# Beata Sperlagh â?? Deputy Director, Institute of Experimental Medicine (IEM), Hungary

The significant economic burden associated with brain disorders is a challenge that not only Hungary, but countries worldwide, have come to realize.

06.11.2019

Tags:

Hungary, Research, Neuroscience, IEM

*Dr Beata Sperlagh, Deputy Director of the Institute of Experimental Medicine (IEM), shares her insights on the instituteâ??s involvement in research and with the private sector, the key strengths of IEM in the field of neuroscience, and its importance in the region.*

**Can you introduce yourself and the institute?**

The Institute of Experimental Medicine (IEM) was founded in 1952, and it is the only research institute in Hungary exclusively dedicated to biomedical sciences. The main mission of the institute is to perform basic research, better understand the background of different diseases, and find new therapeutic targets and cures for them. The most important milestone of the institute was at the beginning of the 90s when it switched from being a general medical research institute to specializing in neuroscience.  Today, we focus on a myriad of brain disorders and diseases related to the nervous system which include depression, stroke, Alzheimer, epilepsy, and schizophrenia â?? all of which represent a high unmet medical need.

Since 2002, we drive to maintain our international competitive standing by upholding a high level in basic neuroscience research and continuously publish in internationally renowned journals like *Science* and *Nature*. We have 17 independent research groups which were mostly founded by young scientists that returned from abroad, having been attracted back by Hungaryâ??s long-

standing roots and traditions in neuroscience.

The pharmaceutical industry has also historically played an important role for the country. Even though most of the sector has been privatized, the IEM still has active collaborations with international and national pharma companies alike. Johnson & Johnson, Novo Nordisk and Gedeon Richter are some industry players that have an invested interest in the diseases of the central nervous system and with whom we have a good relationship.

**Do you see Neurological Sciences being prioritized in Hungary?**

The significant economic burden associated with brain disorders is a challenge that not only Hungary, but countries worldwide, have come to realize. To illustrate, in Europe, brain disorders have a higher medical cost than all non-brain disorders put together, including cardiovascular diseases and cancer. Part of the reason for this is that the chronic nature of these diseases are not yet fully understood and can be difficult to manage at the patient care system level.

This gap has been recognized worldwide as we see with new initiatives and programs being launched such as the BRAIN initiative in 2013 by President Obama in the US, The Human Brain Project in 2013 by the EU, and in 2014 Hungary launched its own brain research program. Hungary is still a quite small market and does not yet have the means to support all areas of science.

Hence, a special budget was allocated to neuroscience and other areas of research in which the country excels.

**How does Hungary compare to other countries in the region in the field of neuroscience?**

Hungary is an important hub for neuroscience not only to Central Eastern Europe (CEE), but also for Europe overall. Of course, countries like Switzerland and France are more advanced, but Hungary remains competitive in this field. To illustrate this, the Brain Prize, formerly known as The Grete Lundbeck European Brain Research Prize, is a prestigious international award and which was won in 2011 by PÃ©ter Somogyi, GyÃ¶rgy BuzsÃ¡ki, TamÃ¡s Freund by for their technical and conceptual research on memory formation.

Furthermore, we have a strong ranking in the *Nature* Index for our extensive contributions in the field; approx. half of the papers published by the Hungarian Academy of Science come from the IEM. We also have a strong research network and candidates. We currently have nine researchers that have been awarded a European grant. This shows that Hungary is a strong contender in the academic and research field which cannot be easily neglected.

**What are the key strengths and areas of improvement of Hungaryâ??s research environment?**

The research environment is a mature one that is embedded in long-lasting traditions and historical ties, not only for neuroscience but also in pharmacology and drug research. Hungarian institutions are at the periphery of the industry and collaborate quite extensively together to quickly develop new drugs. However, like any country, funds are lacking and science is not amongst the top priorities of the government. This means that we must rely on private contributionsâ??which are minimalâ??to

fund our research and a relatively low amount is invested into development. Due to these factors and a GDP that is lower than the EU average, Hungary is suffering also from a brain drain issue. However, conditions are getting better and we see more professionals and researchers are returning to Hungary. Nevertheless, more predictable funding would further strengthen the research ecosystem in the country.

**What collaborations does the IEM have with the companies in the pharmacology industry?**

Pharmaceutical companies have increasingly recognized the importance of academia in the field of drug discovery and new concept generation. The IEMâ??s most important partnership, past and present, is with Gedeon Richter who is the local market leader. However, we have collaborated on several occasions with other major players such as Egis, Servier, and Pfizer as well. We have a strategic partnership with the industry where the IEMâ??s ideas are incorporated into the drug development process and research groups are actively involved in the development of new drugs for conditions such as autism. We are always keen to collaborate, and if there are possibilities, we explore the full extent of any potential partnership. With each company, there is a learning curve in collaboration methods, and depending on size, there can be various approaches to research. In some instances, we utilize researches who work for the industries as advisors to foster and expedite this processes.

However, even if there are some partnerships forming in the field of central nervous system (CNS) drug discovery, there is still room for more drugs to be developed. The challenge is that big pharma companies have stopped their R&D in the area because it requires a high level of specialization and expertise. The main difference when comparing CNS to immunology or cancer is that there is still a relatively unknown factor of how results in animal models will translate in human trials. The human central nervous system is much more complex than mice or other laboratory animals, and thus, major breakthroughs in the drug and therapy development of the area are few and far between. This naturally pushes companies to pursue relatively lower-risk fields rather than CNS.

**What final message do you have about research in Hungary?**

Hungaryâ??s research and talent base is competitive and increasingly attracting more researchers from an international sphere. We strive to maintain our leadership position in neuroscience while continuously improving the ecosystem in which we operate. The collaborations that we have with the private sector remains an attractive and important element, and by fostering new partnerships we hope to drive the countryâ??s innovative endeavors.

See more interviews