



## Conference Report

### Northwest to Southwest – The Conference Reports of the 5<sup>th</sup> and 6<sup>th</sup> Swiss Symposium in Point-of-Care Diagnostics held in MuttENZ 2022 and Sion 2023

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Biotechnet comprises several platforms including the *in vitro* diagnostics (IVD) one dedicated to fostering innovation in areas of significant growth such as point-of-care (POC) and molecular diagnostics. The platform's main event aims to promote the cross-disciplinary dialog between medical, industry, and research stakeholders and highlight recent advancements and unmet needs. After its successful 4<sup>th</sup> edition in Davos in 2021, this report summarizes the presentations given at the subsequent two symposia.

#### The 5<sup>th</sup> Swiss Symposium in Point-of-Care Diagnostics held at the FHNW campus in MuttENZ on 19/20 October 2022

The pre-event workshop on IVD regulatory requirements, organized by *Annalisa Macagno* and *Rolf Kaufmann* of Efectum Medical, took place at the GAIA Hotel in Basel. The next day, close to 200 participants gathered in the auditorium of the FHNW in MuttENZ for the main symposium day. *Falko Schlottig*, Director of the School of Life Sciences, *Deborah Strub* (Basel Chamber of Commerce), and symposium chair *Laura Suter-Dick* (FHNW) welcomed all participants and exhibitors before handing over the microphone to *Dominik Meinel* (FHNW), who moderated the Medical Session. The first talk by *Joan Montaner* (Neurovascular Research Lab and Neurology Department HVM, Seville, Spain) was on the time-critical stroke triage process in the ambulance using POCT blood biomarkers. *Leslie Fendt* (Roche) then presented a remote vision monitoring case study. *Pietro Vernazza*, former head of infectiology at the Kantonsspital St. Gallen, gave a broad and critical overview of POC diagnostics in everyday clinical practice. The first keynote lecture, entitled 'Sex and gender differences along the patient journey, a first step toward optimizing care for persons living with AD and beyond – the work of the Women's Brain Project' was given by *Antonella Santuccioni Chadha* (Women's Brain Project and Altoida) who gave many striking examples how in the past (and still today) female aspects were (are) inadequately considered in clinical studies and product development.

In the afternoon, the Industry Session, moderated by co-chair *Samantha Paoletti* (CSEM), began with a talk by *Cinzia Donato* (Scailyte) presenting a first-in-kind molecular diagnostic test for endometriosis based on biomarker discovery from single-cell RNA sequencing. *Andreea Wiese* (Roche) gave a broad overview of POC diagnostics and how it evolved into an essential toolset for modern medicine. *Christophe Verjus* (CSEM) and *Martin Batliner* (FemTec) jointly then presented the success story of the Ava fertility tracker, a wearable and AI device for personalized health monitoring.

The Research Session, moderated by co-chair *Marc Pfeifer* (HES-SO Valais-Wallis), began with a talk by *Petra Ditttrich* (ETH Zurich) on microfluidics platforms for advanced diagnostic and biomedical applications. *Alena Simalatsar* (HES-SO Valais-Wallis) continued the session with a talk presenting control strategies at the POC for propofol anaesthesia administration.



Fig. 1. Group photo with speakers and chairs (left to right, top to bottom) at the FHNW in MuttENZ: Mr. C. Verjus, CSEM; Prof. D. Meinel, FHNW; Prof. G. Abel, Lahey Hospital & Medical Center and Harvard Medical School (USA); Mr. M. Batliner, FemTec; Dr. A. Wiese, Roche Diagnostics; Prof. A. Simalatsar, HES-SO Valais-Wallis; Prof. L. Suter-Dick, FHNW; Prof. P. Vernazza, Kantonsspital St. Gallen; Prof. M. Pfeifer, HES-SO Valais-Wallis; Dr. C. Donato, Scailyte; Prof. P. Ditttrich, ETHZ; Dr. S. Paoletti, CSEM; Dr. L. Fendt, Roche; Dr. A. Santuccioni Chadha, Women's Brain Project and Altoida.  
Not in photo: Dr. J. Montaner, Neurology Department HVM, Seville (Spain).

The talk 'Rapid rule-out of preeclampsia through protein ratio analysis at the point-of-care' given jointly by *Chris Wood* (FHNW) and *Mathias Wipf* (MOMM Diagnostics) concluded the session.



Fig. 2. Lively and captivating keynote speeches by Dr. A. Santuccioni Chadha, Women's Brain Project and Altoida (left) and Prof. Gyorgy Abel, Lahey Hospital & Medical Center and Harvard Medical School.

Finally, *Gyorgy Abel*, Medical Director, Lahey Hospital & Medical Center, and Beth Israel Lahey Health, Instructor in Pathology at Harvard Medical School gave the second keynote lecture, entitled 'Global Trends in point-of-care diagnostics: new opportunities and challenges' wrapping up an informative and inspiring 5<sup>th</sup> Swiss Symposium in Point-of-Care Diagnostics.

The organizers would like to thank all speakers, moderators, poster presenters and the following sponsors and partners for their essential contributions: ABCDx, Axonlab, Basel Area, Basel Landschaft, BioAlps, biotechnet Switzerland, BÜHLMANN



Fig. 3. Information gathering and conversations at the product and technology exhibition booths in the FHNW auditorium.

Laboratories, Effectum Medical, CSEM, cytiva, Expand Healthcare Consulting, FHNW School of Life Science, HES-SO (including the Valais Health Technology Innovation Center, HTIC), Impetus, inndix, lumiraDx, Quidel, Resistell, Roche Diagnostics, Sarstedt, Siemens Healthcare, SuSoS, and Swiss Biotech Association.

Photo credits: FHNW.

### The 6<sup>th</sup> Swiss Symposium in Point-of-Care Diagnostics, held at the Energypolis campus of the HES-SO Valais-Wallis in Sion on 25/26 October 2023

The 6<sup>th</sup> symposium edition returned to its ‘birthplace’ in the Valais exactly six years after it was conceived and inaugurated in its unique format at the HES-SO Valais-Wallis Bellevue campus in Sierre in 2017.

The 1<sup>st</sup> day was chaired by *Silvia Anghel* (Veranex) and *Didier Maillefer* (HEIG-VD), comprising the Regulation Session and, for the first time, an Investment Session. *Julianne Bobela* (Veranex) started the first part with a talk on ‘*Opportunities in filling data gaps for legacy products*’. *Laura Scrivano* (TÜV SÜD Product Service) then highlighted the lessons learnt from the first conformity assessment with regards to assessing the design, usability, and performance of POC diagnostic products. *Kim Rochat* (Veranex) elaborated on interoperability and compatibility challenges, and *Iwan Märki* (Abionic) concluded with a manufacturer’s experience on the conformity assessment process under IVDR.



Fig. 4. Round table discussion: Investing in POC Diagnostics – Industry Trends and Investor Activity (left to right): Dr. A. Wiese, Roche Diagnostics; Mr. F. Gabriel, Carity; Dr. V. Zwaans, Loop Medical; and moderator Dr. B. Ricken, BÜHLMANN Laboratories.

*Benjamin Ricken* (BÜHLMANN Laboratories) introduced the panel of speakers of the Investment Session. A concrete and exciting manufacturer’s experience in the search for investment was given by Loop Medical’s COO *Vincent Zwaans*. He was joined for a round table discussion by *Andreea Wiese* (Roche Diagnostics) and *Frédéric Gabriel* (Carity), where different



Fig. 5. Group photo with speakers and chairs (top, left to right): Prof. D. Paris, Swiss TPH; Prof. J.-M. Segura, HES-SO Valais-Wallis; Dr. J. Bobela, Veranex; Dr. S. Anghel, Veranex; Prof. B. Easter, NASA and University of Colorado (USA); Dr. S. Paoletti, CSEM; Dr. R. Jäggi, Roche Diagnostics; Mr. D. Prim, HES-SO Valais-Wallis; Dr. T. Maier, AIT; Dr. A. Dumoulin, Valais Hospital, Sion; Dr. D. Migliorelli, CSEM; Mr. M. Wüthrich, Evoleen; (bottom, left to right): Prof. A. Kuhn, HES-SO Valais-Wallis; Prof. D. Maillefer, HEIG-VD; Prof. M. Pfeifer, HES-SO Valais-Wallis; Dr. J. Kuligowski, Health Research Institute La Fe; Dr. L. Burr, CSEM; Dr. C. Mestriner, WAMA Diagnostics; and Prof. A. Simalatsar, HES-SO Valais-Wallis. Not in photo: Dr. L. Scrivano, TÜV SÜD Product Service; Dr. A. Wiese, Roche Diagnostics; Dr. V. Zwaans, Loop Medical; Dr. I. Märki, Abionic; Mr. K. Rochat, Veranex; Dr. B. Ricken, BÜHLMANN Laboratories; Dr. B. Schmid, KSA; Dr. Y. Müller, Unisanté; Dr. P. Métrailler, Air Glaciers; Mr. F. Gabriel, Carity; Mr. P. Ducrest, GaDia Diagnostics; Prof. B. Schnyder, HES-SO Valais-Wallis.

industry trends and investor activities were analyzed. After a networking apéro at the HES-SO campus, many speakers and participants met again for dinner at the Brasserie La Glacière for further engaging conversations.

The Medical Needs Session of the 2<sup>nd</sup> day, moderated by *Daniel Paris* (Swiss Tropical and Public Health Institute), kicked off with a talk by *Yolanda Müller* (Unisanté, University of Lausanne) on real-world implementation challenges of POC tests in Swiss primary care. In her presentation, *Bettina Schmid* (Kantonsspital Aarau) analyzed the opportunities and challenges of POCT ISO 15189 accreditation in a hospital setting. Decentralized testing is also an important topic in mountain emergency medicine, as highlighted by the head of the rescue service of Air Glaciers, *Pierre Métraller*. In the final presentation before the lunch break and the Exhibition & Poster session, *Alexandre Kuhn* (HES-SO Valais-Wallis) showed how Nanopore sequencing is increasingly important in clinical genetic testing and POC diagnostics.

In the afternoon Product Innovation Session, chaired by *Rainer Jäggi* (Roche Diagnostics), *Frédéric Gabriel* (Carity) and *Marcel Wüthrich* (Evoleen) jointly presented their approach to help closing the gaps of a fragmented patient's rehabilitation journey after a heart attack. Two short talks followed by *Carlos Mestriner* (WAMA Diagnostics) on a novel multiplex immunoassay for the screening of transfusion-transmissible infections and *Percevent Ducrest* (Gadia Diagnostics) on a rapid and easy test to improve the management of cervical cancer.

In the Research Session moderated by *Jean-Manuel Segura* (HES-SO Valais-Wallis), *Alexis Dumoulin* (Valais Hospital Central Institute) emphasized the role of POCT in microbiology diagnostics in Switzerland. The various benefits of an electrochemical read-out, *i.e.* quantification, in lateral flow rapid tests, were presented by *Thomas Maier* from the Austrian Institute of Technology (AIT). The tandem talk by *Julia Kuligowski* (Health Research Institute Hospital La Fe, Spain) and *Davide Migliorelli* (CSEM) focused on advancing urinary health monitoring based on fact-based nutrition for infants and lactating mothers.



Fig. 6. More than twenty diagnostic, biotechnology, and life science companies and institutions exhibited innovative POC diagnostic products and novel technologies at the venue in Sion. Here Dr. A. Frutiger is showcasing the focal Molography technology to interested participants.

Decentralized testing cannot be much more 'decentralized' when it comes to analysing human samples in outer space and on other planets of our solar system. It is surely the ultimate device design and development challenge considering the power consumption, cargo weight, consumable supply as well as instrument performance and reliability constraints. 'NASA has identi-

fied point-of-care medical diagnostic technology as a critical need for future human space exploration to enable diagnosis, monitoring, and treatment of spaceflight medical conditions', explained *Benjamin Easter* (NASA and University of Colorado School of Medicine, USA) in his captivating keynote lecture 'Where is the Star Trek Sick Bay?: Maximizing Astronaut Health and Performance for Exploration Spaceflight Missions'.



Fig. 7. Prof. Benjamin Easter from NASA and the University of Colorado (USA) during his enthralling keynote speech 'Where is the Star Trek Sick Bay?: Maximizing Astronaut Health and Performance for Exploration Spaceflight Missions' at the crowded HES-SO Valais-Wallis auditorium in Sion.

He presented the numerous hazards of human spaceflight and health issues that astronauts may encounter and how commercially available lab analysis equipment was adapted and then tested in the earth's orbit. For NASA's Artemis (lunar) mission or for even more distant space explorations in the future, self-sustainability will be crucial, and consumable resupply will be impossible.



Fig. 8. Star Trek vs reality: Prof. B. Easter describing the situation, for instance, on the ISS with limited analytical, *i.e.* POC diagnostic and imaging, capabilities. Phlebotomy in zero gravity: Astronauts have limited medical training, and crew members are rarely physicians.

Overall, the 6<sup>th</sup> Swiss Symposium in Point-of-Care Diagnostic, co-chaired by *Marc Pfeifer* (HES-SO Valais-Wallis) and *Samantha Paoletti* (CSEM), was a great success, having attracted more than 160 scientists, medical and business professionals as well as students.



Fig. 9. The chair of the scientific poster jury, Prof. Bruno Schnyder (HES-SO Valais-Wallis), handing over the symposium Best Poster Award to Mr. Gabriel Mattos from the University of Geneva.

The organizing committee under the leadership of *Denis Prim* (HES-SO Valais-Wallis) gratefully acknowledges all speakers, moderators, the poster jury and the sponsorship and support from Axonlab, BioAlps, bioArk, biotechnet Switzerland, Blitz Diagnostics, BÜHLMANN Laboratories, Cepheid, CSEM, Curio Biotech, Expand Healthcare Consulting, FHNW School of Life Science, Gadia Diagnostics, Hamamatsu, HES-SO (including the Valais Health Technology Innovation Center, HTIC), Integrated Graphene, lino Biotech, microqubic, MOD1, PalmSens, QuidelOrtho, Roche Diagnostics, Sarstedt, Siemens Healthcare, Sino Biological, Spindiag, Valmonas, Veranex (Medidee), WAMA Diagnostics, and Yoni Solutions.

Photo credits: Laurent Darbellay (HES-SO Valais-Wallis).

On 4<sup>th</sup> October 2024, the conference series will take us back to the Northeast, specifically to the Technopark in Zurich, for the 7<sup>th</sup> instalment of this annual symposium. Don't miss it! [www.pocdx.ch](http://www.pocdx.ch)

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Fig. 10. Happy participants of the 6<sup>th</sup> Swiss Symposium in Point-of-Care Diagnostics at the Energypolis campus of HES-SO Valais' School of Engineering in Sion.