

Media release

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Ivan Gusachenko wins HORAO

The jury and audience selected the winning project at the HORAO Conference on March 14, 2019. Ivan Gusachenko from Rennes, France, has won the global crowdsourcing competition and therewith the prize money amounting to USD 35,000. His promising proposed solution will now be further developed to market maturity so that brain tumors can be operated even more safely in future.

Yesterday evening the five finalists from the USA, Canada, Spain, France and Germany engaged in a head-to-head race at the public [HORAO Conference](#) in Bern. In 2018 all five had participated in the global [crowdsourcing competition](#) (intelligence of the masses) for developing an even more accurate microscope for brain tumor surgery and were nominated for the final by an internationally renowned jury. The five finalists faced their final challenge at the HORAO Conference as they presented their proposed solution to the jury and the audience, who then determined the final winner via e-voting.

Detecting brain tumors with «Mueller Polarimetry»

Winner Ivan Gusachenko, Development Engineer at Cailabs SARL in Rennes, France, proposes the use of «Optical Mueller Polarimetric Imaging» to visualize brain tumors during surgery. «Mueller Polarimetry» uses polarized (i. e. organized) light to probe the tissue structures. Organised structures in the brain (brain fibres) reflect polarised light differently than unorganized cells (tumors). Gusachenko suggests equipping the surgical microscope with polarizers so that tumor borders can be directly faded in on the microscope image that the surgeon sees during the surgery. With the prize money in the amount of USD 35,000 and additional support by an expert coach, his project will be further advanced and eventually developed to market maturity.

Bernese innovative spirit and pioneering work

The aim of the [HORAO Project](#) is to find innovative technologies that can visualize the exact boundary between the tumor and the healthy, surrounding tissue during brain tumor surgery, thus enabling neurosurgeons to operate brain tumors even more safely and efficiently.

Behind the project are Prof. Dr. med. Philippe Schucht, Senior Attending Specialist, and his team at the Department of Neurosurgery at Inselspital, Bern University Hospital. The team successfully carried out the first [crowdfunding](#) in medical research in Switzerland in 2017 in order to launch a global crowdsourcing competition in 2018. In contrast to crowdfunding, crowdsourcing in Switzerland is still relatively unknown – yet offers the possibility to tap into creative and intellectual potential from thousands upon thousands of innovators from highly diverse fields of expertise worldwide.

Collectively, more than 10 000 people had shown interest in the HORAO crowdsourcing. Over 270 researchers and 18 teams from over 30 countries across every continent participated in the competition. A total of 45 projects from more than 20 countries were submitted.

The five finalists at a glance

Place	Finalist	Proposed solution	Country	Prize money
1	Ivan Gusachenko	Detecting brain tumors with «Mueller Polarimetry»	France	\$35,000
2	Leon Weninger's and Daniel Truhn's team	Detecting brain tumors with polarized light	Germany	\$12,000
3	Brent Weyers's team	Detecting brain tumors with a fluorescence spectroscopy instrument (ms-TRFS)	USA	\$1,000
Finalist	Alicia Martinez-González	Detecting brain tumors using mathematical software	Spain	\$1,000
	Cliff Edwards	Detecting brain tumors by means of optical polarization tractography	Canada	\$1,000

Further information about the finalists can be found on the [HORA0 website](#).

What does HORA0 mean?

The term HORA0 originates from the Greek verb «orao». It has many inherent meanings that symbolize the complexity of the project: On the one hand, HORA0 means to see something with your eyes; on the other hand, it also means to see something with your mind. Neurosurgeons need both.

Short film presenting the HORA0 problem: <https://youtu.be/rVlulyBOL0c>

HORA0 crowdsourcing: <https://www.herox.com/HORA0>

HORA0 website: <https://www.horao.eu>

Photo of the winner:

Ivan Gusachenko from France is the winner of the scientific crowdsourcing for the Bernese HORA0 project. (Photo: Kapuly Dietrich for Insel Gruppe AG)

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