit of scientific research and technological innovation;
- Facilitate the role of neuroscientists in social and economic development and to promote the creation of an environment through which science and scientists can grow and thrive;
- Stimulate and facilitate interdisciplinary advanced training and neurosciences research, within the continent and beyond;
- Encourage an effective and rational utilization of the available manpower in neurosciences, and to endeavor to provide them with the necessary resources;
- Stimulate, design and coordinate regional interdisciplinary research in the neurosciences, and facilitate exchange of expertise among African countries and the international community at large;
- Identify and reward talented neuroscientists through recognition of their merit and by promoting the growth of their research activities;
- Plan, convene and coordinate neuroscience training and exchange of information through workshops, seminars and conferences; organize scientific meetings or conferences of the Society preferably every two years consistently during the same period of the year and venue selected by the General Assembly (see article 6);
- Foster growth of neurosciences by encouraging formation of national and/or regional societies of neurosciences;
- Facilitate, coordinate and undertake publication and dissemination of neuroscience material and various media in order to foster utilization of the knowledge throughout the continent;
- Promote the procurement and exchange of research bibliographic material relevant for use by neuroscientists;
- Help in the procurement and maintenance of equipment relevant to research in the neurosciences, and to facilitate maximum utilization of such equipment;
- Enter into collaborations with Member states of the African Union (AU) and in particular their national Academies of Sciences and/or Research Councils, inter-university organizations, inter-governmental and non-governmental organizations and research institutes in Africa in order to promote multidisciplinary scientific research relevant to neurosciences;
- Maintain relations and collaboration with UNESCO and its agencies and with other international, inter-governmental or non-governmental organizations as well as global or continental neuroscience and neurological societies such as the International Brain Research Organisation (IBRO), World Federation of Neurology (WFN), European Federation of Neurological Sciences (EFNS), Federation of European Neuroscience Societies (FENS), Society of Neuroscience (SfN), International Society for Neurochemistry (ISN) and Pan-African Association of Neurological Sciences (PAANS);
- Establish a Fellowship program to stimulate and facilitate Pan African and international interdisciplinary advanced training and research in the neurosciences;
- Maintain a directory of neuroscientists in Africa and their research activities;
IBRO-ARC FUNDED ACTIVITIES IN 2015

3. SONA Biennial Congress. Organizer: Musa Mabandla. Venue: Southern Sun Elangeni & Maharani Hotel, Durban, South Africa. Dates: 26-30th March 2015 Contact: mabandlam@ukzn.ac.za
9. EFNS Course 6th RTC. Organizers: AG Diop RN Kalaria and Erich Schmutzhard. Venue: University of Kahrtoum, Sudan. Dates: 14th October 2015. Contact: Raj.kalaria@ncl.ac.uk
10. 8th Teaching Tool Workshop. Organizer: Sharon Juliano. Venue and dates to be determined. Contact: Sharon.juliano@usuhs.edu

REGIONAL ACTIVITIES

- Clinical Neuroanatomy, Neuropathology and Neuroimaging Refreshers Course, Cape Town, Western Cape, South Africa, 13-15th February 2015, hypothalamus1@gmail.com
- Basic Central Nervous System (CNS) Pharmacology workshop, Protea Hotel Breakwater Lodge, V&A Waterfront, Cape Town, 21st February 2015, mgknott@gmail.com
- TRENDisAfrica short workshop on building your own equipment. 22-25th March 2015. Durban, South Africa.
- 5th Dementia SA Master Classes and Workshops. South Africa. 26th March 2015. Email Address: melanie@dementiasa.org. Website: http://dementiasaevents.org/
- Nigerian Society of Neurological Science (NSNA). 30th March - 1st April 2015. Nnamdi Azikiwe University Teaching Hospital Nnewi Anambare State, Nigeria. Contact: Jude-Kennedy C EMEJULU; nnsnationalsecretariat@gmail.com; judekenny2003@yahoo.com
- 5th TREND school on insect neuroscience and Drosophila neurogenetics. 17-30th August. Dar Es Salam, Tanzania
- TREND bioinformatics course. 17-30th August 2015. ICIPE, Nairobi, Kenya
- Mansura International Toxicology Conference (MTC). Global advances in toxicology: Africa in focus. 9-11th September 2015. Mansura, Egypt. Contact: Mohamed Salama; toxicalsalama@hotmail.com