



Emerging neuroscience

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Dr Pierre J Magistretti highlights IBRO's efforts to develop global neuroscience activities through collaborative research, teaching, advocacy, funding and dissemination frameworks. Through greater understanding of the brain and its mechanisms within the context of disease, the Organization's ultimate goal is to promote training of neuroscientists and efforts to build capacity, as well as to raise awareness about brain diseases worldwide

Could you provide a brief overview of the International Brain Research Organization (IBRO)'s main activities?

IBRO is a global federation of more than 80 neuroscience organisations that recognises, supports and promotes neuroscience research, teachers and students around the world. Our main activities include global advocacy workshops that provide a platform for multistakeholder discussions on regional neuroscience research and concerns, as well as teaching and research programmes that offer training and advanced courses for neuroscience teachers and students. Additionally, IBRO presents travel grants and fellowships to students and teachers who want to pursue research, courses or conferences abroad or return to their home country to establish a lab or a course, or hold their own conference. Finally, we organise our World Congress every four years, which attracts attention to neuroscience contributions of the host region and country as well as to the global relevance of neuroscience in general. Our next Congress will be in Rio de Janeiro, Brazil, from 7-11 July, 2015.

What are IBRO's overarching aims and objectives?

The Organization's core aims are to increase global awareness of the fundamental importance of neuroscience contributions to human welfare, to increase scientific capacity worldwide in the field of neuroscience, and promote international collaboration and neuroscience knowledge sharing around the world. In order to achieve this, we have a set of objectives that are currently guiding our work. As such, we organise annual global advocacy workshops in each IBRO region, and increase communications through social media outlets such as Facebook, Twitter, Instagram and Tumblr, and by managing our flagship publication, the IBRO *Neuroscience* journal published by Elsevier, in order to more broadly disseminate information about advanced research in neuroscience.

Furthermore, we provide high-level research and training courses to neuroscientists worldwide and increase postgraduate fellowship opportunities and travel grants for neuroscience students. Moreover, in order to increase collaborative work, technology and knowledge sharing,

particularly between less and more developed countries, we build partnerships with other organisations with similar objectives.

As President of IBRO, what does your role entail? How has your professional background prepared you for these endeavours?

In the role of President, I act in conjunction with the Secretary-General as the principal spokesman for the Organization and have a number of responsibilities that all support and promote IBRO's overall mission and work. I am Chair of the Governing Council, the governing body of IBRO, which determines its policies and programmes. As an officer of the Executive Committee, I also help to implement the initiatives of the Governing Council and manage any administrative issues that arise.

IBRO inherited the governance of the Dargut and Milena Kemali Foundation in 2011 when Dargut Kemali, a renowned psychiatrist at the University of Naples, Italy, passed away. Consequently, the President of IBRO also becomes the President of the IBRO-Kemali Foundation, which runs the IBRO-Kemali Mediterranean College of Neuroscience in Cortona, Italy, and awards the IBRO-Kemali International Prize for Research in the Field of Basic and Clinical Neuroscience. The College and Prize occur alternately every two years.

My professional background is global and includes much leadership experience in research, teaching and administration. I believe these were the primary reasons why I was prepared for the role of IBRO President. I think it is essential to have experience and an appreciation of every facet of a field such as neuroscience in order to assume a leadership role in an international organisation such as IBRO. To personally experience and understand the challenges of being a neuroscience student, professor, research group leader, committee member, chair and director in a variety of international settings and institutional frameworks has allowed me to find common ground with the entire range of stakeholders involved with neuroscience research, outreach and promotion. Being multilingual in Italian, French and English has also helped me to facilitate communication and understanding between different research communities. In general, it is a great pleasure to work in the field of neuroscience and support and collaborate with neuroscientists around the world.

Can you offer an insight into some of the current key research areas in the field of brain sciences?

Neuroscience ultimately aims to understand how the brain works, and how it can produce thoughts and behaviours. It also aims to understand the molecular bases of brain diseases in order to improve treatments. To achieve these goals, research projects span from the study of the molecular and cellular mechanisms of neural cells, to how circuits and networks operate and complex behaviours emerge. Experimental models involve simple organisms such as the fruit fly or zebra fish as well as more complex rodents and humans. Currently, dominant topics of research are the study of the mechanisms of learning and memory, emotions, and the neuronal basis of psychiatric and neurodegenerative disorders.

In what ways does the Organization promote global collaboration in neuroscience research?

Since 2008, we have run approximately 100 schools for students; supported over 900 fellows to pursue research, and travel and participate in symposia, workshops or conferences; and held over 350 events, including short courses and research stays. These have all increased networking, mentorship, training and knowledge sharing opportunities for students as well as teachers. Learning and collaboration occur for everyone involved in our programmes and activities, which are managed expertly by our regional committees as

well as other committees concerned with fellowships and grants, global advocacy, supporting women in neuroscience across the world and alumni.

How is IBRO supporting female neuroscientists through the Women in World Neuroscience (WWN) Program? What challenges does the initiative face, and how are they being addressed?

WWN provides mentorship, networking, theoretical and practical courses and training workshops to improve career development, and other support for women neuroscientists around the world. Its activities pay special attention to women in disadvantaged regions in parts of Asia, Africa, Latin America and Eastern Europe because they face challenging conditions imposed by tradition, culture, religion or politics. They lack educational support and encouragement, career and mentorship opportunities, as well as general learning infrastructures and basic access to equipment, technology and laboratory spaces normally required for research in neuroscience. WWN has been holding several workshops and training courses for women in these disadvantaged areas and, as a result, has increased networking, mentoring and career opportunities available to them.

In 2012, the IBRO Global Advocacy Initiative was launched to increase support among key policy makers in improving the resources and education available for neuroscience. Can you expand on why this programme was set up and what progress it has made so far?

The IBRO Global Advocacy Initiative was launched to satisfy the demand for a united international effort in promoting and educating people about

The Human Brain Project

Over 10 years, hundreds of scientists, 112 institutions, 24 countries and 12 research areas will be involved in this pioneering initiative to enhance brain research, map brain diseases, accelerate the translation of research into products and services, provide education and develop technologies for neuroscience.

Planned research impacts:

- Accelerated development of diagnostic tools and treatments for brain diseases
 - Reduced cost of drug discovery for the pharmaceutical industry
 - Simulation-based pharmacology
 - New classifications of brain diseases
 - Personalised medicine
 - Reduced economic burden on European health services
 - New markets for high performance computing
 - Access to data and research tools for scientists around the world
 - Development of low-cost, energy-efficient computers, ultimately with brain-like intelligence
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the fundamental importance of neuroscience and how it benefits human life, ensuring a more sustainable future for all. There has also been a lack of communication and discussion between neuroscientists, policy makers, industry leaders and other stakeholders, leading to a general lack of public knowledge about neuroscience research and its benefits, as well as many misconceptions, misunderstandings and marginalisations of neuroscience in the policy-making arena. Although large projects, such as the Human Brain Project in Europe and the Brain Initiative in the US, have been able to attract attention and financial support, there are also influential international organisations such as the World Health Organization (WHO) that have not emphasised brain diseases; most notably in their recent Non-communicable Global Disease Action Plan (2013-2020), in which brain diseases were only briefly mentioned in the plan's annex. There is clearly much more advocacy needed in support of neuroscience.

IBRO's Initiative is currently addressing this by running a series of workshops organised by our regional committees in different areas of the world to begin the necessary conversations. The workshops are bringing representatives from as many stakeholder groups as possible to the same forum in order to facilitate discussion, expose different viewpoints, eventually create better and more inclusive policies, and hopefully attract more support for brain research specifically relevant to the host region. Two workshops have already taken place, one in Kinshasa, Democratic Republic of Congo, and another in Buenos Aires, Argentina. Both were very successful and we are hoping that the next one in Mumbai, India, in February 2015 will enjoy the same success.

How does IBRO strive to encourage young people to develop a career in brain sciences, and what support is provided to those in more economically challenged countries?

IBRO encourages young people by providing them with research fellowships, training courses, travel grants, and mentorship and networking opportunities with renowned neuroscientists they may not otherwise have the chance to meet and work with. In the more economically challenged countries, our regional committees are able to work 'on the ground' with local neuroscientists, students, teachers and researchers to run courses and workshops, hold outreach activities and encourage local/regional support for neuroscientists. IBRO also provides funding to purchase equipment and establish labs in places where the infrastructure is weak.

Are there any upcoming projects in the pipeline that IBRO will be implementing in the near future?

We have a new European programme called the Cajal Advanced Neuroscience Training Programme, which was announced in July 2014 during the 9th Federation of European Neuroscience Societies (FENS) Forum in Milan, Italy. The programme was initiated by FENS and IBRO in collaboration with Bordeaux Neurocampus in France and the Champalimaud Foundation in Portugal, to offer high-level training courses in Europe. The first courses will begin next year. We are also rethinking our Africa Schools programme and may soon have a new framework upon which to build a long-term infrastructure that will also offer high-level training courses tailored to African neuroscience issues. A few new co-funded fellowships will hopefully be offered in 2015 as well so please check our website, main and regional Facebook pages, and Twitter account soon.

 @ibroSecretariat

 InternationalBrainResearch068

IBRO partnerships

IBRO's partnerships and collaborative work with other organisations have enabled it to increase opportunities for neuroscientists, better promote the discipline on a global scale and enhance support of neuroscience activities, discussions and events. Current partners include:

- Society for Neuroscience
- Federation of European Neuroscience Societies
- Dana Foundation
- International Society of Neurochemistry
- Japan Neuroscience Society
- Australian Neuroscience Society
- Grass Foundation



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