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Marcel Benoist and Latsis Swiss Science Prizes go to outstanding psycholinguist and innovative neuroscientist

Bern, 5 September 2024 – The psycholinguist Pascal Gygax receives the Marcel Benoist Swiss Science Prize for his excellent work on the influence of language on the perception of reality. The Latsis Swiss Science Prize goes to Mackenzie Mathis for her contributions in the field of machine learning in neuroscience.

With an endowment of CHF 250,000, the Marcel Benoist Swiss Science Prize is considered to be the Swiss equivalent of the Nobel Prize. This year's prizewinner is **Pascal Gygax**, scientist for experimental psycholinguistics and cognitive psychology at the University of Fribourg, whose outstanding contribution to research into the relationship between language and gender-specific prejudice is being recognised through this award.

Male is equal to man – and unequal to woman

His investigations into the influence of a masculinised language on our perception of the world are particularly relevant. His experiments show that the use of the generic masculine (meaning the sole use of male word forms for all gender identities) is not interpreted generically by the brain, due to its functionality. If we read a word in the male form, for example baker, we interpret it as "male equals men", meaning there is no automatic association with women or non-binary persons. This has far-reaching social consequences, examples being the choice of a profession or in the case of job vacancy advertisements. Professions perceived as typically male, such as surgeon (German: Chirurg), generate greater interest among girls and young women if they are also described in the female form (German: Chirurgin).

Research conducted by Pascal Gygax also addresses other questions, including, for example, the cognitive processing by adolescents of warning information on packets of cigarettes in order to develop more effective approaches to prevention. He has also been able to demonstrate how our perception of time is influenced by language.

Making science comprehensible

The communication of complex scientific findings in a generally understandable manner is a major concern of Pascal Gygax, as this makes science accessible to the general public. Radio

contributions and workshops addressing the subject of inclusive language are as much part of his commitment as working with children. He was a co-author in 2021 of the book *Le cerveau pense-t-il au masculin? Cerveau, langage et représentations sexistes* ("Does the brain think in the masculine? Brain, language and sexist representations"), a plea for inclusive language, based on scientific data from the last fifty years.

The researcher emphasises: "Receiving this award is not only a great honour but also a very important sign of recognition for the entire team. It rewards twenty years of research into the complex but exciting links between language and thinking, and more specifically, the links between language and male privilege. In today's world, this award also sends a strong message to anyone researching and highlighting gender inequalities: Your work is vital to research and teaching!"

Science prize for young researchers awarded to innovative neuroscientist

This year's Latsis Swiss Science Prize, which is presented to young researchers under the age of 40 and includes an endowment of CHF 100,000, goes to **Mackenzie Mathis**. The researcher is an assistant professor and holder of the Bertarelli Foundation Chair of Integrative Neuroscience at EPF Lausanne.

Our brain consists of complex networks of neurons known as neural circuits. These neural circuits are adapting continually to changes in the environment by converting incoming sensory stimuli into new motor output signals and, consequently, driving specific behaviour. Mackenzie Mathis and her team seek to decrypt these neural circuits, thus contributing to a better understanding of our brain.

New tools for decoding our brain

In her lab, Mackenzie Mathis works with a behavioural model of motor learning in mice and develops tasks that demonstrate how the realisation of newly learnt movements can be controlled by the brain. Mackenzie Mathis draws in particular on large-scale recordings of neuronal data and uses machine learning approaches she has developed specifically for this purpose. This enables her to contribute to an understanding of the interaction between behaviour and brain functions. For example, her DeepLabCut method can accurately quantify the movements of limbs, and her CEBRA method can demonstrate how the brain changes while learning or, for example, in the event of illnesses. Mackenzie Mathis is an advocate of the open science concept, and she provides researchers all over the world with here newly designed tools.

"I am deeply honoured to receive the 2024 Latsis Prize," says Mathis with evident satisfaction. "It is a wonderful recognition of our interdisciplinary work in the area of machine learning and neuroscience and provides the impetus for me to accelerate our efforts."

Joint award ceremony in the Federal Palace

The Swiss National Science Foundation (SNSF) was responsible for the scientific selection of the award winners on behalf of the Marcel Benoist and Latsis foundations. The joint award ceremony for the Swiss Science Prizes will be held on 7 November 2024 in the National Council Chamber of

the Federal Parliament Building in Bern. The presidents of the respective foundations will present the prizes in the presence of the Swiss federal councillor Guy Parmelin and the president of the National Council, Eric Nussbaumer.

The Marcel Benoist Swiss Science Prize
The 2024 laureate: Pascal Mark Gygax

Pascal Mark Gygax, who was born in 1974 in Evilard (Bern), earned a bachelor's degree in psychology from the University of Derby and a master's degree in sports psychology at the University of Liverpool. He gained a doctorate degree in experimental psychology at the University of Sussex. In 2002 he returned to Switzerland, where he was a co-founder of the Psycholinguistics and Applied Social Psychology Group in the Department of Psychology at the University of Fribourg, and he remains a co-director of this group. Pascal Mark Gygax is the author of over 60 peer-reviewed articles and numerous publications intended for the general public. He received the Prize for Outstanding Independent Studies from the University of Derby in 1998, and 2016 saw him awarded the Gender Prize of the University of Fribourg. The psycholinguist has already received 21 grants from national and international research funding organisations.

The Marcel Benoist Foundation
Since 1920, the Marcel Benoist Foundation has annually recognised research that is of relevance to human life. This recognition pays tribute to researchers who exemplify the level of excellence of research conducted in Switzerland. Eleven of these laureates have ultimately received the Nobel Prize. Since 2018, the nomination and selection process has been undertaken by the Swiss National Science Foundation (SNSF) on behalf of the Marcel Benoist Foundation. The 2024 prize is awarded in the humanities and social sciences. Further information is available at www.marcel-benoist.ch

The Latsis Swiss Science Prize
The 2024 laureate: Mackenzie Mathis

Mackenzie Mathis, who was born in 1984, completed her bachelor's education at the University of Oregon, following which she graduated with a PhD at Harvard University in 2017. As a PhD candidate, in 2013 she received a prestigious U.S. National Science Foundation Graduate Research Fellowship in Life Sciences. In 2017 she became a faculty member at Harvard University, as a Harvard Rowland Fellow. She has been working at EPF Lausanne since 2020. Mackenzie Mathis was honoured with the award of the FENS EJN Young Investigator Prize in 2022, and this was followed by the Eric Kandel Young Neuroscientist Prize in 2023.

The Latsis Foundation
The Latsis Swiss Science Prize has been awarded annually since 1984 by the Swiss National Science Foundation (SNSF) on behalf of the Latsis Foundation, which was founded in 1975. The prize honours young researchers up to the age of 40 at Swiss universities for their outstanding contributions. The prize winners are chosen through a selection procedure conducted by the SNSF. The 2024 prize is awarded in the field of biology and medicine. Further information is available at www.fondationlatsis.org

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Photos
Photos of the prize winners are available for download via the following link:
https://marcel-benoist.ch/wissenschaftspreise-2024/download
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