# Launch of a new global Research Centre in Switzerland

**"Swiss research institute established to focus on immune engineering and advancing global child and adolescent health."**

- The Botnar Institute of Immune Engineering (BIIE) is launching as an independent research institute in Basel/Switzerland with a mission to develop novel immune-based diagnostics and therapeutics and address gaps in advanced healthcare technologies, thus improving the health of children and young people around the globe.
- The BIIE is supported for the first 15 years by an endowment of over 1 billion USD from Fondation Botnar.
- Planned inaugural partnerships with the University of Oxford and ETH Zurich will further expand the BIIE's capacity and global reach as it develops computational tools, diagnostics, therapeutics, and preventative medicines as well as train the next generation of immune engineers.
- As a priority, BIIE program outputs will be of benefit to the health of young people in low- and middle-income countries (LMICs).

**A new independent research institute, the Botnar Institute of Immune Engineering (BIIE) is launching in Basel, Switzerland.**

The Botnar Institute of Immune Engineering (BIIE) is a newly founded non-profit research organisation focused on developing computational tools and immune-based translational solutions for the diagnosis, treatment and prevention of disease. Outstanding investigators from around the globe will be recruited to its facility in Basel, Switzerland, to form a new hub of innovation in immune engineering.

The BIIE is made possible by the generous endowment of over 1 billion USD (to be provided over 15 years) from Fondation Botnar, a Swiss philanthropic foundation working to improve the health and well-being of young people around the world.

**Strategic partnerships**

The Institute will establish strategic partnerships with internationally renowned public and private research institutions and work with philanthropic organisations that support its mission in the Global South. Inaugural strategic academic partnerships are planned with ETH Zurich, Switzerland, and the University of Oxford, UK, with additional global partners to be announced in the future.

The BIIE will move into a new purpose-built research facility in 2027. In the interim, the BIIE is planned to be hosted by the Department of Biosystems Science and Systems Engineering (D-BSSE) of ETH Zurich, a newly opened state of the art facility in Basel. The D-BSSE operates at the intersection of systems biology, bioengineering and computational biology. Prof. Christian Wolfrum, ETH Zurich VP of Research notes, "The envisaged close collaborations with the immune engineering institute in Basel will further accelerate the development of

medical solutions, and complement the goals of ETH Zurich. The planned hosting of the inaugural class of BIIE scientists in our new building in Basel is an ideal opportunity to develop a lasting partnership through joint professorships, student training programs, and shared infrastructure."

In its first international partnership, the BIIE intends to work with the University of Oxford to create the Basel-Oxford Centre of Immune Engineering, plans include professorships and student training programs as well as access to the extensive global clinical research capabilities of Oxford University. Prof. Sir Andrew Pollard, Fellow of the Royal Society and Director of Oxford's Vaccine Group stated, "Looking no further than recent events, one can see that immune engineering is a catalyst in the rapid development of globally accessible therapeutics, in particular, vaccines. Through this partnership with BIIE, Oxford researchers will benefit from vibrant collaborations that advance basic and clinical research specific to children and adolescents in low- and middle-income countries. BIIE's strengths in biocomputation and immune engineering mean this partnership will further accelerate discovery as well as the creation of safe and effective medicines for children around the world."

**Organisation, Leadership and Team**

Established to realise the vision of Fondation Botnar, the "Foundation for Immune Engineering for Global Child and Adolescent Health" (FIE) and its Board of Trustees will govern and oversee the BIIE as it grows into a vibrant Institute of up to 300 scientists and support staff.

The FIE's Board of Trustees are notable for their accomplishments in academia, biotechnology and finance. Inaugural FIE Board Chair, Dr. Dominik Escher, a molecular biologist turned biotech entrepreneur and Managing Partner at Pureos Bioventures, summarised the opportunity, "Building a critical mass of immune engineers in Basel with a shared goal of improving the health of young people globally is both inspiring and complex." Each FIE Trustee brings extensive expertise and leadership experience to the BIIE: Prof. Jennifer Cochran (Stanford University), Dr. Andrew P. May (DCVC Bio), Prof. Gunilla Karlsson Hedestam (Karolinska Institute), Prof. Folasade Tolulope Ogunsola (University of Lagos), Joe Stadler (UBS).

"In line with our mission to improve the wellbeing of young people, Fondation Botnar has made a bold investment to unlock scientific innovations specifically for the benefit of child and young people's health in low- and middle-income countries", stated Dr. Alexander Schulze, interim CEO of Fondation Botnar. "Understanding the immune system of children and young people in different parts of the world is key to developing solutions that can diagnose, prevent and treat infectious diseases and other health conditions. With this investment in an independent institute that provides cutting-edge research in immune engineering, not only we continue the Botnar family's frequent support of biomedical research, but also firmly believe to make a difference in the translation of scientific innovation into healthcare practice."

The BIIE management team is composed of scientific leaders. Prof. Sai Reddy (ETH Zurich) is planned to assume responsibilities as Scientific Director, Prof. Georg Holländer (University of Oxford, University of Basel, ETH Zurich) as the Director of Global Engagement. Dr. Stephen Wilson, the Chief Executive Officer of the BIIE (fmr. Chief Operating Officer, La Jolla Institute for Immunology, USA), said, "The BIIE will bring together a critical mass of investigators, all of whom are experts in various aspects of immune engineering; combining their strengths and

perspective should result in a sum greater than its parts. Every element of our operation will be designed to maximise collaboration, including the physical layout of the facility, which interweaves computational and experimental groups, along with frictionless access to cutting-edge instrumentation. Because we are focused on translating discoveries in the lab into real-world solutions, our researchers will enjoy tremendous latitude as well as the institutional support necessary to advance promising discoveries into clinical development."

**Immune Engineering with a Global Vision**

The emerging field of immune engineering leverages advanced technologies to understand and develop immune-based solutions for the diagnosis, prevention and treatment of diseases. Integrating expertise in immunology, molecular and cellular engineering, genomics, artificial intelligence and other computational methods enables scientists to study immune responses at an unprecedented level of detail—from how individual cells react to pathogens to how genetic diversity within populations influence such responses. The immune system has been harnessed to treat a wide array of disorders, from infectious diseases to autoimmune disease and cancers. The BIIE will focus its research efforts on developing new approaches to improve health outcomes for children and adolescents, especially those in low- and middle-income countries (LMICs), who are often the most neglected and in need.

"Global impact is only possible with genuine global engagement.", Prof. Folasade Tolulope Ogunsola, Vice Chancellor of University of Lagos and FIE Trustee said, "There are significant opportunities to elevate clinical research in the Global South if immune engineering tools are developed with specific intent; and with the establishment of the BIIE, we intend to remove barriers for research that improves the lives of children."

**One-to-one interviews:**
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