FROM THE EDITOR,
Samir AHBBOUCHA
Hassan First University, Khouribga, Morocco

It is a pleasure to be part of this initiative. The SONA newsletter will expand the efforts made recently by the new SONA office. A big thank you to the colleagues that have entrusted in fulfilling this task hopefully up to their expectations. We aim to generate basic interests of our community including a tool for our members to find information and opportunities, a space to raise breaking issues, and to share ideas with other scientists.

The present issue includes opinions of some colleagues part of the SONA office, information on the SONA, its activities and on related organizations. It also addresses important events that will take place soon and information about African scientists who have been recently awarded or granted. Throughout several issues, we will initiate a series of historical SONA events, past SONA meetings and personalities that have made a difference for SONA. In this issue, Prof. Wail Benjelloun shares with us the early achievements of African Neurosciences and events which seeded the establishment of SONA. Undoubtedly, group exchange between African scientists and international organizations is valuable for the future of our society. Here, Prof. Raj Kalaria gives us an opinion on potential future collaboration venues for the SONA community with European and international societies. As science should remain a major interest for our community, neurosciences particularly related to Africa will be covered. Here Prof. Vivienne Russell presents a brief overview of most known African brain disorders.

Certainly, you will witness more to come in future issues, and we are looking forward for our readers to find this initiative constructive and of benefit to your activities. However, we believe that a key component for this initiative to last and succeed is your input to make the newsletter more accessible and useful for SONA members. We welcome your feed-back and contributions.

MESSAGE FROM THE SONA SECRETARY GENERAL
Nouria LAKHDAR GHAZAL
Mohamed V University, Rabat Agdal, Morocco

First of all, I am pleased and honored to serve as Secretary General of our Society and I thank my colleagues and friends for their confidence. They have given me the opportunity to serve neurosciences on our continent in yet another capacity. I thank them especially for giving me the opportunity to express my vision for the future. For the next few decades, research, training by research and the teaching of neuroscience at all levels will be important priorities. “Everyone has heard of the Human Brain Project, of the Human Connectome project, or Mapping the human brain” etc..., and the selection of the two most revolutionary research projects in neuroscience, one sponsored by the United States and the other by Europe. Almost all countries with expertise in this field are associated with these projects. This shows how investment in training and research in neuroscience is a global objective. This is however not yet the case on our continent even as it suffers most from brain dysfunctions and diseases of the nervous system in general, with their heavy economic and social burden. Africa faces widespread child malnutrition and its consequences on brain development, increased incidence of neurological and neurodegenerative diseases and a chronic presence of infectious diseases, in addition to widespread substance abuse.

Awareness of the importance of the development of curricula in neuroscience and the establishment of structures of neuroscience research gave rise to the birth of the Society of Neuroscientists of Africa in 1993 as everyone knows. With the help of IBRO, then joined by ISN, a significant effort has been made to implement training in neuroscience through thematic schools and encourage the identification of priority research themes for the continent.

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Dear Colleagues

The plans to host the 12th International Conference of the Society of Neuroscience are at an advanced stage. We have invited 11 high calibre plenary speakers and as of July 2014, all have accepted. The talks scheduled will be closely associated to the theme of the conference Brain sciences addressing research needs and priorities in Africa. Sandwiching the plenary talks, will be two parallel symposia sessions. The conference will be held at the Tsogo Sun Elangeni and Maharani hotel from 26 – 30 March 2015 in Durban South Africa.

The city of Durban is found on the east coast of South Africa. It has a rich cultural and natural heritage and is home to 4 universities. The Tsogo Sun hotel chain encompasses a variety of hotels that will appeal to each person’s needs. Most of these are situated on the Durban beach front within walking distance to the conference venue. The information on the hotel accommodation together with the plenary speaker names and other relevant information will be placed on the conference website www.sona2015.com before the end of the month. I am encouraging our fellow African neuroscientist to submit abstract applications soon as the number already submitted is growing daily and we may not be able to accommodate everybody.

We are delighted in welcoming you to SONA 2015.

THE EARLY YEARS OF AFRICAN NEUROSCIENCE

Wail BENJELLOUN
Mohammed V University, Rabat, Morocco

Neuroscience in Africa really started very long ago; the Pharaohs were the first civilization to develop the concept of “brain” 3500 yrs BC. The Edwin Smith papyrus of the pharaoh priest Imhotep with its reported 48 clinical cases of injuries to the head and spinal cord is a remarkable document, linking peripheral symptoms to central dysfunction for the first time.

Widespread use of the term “neuroscience” started in the late seventies and early 80’s. In February 1988 UNESCO sponsored, through IBRO and in collaboration with the African Academy of Sciences, a workshop at the University of Nairobi to bring African neuroscientists together to discuss advancement of the discipline in Africa. Instrumental in that effort was IBRO Secretary General (1983-1997) David Ottoson. At that meeting in Nairobi, attended by Nobel Prize laureate Thorsten Weisel, Ottoson pushed for the structuring of our activities in Africa. We were not very many, 10 or 12 in all, housed at the beautiful facilities of ICIPE, mostly from Anglophone Africa. I was the only participant from either Arabophone or Francophone Africa. Others participants were from Kenya, of course and notably James Kimani, but also Nigeria, Uganda, Tanzania and Mozambique. We launched the Society of Neuroscientists of Africa (SONA). Our aim was to establish a directory of African neuroscientists, to push for closer pan African collaboration, to organize meetings and to encourage advanced training and research in the discipline. Our major issue at the time was how to communicate between ourselves, fax machines had just come into vogue and, with difficulty, we decided to invest in the technology.

Ottoson insisted that we participate in the 3rd IBRO Conference in Montreal in 1991, and then personally came to Morocco to attend the Arab Neuroscience Conference in Agadir. At the Montreal Conference a second meeting was scheduled in Nairobi in 1993 as the First formal SONA International Conference and Ottoson made a personal commitment to the hosting of the second meeting in 1995 in Marrakesh, Morocco. IBRO accompanied us throughout and has continued to do so through its consecutive Secretaries general. I would here like to pay homage to Professor Ottoson and to James Kimani, both of whom were instrumental in the early years.

SONA COMMITTEE IN BRIEF

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With the vision of the Secretary-Generals of IBRO, the African Region Committee and SONA have sustained collaborations with neurological federations worldwide to promote research in the clinical neurosciences in Africa. IBRO Africa in particular has forged links with the World Federation of Neurology (WFN; www.wfneurology.org) and the European Federation of Neurological Societies (EFNS; www.efns.org). Our partnership with the EFNS is particularly worthy of note at this time. From this year there is a turning point for the EFNS and the sister organisation European Neurological Society (ENS; www.ensinfo.org) and indeed European neurology. The EFNS and ENS will marry to launch a new single organisation to be called the European Academy of Neurology (EAN). The two founding neurological societies have ceased to exist from May thereby forming a unique but the largest Academy of Neurology with their first joint EFNS-ENS joint inaugural meeting in 31st May- 3rd June, 2014 in Istanbul, Turkey. IBRO, SONA and the European neurological community at large, should be interested in this momentous change. Of course, there is every opportunity for SONA and ARC’s collaboration with the new EAN to be renewed and even more strengthened!

ARC and SONA members have also been active contributors to the EFNS lead Regional Teaching Courses (RTC) in the Neurological Sciences in Sub-Saharan Africa since their inception in 2008. The last RTC held July 2013 was in Dakar, Senegal (photograph), where SONA successfully held her 4th International conference in 1999. Similar to schedule of the IBRO schools in Africa, at the RTCs European and African faculty members share their knowledge and experience, encouraging neurologists and neuroscientists in training to achieve excellence in clinical practice and research. Clinical cases and professional skills such as how to write a paper are included in the curriculum. Professors A Gallo Diop and Raj Kalaria will participate in the forthcoming 6th RTC in Lusaka, Zambia in June 2014.

SONA and ARC members have also played a role in shaping other exciting initiatives in Africa including contributing regularly to World Neurology Newsletter, the chapters of neurological research disciplines e.g. epilepsy, stroke, dementia, of the WFN and regional meetings of the WFN. One of the past presidents of SONA, Gallo Diop is the current Africa Region coordinator and an elected Trustee of the WFN. Professor Alfred Njannshi (Cameroon), a previous ARC/SONA member had served as the past WFN’s Regional director for Africa. Thus SONA has very close ties with neurological organizations that have a strong interest in advancing the neurosciences in Africa. SONA should take every opportunity to engage with colleagues from several camps (EFNS, WFN, PAANS and IBRO) for further encouragement and enhancement of neurosciences in Africa. Enabling such collaborations will no doubt impact on generations of neurologists and neuroscientists in time to come. Indeed, SONA should watch this space in making wider contacts and keenly working with the mega European neurological organisation (EAN) forthcoming from the amalgamation of the EFNS and ENS.
Malnutrition continues to be a serious problem in many parts of Africa and is a major cause of disability in later life (Kerac et al., 2014). Pregnant women and children are especially vulnerable. Maternal malnutrition affects development of the foetal nervous system, giving rise to poor cognitive function, behavioural disorders and eventual low socioeconomic standing (Kerac et al., 2014).

HIV/AIDS: More than 1.5 million children in sub-Saharan Africa are living with HIV and at risk of developing HIV-associated dementia (Laughton et al., 2013; Murray et al., 2012). Vertically-transmitted HIV (from mother to child) is a major problem, with ventricular enlargement, atrophy, calcification and damage to the corpus callosum, a sign of early brain damage (Hoare et al., 2014). Little is known about the effects of HIV and antiretroviral treatment on the developing brain (Laughton et al., 2013). There is an urgent need for research into the longitudinal trajectory of neurodevelopment among children and adolescents perinatally infected with HIV (Laughton et al., 2013).

Malaria: Increased effort needs to be made to reduce the high incidence of cerebral malaria in infants and young children by introducing more effective methods of prevention and treatment (Griffin et al., 2014).

Cerebrovascular disease: Stroke is a major cause of adult-onset disability in Africa (Murray et al., 2012). Efforts aimed at decreasing the prevalence of hypertension, a major risk factor for stroke, through education and dietary sodium restriction has been recommended as a critical first step (Goldstein 2013).

Diarrhoea exacerbates malnutrition, causing vitamin and iron deficiencies, leading to neurocognitive impairment, low IQ and functional morbidity persisting into adulthood (Kerac et al., 2014; Galler et al., 2012; Waber et al. 2014). Simply reducing diarrhoea improves nutrition and hence outcome (Kerac et al., 2014). Information on ways to reduce risk and introduce protective factors is sorely needed.

Toxic nutritional disorders are also common in Africa. Cassava is an important food crop but it contains toxins that cause Konzo (peripheral polyneuropathy with prominent sensory loss and ataxia, Osuntokun, 1971). The raw cassava needs to be carefully prepared before cooking to remove the toxins (Kerac et al., 2014). Konzo occurs in Central and East Africa, specifically Cameroon, Central African Republic, Democratic Republic of Congo, Mozambique, Tanzania (Kerac et al., 2014).

Lathyrisim, equally debilitating (spastic paraparesis caused by excessive ingestion of grass pea), is found in Ethiopia (Kerac et al., 2014).

Neurological disorders: Neurological disorders contribute substantially to morbidity in Africa, with headaches, epilepsy and intervertebral disc disorders major contributors to morbidity in countries such as Cameroon (Lozano et al. 2012; Murray et al 2012; Tegueu et al., 2013). In a study by Cubo et al (2014), patients with Parkinson’s disease in Cameroon received dopaminergic drugs at a lower dose and less frequently than a Spanish cohort and the Cameroonian patients were more severely impaired in terms of motor function, cognition, anxiety/depression, psychosis, somnolence, fatigue/pain, and quality of life (Cubo et al., 2014). The authors attributed this negative outcome to their limited and intermittent access to dopaminergic drugs.

Epilepsy: The prevalence of epilepsy in Africa is amongst the highest in the world, varying from 7 to 14.8 per 1000 (Ngugi et al. 2013). Infections, in particular cysticercosis in its endemic areas, cause most cases of epilepsy (Preux and Druet-Cabanac, 2005). The prevalence of epilepsy in North Africa is lower than in the south, mainly because of the lower incidence of infections, better medical infrastructure, and trained medical personnel (Preux and Druet-Cabanac, 2005).

Neglected tropical diseases: The highest rates of tropical diseases (Chagas, Leishmaniasis) occur in Central Africa, because of the combination of schistosomiasis, onchocerciasis, African trypanosomiasis and hookworm (Murray et al., 2012).

Mental disorders: Mental disorders such as depression/anxiety, schizophrenia, ADHD, multiple sclerosis, are prevalent in Africa but there are very little data concerning their burden to society.

Substance use disorders: The incidence of foetal alcohol syndrome in the Western Cape Province of South Africa is amongst the highest in the world (Hess et al. 2014). Dependence on psycho-stimulants is a major contributor to the disease burden in Africa (Degenhardt et al., 2014). Methamphetamine abuse during pregnancy is on the rise in Southern Africa with devastating effects on the developing foetus, leading to structural, cognitive and behavioral abnormalities (Kwiatkowski et al., 2014).

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MESSAGE FROM THE SONA SECRETARY GENERAL; Nouria LAKHDAR GHAZAL

Every two years since 1993, we have had the opportunity to gauge the development and advancement of neuroscience research on the continent during the conferences of our society. It is satisfying to note that since then we have managed to train generations of neuroscientists, and that the African presence is increasingly more important in terms of number and quality as we saw during the SONA 2013 conference. However, much remains to be done, since we still need teaching tools and workshops to teach young scientists how to write a scientific paper. We are also in need of journals that agree to publish special issues with the work presented in our conferences. We must also continue to train in the US and Europe and to co-publish our research work. We especially need a good neuroscience research reference facility in Africa.

What can SONA do to change things? We must work to build on the investment of each to create a common reference ground, with results surpassing the sum of the parts. Together, with the same vision, we can attain the means to achieve our goals and avoid the sidelines of development. I expect to work with all, especially the young, and to benefit from the contributions of each and everyone to ensure the success of my mandate.

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BRIEF OVERVIEW OF BRAIN DISORDERS IN AFRICA; Vivienne Ann RUSSELL

Dementia: Prevalence rates of Alzheimer’s disease and vascular dementia are low in sub-Saharan Africa, however, with increasing longevity, the incidence of dementia in Africa is destined to increase (Kalaria et al., 2008). A comparison of African Americans and the Yoruba tribe in Nigeria revealed that the APOE e4 allele had a significant, but weaker, effect on the incidence of Alzheimer’s disease and on cognitive decline in Yoruba than in African Americans (Hendrie et al, 2014). Guerreiro et al (2010) studied seven different African populations, Biaka Pygmy, Mbuti Pygmy, Mandeka, Yoruba, San, Bantu and Mozabite and identified new mutations in presenilins and amyloid precursor protein. Genetic diversity is greatest in Africans which provides a unique opportunity to identify mechanisms underlying apparent resilience to dementia.

Future studies: Future needs of importance in Africa, include the development of techniques to enable early diagnosis and novel treatment strategies to address cognitive disabilities and peripheral neuropathies in children with cerebral infections such as HIV, malaria, tuberculosis, and children who have been exposed to toxic compounds such as cassava and insecticides. Alternative ways need to be found to address endemic problems such as malnutrition which negatively impact brain function, an example of which is reducing diarrhea, thereby improving nutrition and reducing the consequences of malnutrition. Establishment of research infrastructure in Africa over the past 10 years can largely be attributed to the support of funders such as the World Bank, WHO, NIH and the Fogarty International Center. The considerable investment in promoting brain disorders research in Africa has laid the foundation for future studies to take our knowledge further and improve ways to treat these disorders.

References:
• Goldstein LB (2013) 81:403-404
IMPORTANT DEADLINES


REGIONAL ACTIVITIES

- IBRO-ARC Epilepsy Workshop, Kinshasa, Democratic Republic of Congo (DRC) September 6 - 12, 2014.
- IBRO-ARC Writing Papers Workshop 2014, Kinshasa, DRC, September 1 - 4, 2014
- Annual Congress of the Neurological Association of South Africa (NASA), held at the Sandton Convention Center, 2-5 April 2014. [www.mynasa.co.za](http://www.mynasa.co.za).
- TReEND in Africa will organize a workshop in Tanzania, here is the link [http://trendinafrica.org/](http://trendinafrica.org/)
- Neuroweek and IBRO school in Egypt this coming October. Here is the links [http://ibro-egypt.com/](http://ibro-egypt.com/)
- Annual Congress of the Neurological Association of South Africa (NASA), held at the Sandton Convention Center, 2-5 April 2014. [www.mynasa.co.za](http://www.mynasa.co.za).
- The Institute for Mindfulness South Africa Conference, organized by the Event Management Solutions will take place from 4-6 September 2014 at the Stellenbosch Institute for Advance Study in Stellenbosch, South Africa. [http://10times.com/institute-for-mindfulness-south-africa-conference](http://10times.com/institute-for-mindfulness-south-africa-conference)
- MNS meeting