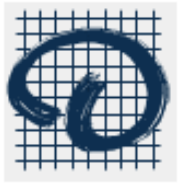








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National and regional brain research programs

EU-funded Human Brain Project

Established in 2013, overarches neuroscience and ICT, with the aim ***to model human brain***, better understand brain disorders, and develop new therapies and technologies. Its total costs are €1.19 billion for a 10 year period.

US BRAIN Initiative

Announced in 2013, aims ***to map the activity of every single neuron type or area in the human brain***. Its initial budget was $110 million.

Hungarian Brain Research Program

Initiated by the government in 2012, and launched in 2014, aims ***to support brain research projects*** in which Hungary has significant local expertise or traditions, and which are of considerable scientific, clinical or societal importance. By its 39 million euro, the HBRP also tries to reverse “brain-drain”.

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High priority for brain research in Hungary? Why?

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High priority for brain research in Hungary? Why?

- The **medical need** is alarming
- **Traditions**, **human resources** and **international embeddedness** in brain research is strong
- **Academy-industry relationship** is promising
- **Public awareness** is high

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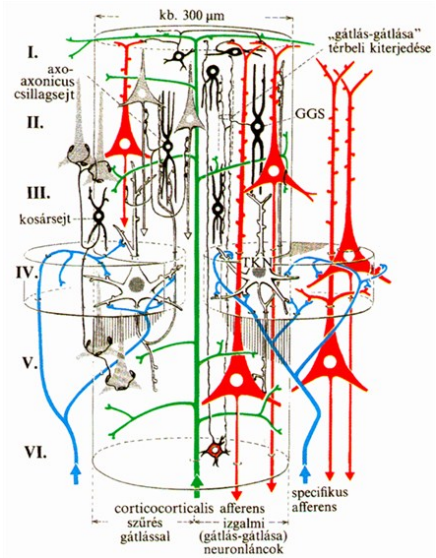
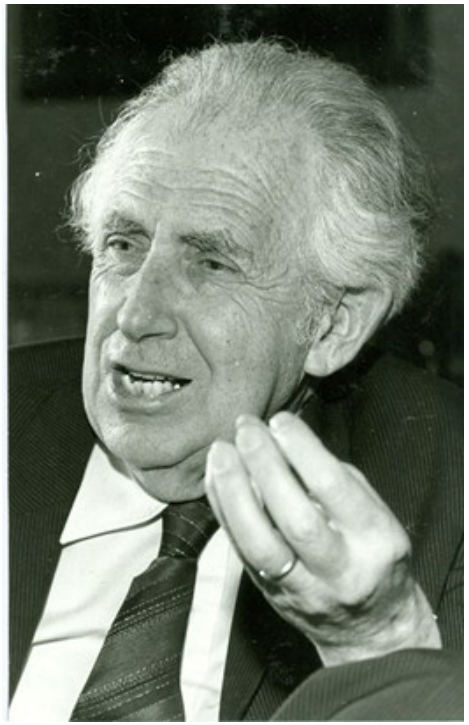
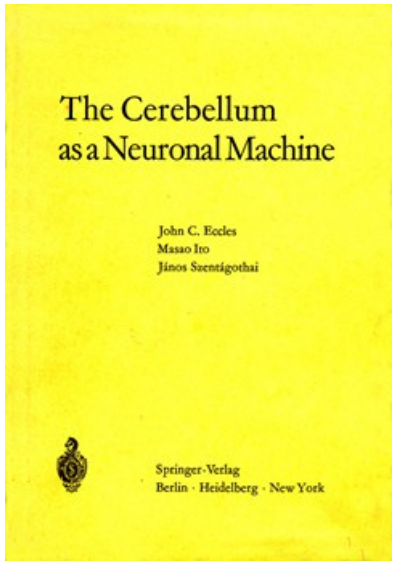
János Szentágothai (1912-1994)







The UNESCO dedicated the year 2012, the 100th from the birth of Hungarian professor, **to the memory of János Szentágothai**.

"Contemporary Hungarian brain researchers have all stepped out of his cloak."

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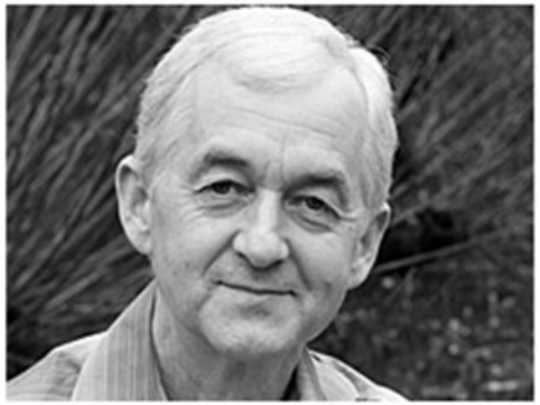
GRETE LUNDBECK EUROPEAN BRAIN RESEARCH FOUNDATION

THE BRAIN PRIZE

Prize Winners 2011



The Grete Lundbeck European Brain Research Foundation announced 4 March 2011 that The Brain Prize 2011 is jointly awarded to three Hungarian scientists,

Péter Somogyi, Tamás Freund and György Buzsáki,

'for their wide-ranging, technically and conceptually brilliant research on the functional organization of neuronal circuits in the cerebral cortex, especially in the hippocampus, a region that is crucial for certain forms of memory'.

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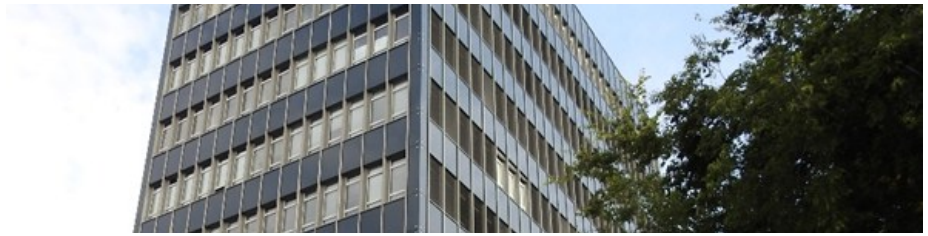
MTA Institute of Experimental Medicine

EU *„Centre of Excellence”* 1999-

Dedicated mainly to brain research



„world class research center” **– IBRO site visit committee**

„Mecca of brain cortex research” **– an ERC reviewer**

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The Hungarian Brain Research Program

- In February 2014, Hungarian Prime Minister *Viktor Orbán*, *József Pálinkás*, the president of the Hungarian Academy of Sciences, and *Tamás Freund*, the director of the MTA's Institute of Experimental Medicine, signed an agreement establishing the Hungarian Brain Research Program.
- With a budget of 39 million euros spanning four years, it has received the largest grant of any branch of science in Hungary, to date.
- The annual level of funding is 10 million euros per year.

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„I sincerely hope that the representatives of Hungarian science will use science for everyone's benefit."

Prime Minister Viktor Orbán, Hungarian Academy of Sciences, 26 February 2014

HUNGARIAN BRAIN RESEARCH PROGRAM
NEMZETI AGYKUTATÁSI PROGRAM

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The Program's goals

- to strengthen the **international competitiveness** and **societal respect** of brain research in Hungary, and
- to contribute to **decreasing the societal and economic burden** of brain disorders.

Establishing a ***"Neuroscience Network of Excellence"*** is one of the key points to be addressed in meeting this goal.

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Trying to reverse „brain drain”

The Program offers a **double professor’s salary**, and a grant of about US $1 million to those excellent Hungarian researchers who are willing to return home from abroad and **establish a new lab** in one of Hungarian universities or research institutions.

These new labs could **reintroduce competitive research** into university departments where the huge teaching load on lecturers prevented them from leading top quality research.

New research groups

- The Program accepts as new group leaders those who already work at university but had no time for research because of their teaching duty and covers their salary for the four years and the **university guarantees to decrease their teaching duty to a maximum of 10% of their working time**.
- The Program supports **new group leaders from fields closely related neuroscience** – e.g. informatics, physics and mathematics, molecular genetics – who could bring not only **new technologies, but also new ways of thinking, and new concepts** into brain research.

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The Program's thematic pillars

The program rests on **five pillars**:

(1) **discovery research,**

(2) clinical neuroscience,

(3) research related to drug development,

(4) bionics/infobionics, and

(5) **societal implications** (epidemiological and cost studies, neuroethics, etc.).

Within each of these pillars **we had to be selective and focus on the most promising projects led by** internationally known, **leading scientists**, and which have realistic and important goals.

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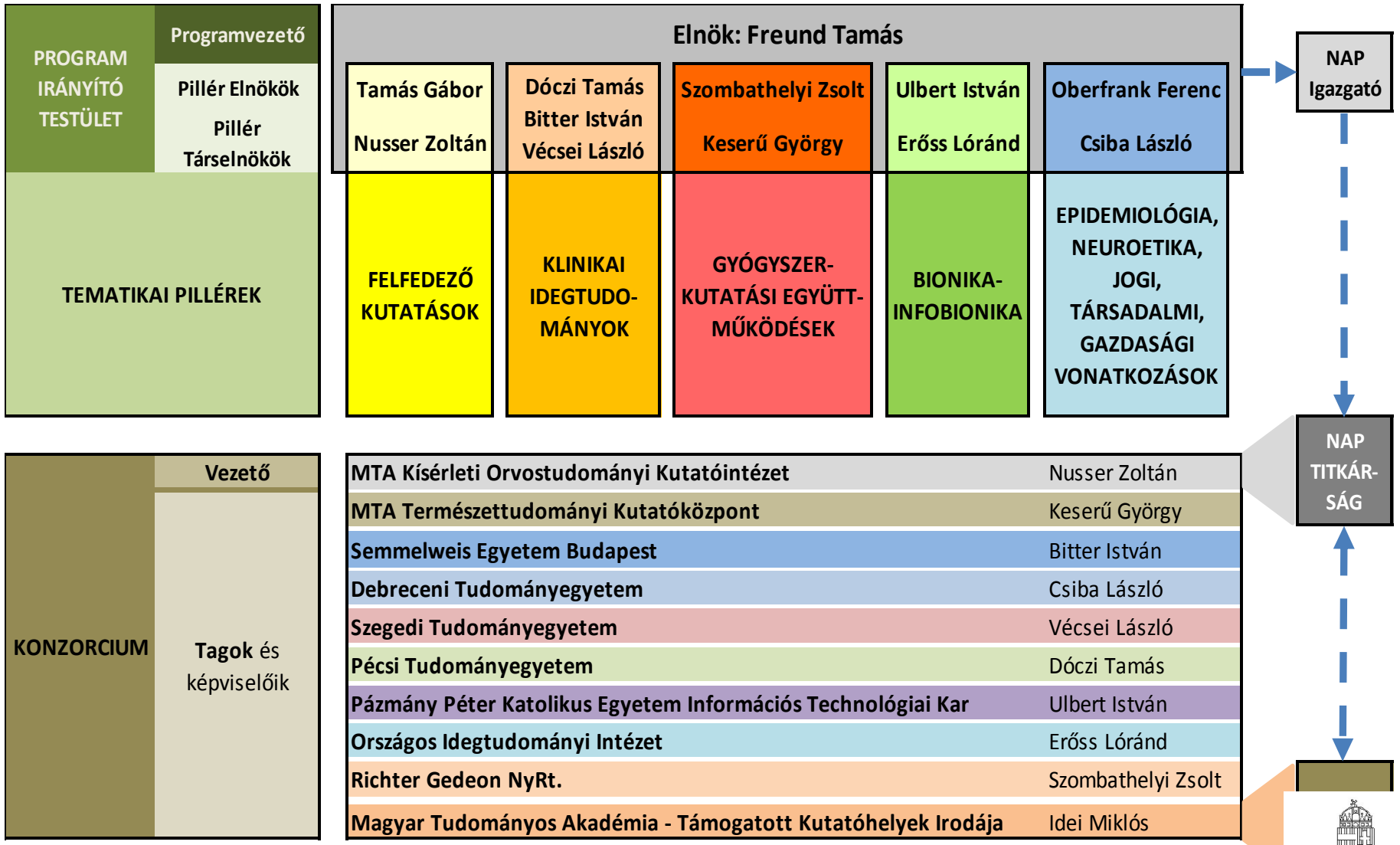
The structure of the HBRP



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Promising research projects and fields

In the field of discovery research:

- the role of thyroid hormones in development and synaptic plasticity;
- mechanisms of ischemic brain damage and inflammatory processes;
- visual processing in cortex,
- pain processing in the spinal cord,
- endocannabinoid signaling,
- the role of glucose transporters in ADHD, etc.

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Promising research projects and fields

In the clinical pillar:

- fMRI and biomarker studies in traumatic brain injury,
- optimizing conditions for deep brain stimulation in Parkinson's disease and psychiatric surgery,
- search for diagnostic markers in liquor for Alzheimer disease and sclerosis multiplex,
- the role of non-coding RNA sequences and epigenetic factors in Parkinson's disease,
- the role of atherosclerosis in sleep apnea, etc.

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Promising research projects and fields

In the infobionics pillar:

- the design of microelectromechanical systems (MEMS) and various lab-on-a-chip or closed-loop neurostimulation devices for possible implantation in the treatment of, for example, epilepsy.

HBRP indicators

New researcher positions	120
Researchers returning from abroad	12
PhD Students	70 fő
Graduate Students	50 fő
New research infrastructure	cca. 3,5 mrd HUF
Publications in leading scientific journals (minimum)	300
New grant applications	120
New product, service, technology, prototype	17
Patents	7
Involved scientific employees	**446**
Researcher	303
PhD Student	70
Postdoc	128
Young Researcher	77
Inter-institutional collaborations	60
International research collaborations	75

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