

14th Swiss Pharma Science Day 2021

CONFERENCE REPORT

Prof. Dr. Rudolf Brenneisen, Secretary General SAPhS
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The SPhSD 2021 was held virtually due to the COVID-19 pandemic. With this year's focus on «Precision Medicine» the Pharma Science Day again attracted with more than 150 registrations many science enthusiasts from the pharmaceutical community. Four keynote speakers with different backgrounds presented their contributions and perspectives to this topic. In between the lecture sessions, e-posters were exhibited online, and over a simple chat tool the visitors could interact with the authors. As in the previous years, the submission of a poster was not only an opportunity for young scientists to present their work but also to win one of the six sponsored poster prizes. For the first time, the afternoon session included a platform for SAPhS partner associations, which were the Swiss Society of Industrial Pharmacists (SSIP/GSIA/SSPI), Swiss Association of Public Health Administration and Hospital Pharmacists (GSASA) and Swiss Young Pharmacists Group (swissYPG). The [evaluation](#) of the FPH-(public, hospital and clinical pharmacy) accredited online event showed an average overall rating of 3.5 (max. 4) and 3.8 for organization, IT support and management.

A retrospect of the Online SPhSD 2021 can be found at the [SAPhW website](#). It includes the conference booklet - with speaker infos, lecture and poster abstracts, sponsors - a videostream covering the whole event, welcome addresses, all pre-recorded lectures and platform presentations, e-poster gallery as well as evaluation results.

Morning Session – Welcome Addresses and Lectures 1-2

Prof. Gerrit Borchard, President of the Swiss Academy of Pharmaceutical Sciences (SAPhS), opened the 14th SPhSD followed by a **welcome address of Prof. Christian Leumann**, Rector of the University of Bern and SAPhS Fellow. Christian Leumann mentioned the newly established pharmacy curriculum at the University of Bern, the importance of education in medical sciences and especially the new Bernese Center for Precision Medicine BCPM.

The morning session was then moderated by Gerrit Borchard. He introduced the first keynote speaker **Prof. Serena Nik-Zainal**, MD, University of Cambridge. Her presentation was entitled «**Accelerating Holistic Cancer Genome Interpretation Towards the Clinic**». Serena Nik-Zainal did her PhD in the Wellcome Sanger Institute (WSI) exploring breast cancer using whole genome sequencing. In 2014 she joined the WSI faculty team and continued to develop expertise in analysis and interpretation of whole genome sequencing tumors. Now she is working at the University of Cambridge (UK) as an advanced clinical scientist in order to accelerate the translation of genomics expertise towards clinical application.

Serena Nik-Zainal highlighted that the totality of mutagenesis gives us additional information in every person's cancer. Apart from certain driver mutations, there are thousands of passenger mutations that produce patterns which are called mutation signatures. Such mutations can be detected computationally

and give an insight into biological processes that have contributed to tumorigenesis. Clinical algorithms such as HRDetect can and will continue to be developed to help interpret cancer genomes and thus improve the outcome of the therapy. She illustrated the importance of including holistic genome interpretation in a case study including a melanoma patient.

The second speaker was **Prof. Olav Lapaire**, MD from the University Hospital Basel. His talk was on «**Personalized Medicine in Women**». Olav Lapaire finished his doctorate in 1997 at the University of Basel. After receiving the «Facharzt» in gynecology and birth help in 2004 he started as a post-doctoral fellow in the Tufts-New England Medical Center in Boston. He habilitated in obstetrics and gynecology in 2008 and received a professorship at the University Hospital Basel in 2015.

In his talk Olav Lapaire highlighted the importance of personalized medicine in pregnant women. The aim of such personalization is to identify the right dose of the right drug for the right patient at the right time. Since the field of personalized medicine is rapidly evolving, it is presenting promising opportunities for better patient care in obstetrics. He emphasized that personalized medicine is multifaceted and should include genetic, historical and environmental factors. With the help of next generation sequencing and genome wide association studies, such genetic factors can be identified. In an example he illustrated how the metabolism of a pregnant women changes during pregnancy and that personalized medicine is required to understand how to best manage drug therapy in pregnant women.

e-Poster Session

Over an extended lunch break the participants had the chance to virtually visit the e-poster gallery and interact with the presenting authors. Despite corona restrictions limiting lab work and research activities 40 posters were submitted in different topic categories, reflecting the wide field of pharmaceutical research. For e-posters see the [web gallery](#), for corresponding abstracts the [conference booklet](#) (pp. 20-66).

Afternoon Session – Platform Partner Associations, Award Ceremony and Lectures 3-4

The afternoon session was opened and moderated by Prof. Christoph R. Meier, University of Basel and member of the senate's board of SPhS. He announced the **platform for SPhS partner associations** allowing to introduce themselves to the participants, followed by Q & A. Dr. Kathrin Ahrens, member of the board of the Swiss Society of Industrial Pharmacists (SSIP/GSIA/SSPI), talked about the work and engagement of GSIA, followed by Sara Iten, CEO of the Swiss Association of Public Health Administration and Hospital Pharmacists (GSASA), and last but not least Dr. Andreas Schittny from the Swiss Young Pharmacists Group (swissYPG).

Before starting with the last two lectures, the highly anticipated **award ceremony** was moderated by Gerrit Borchard. He opened the ceremony by announcing the **SPhS Fellows 2020 and 2021**. **Prof. Verena Schröder** from the University of Bern received the Fellowship 2020 for «Her merits and efforts to re-establish and fully upgrade the Pharmacy studies at the University of Bern». **Prof. Kurt Hoststettmann** from the University of Geneva was awarded the 2021 SPhS Fellowship «For his merits and efforts in fostering pharmaceutical sciences in research and education, particularly pharmacognosy and phytochemistry».

The award ceremony continued by announcing the six **poster prizes** for outstanding presentations. Evaluation criteria for the reviewer board were: project objectives and innovation, methods, results, conclusion vs. data, overall scientific value and relevance, presentation and graphics. This year the prizes were again sponsored by AKB Foundation, GSIA Foundation, Pharmaceutical Society of Zurich, Vifor Pharma, Max Zeller Söhne AG, and Glatt Group.

The **first prize**, sponsored by the AKB Foundation, was awarded to **Alexandre Porcello et al.**, University of Geneva (group Prof. Allémann), for P-II-8 entitled «Thermoresponsive hyaluronan-based hydrogels for the formulation of standardized transplants in tendon regenerative medicine».

The **second prize**, sponsored by the GSIA Foundation, was awarded to **Dr. Andreas Schittny et al.**, University of Basel (group Prof. Huwyler), for P-II-2 entitled «Drug delivery by amorphous solid dispersions: A randomized pharmacokinetic study in humans».

The **third prize**, sponsored by the Pharmaceutical Society of Zurich (PharmGZ), was awarded to **Besmira Sabani et al.**, Zurich University of Applied Sciences ZHAW (group Prof. Lehmann), for P-VIII-5 entitled «A novel and flexible strategy to functionalize extracellular vesicles for targeted tumor therapy».

The **special prize**, sponsored by Vifor Pharma, was awarded to **Carla Plüss et al.**, University of Basel (group Prof. Ricklin), for P-V-1 entitled «Establishing a screening platform for the biological evaluation and modulation of complement-related integrin receptors».

The prize for the **best poster in Pharmaceutical Biology/Phytopharmacology**, sponsored by Max Zeller Söhne AG, was awarded to **Dr. Karin Brecht Brünger et al.**, University of Basel (group Prof. Meyer zu Schwabedissen), for P-I-3 entitled «Impact of *Petasites hybridus* extract Ze 339 on intestinal handling of histamine».

The prize for the **best poster in Pharmaceutical Technology**, sponsored by the Glatt Group, was awarded to **Fatma Abdi et al.**, ETH Zurich (group Prof. Leroux), for P-II-12 entitled «Colonic capsules for bacterial suspensions».

For fellows and prizes see [award gallery](#).

The afternoon session continued with the third lecture given by **Prof. Hans Leuenberger** from the University of Florida. His talk was on «**Spray Freeze-Drying for Precision Medicine & Vaccines**». Hans Leuenberger finished his PhD in nuclear physics at the University of Basel. After working 12 years at Sandoz he became a full professor of Pharmaceutical Technology at the University of Basel in 1982.

Hans Leuenberger illustrated the potential of spray freeze-drying and how it could be applied to highly potent drugs and vaccine development. This semi-continuous process leads to the formation of solid microspheres which increase the drug solubility. This process is suited for formulating poorly water-soluble as well as thermo-sensitive drugs, such as monoclonal antibodies and vaccines. He showed in a practical example how this process was successfully commercialized. A novel technology like that in combination with a double chamber syringe could enable the formulation and storage of vaccines at room temperature.

The fourth and last lecture, entitled «**Precision Oncology Approaches to Understanding Therapy Resistance**», was held by **Prof. Mark A. Rubin**, University of Bern. Mark Rubin completed his clinical education at the Georgetown University Medical Center in Washington as well as at the Johns Hopkins Hospital in Baltimore. After working at the University of Michigan as an assistant professor he became a full professor in 2007 for oncology at the Cornell University in New York. Later he founded the England Institute for precision medicine and more recently, the Bern Center for Precision Medicine (BCPM). Since 2017 he is a full professor at the University of Bern and director of the Dep. for BioMedical Research (DBMR).

He explained that prostate cancer cell resistance opposes a big problem. Over time, mutations can change and result in different drug susceptibilities. The reasons are the different underlying pathways. With the help of whole exon sequencing and RNA sequencing he showed that in case of prostate cancer the mutation spectrum changes during different treatment stages. Thus, it is of high importance to utilize precision medicine in oncology. Such strategies will help identifying the patients with their special mutations, which then significantly supports the choice of therapy and outcome. Prostate cancer is especially challenging since it has a large heterogeneity.

Closing Remarks, Acknowledgements and Save-the-Date

Before closing the 14th SPhSD the organizers Gerrit Borchard and Rudolf Brenneisen addressed their thanks to participants, speakers, platform presenters, chairs, poster authors, poster reviewers, and last but not least especially to the co-organizer and IT-supporter Congrex Switzerland and to sponsors, without their technical and financial support the online SPhSD 2021 could not have been realized.

Everybody is welcome to participate in the **15th SPhSD 2022**, which will hopefully take place in the presence mode and at the traditional locations University Hospital-Inselspital Bern and House of University of Bern.

- **Please already save the date Wednesday 24 August 2022**
- **Topic «Immunology»**

(to be confirmed)

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