



16th Swiss Pharma Science Day 2023

CONFERENCE REPORT

Prof. Dr. Rudolf Brenneisen, Secretary General SAPhS
Dr. Andreas Schittny, Board Member SAPhS

On Saturday September 23, 120 participants showed up at the front desk of Hörraumgebäude 6 located on the Von Roll Campus of the University of Bern to attend the 16th SPhSD, a FPH-certified conference. Five distinguished speakers with different clinical, industrial, or governmental backgrounds presented their research and perspectives to this year's conference topic «Antibiotics». In between the lecture sessions, 45 posters were exhibited by young scientists debating exciting data from the main pharmaceutical research areas. A total of 6 posters could be awarded one of the appreciated sponsored poster prizes. As for the first time in 2019, the afternoon session included 15-min oral presentations of 3 selected poster abstracts, offering young scientists the opportunity to also present their work in the lecture hall. A retrospect of the SPhSD 2023 can be found at the [SAPhW website](#).



Morning Session – Welcome Addresses and Lectures 1-2

Prof. Ursula von Mandach (photos 1 & 2) and **Prof. Verena Schröder** (2, sitting in the first row), SAPHs Co-Presidents, opened the 16th SPhSD and welcomed colleagues from universities, hospitals, industry, authorities as well as professional associations and societies.



(1)



(2)

The morning session was chaired by **Prof. Klaus Eyer** (3), ETH Zurich, SAPHs board member. He introduced the first speaker **Prof. Dr. med. Annette Kuhn** (4), Woman Hospital, University Hospital Inselspital Bern, talking about «Antibiotics in Clinical Practice - Urogynecology».

Summary:

Urinary tract infections are a considerable patient burden and with that generate relevant negative economic effects. In the treatment of urinary tract infections, there is a clear correlation between antibiotic use and resistance. In most countries, antibiotic resistance increases, and according to estimations of the WHO more people could die of antibiotic resistance than of cancer in the future. Measures to reduce antibiotic use in urinary tract infections include avoiding prophylactic antibiotics whenever possible, wait with the use of antibiotics and observe the course of the infection, application of local estrogens to reduce vaginal atrophy, the use of plant-based as well as antiphlogistic drugs, vaccinations, or lifestyle adaptations. Furthermore, screening for urinary tract infections is not recommended in patients without symptoms.

Her biosketch and lecture abstract can be found on pp.-7-8 of the [Conference Booklet](#).



(3)



(4)

The second speaker was **Dr. Laurenz Kellenberger** (5 & 6), CSO of Basilea Pharmaceutica International Ltd, Allschwil, discussing «Developing New Antibiotics – Challenges and Opportunities».

Summary:

Currently, most infections can be successfully treated, but new antibiotics are needed to avoid future health risks due to resistances. Solutions to this challenge include not only new antibiotics, but a combination of measures, such as antibiotic stewardship with better diagnostics of antibiotics sensitivity of the pathogen. The development of new antibiotics raises scientific and economic challenges. Scientifically, even though

the need for new classes of antibiotics is high, there is currently no generalizable solution in sight that could address antibiotic resistances. A common approach is still to develop drugs for individual pathogens. Clinical development is challenging as large and therefore expensive non-inferiority registrational studies are necessary. At the same time, from an economical perspective, there is a poor basis for price negotiations, and new drugs are normally used in reserve, reducing their market size. Governments have recognized the problem and established push and pull incentives.

His biosketch and abstract can be found on p. 9 of the Conference Booklet.



(5)

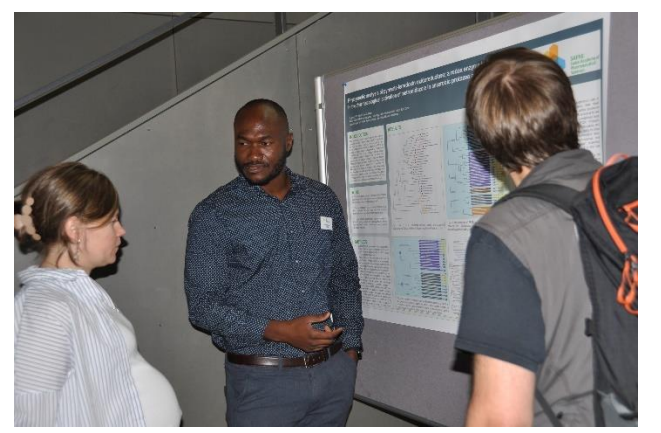
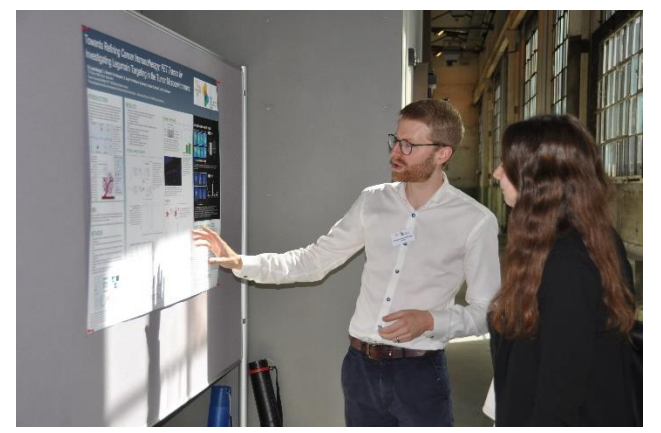
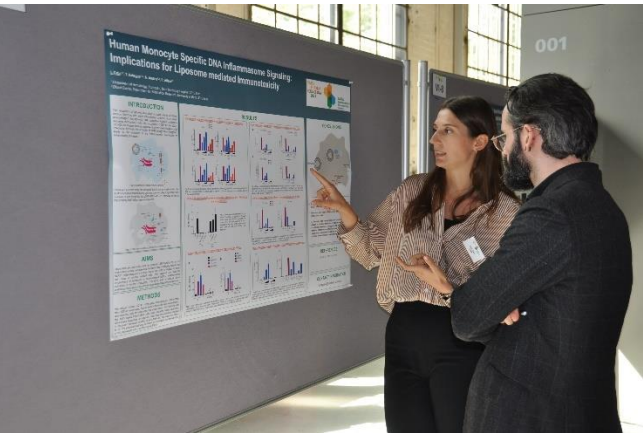
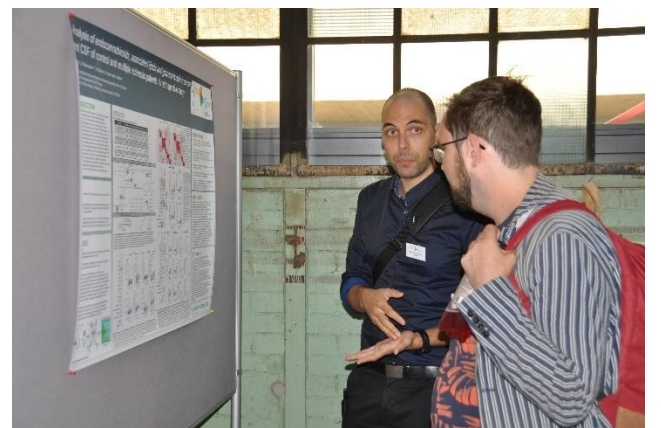
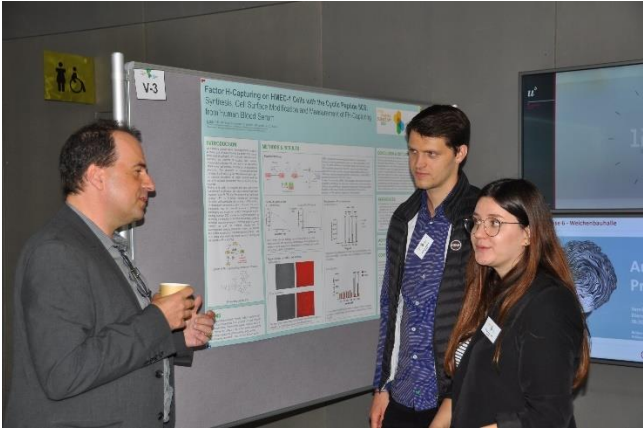
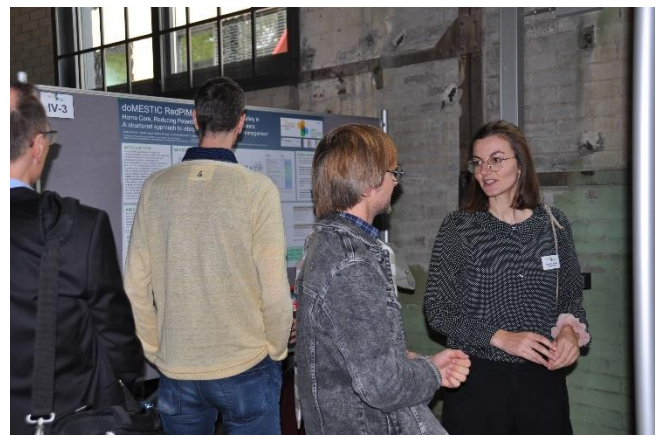


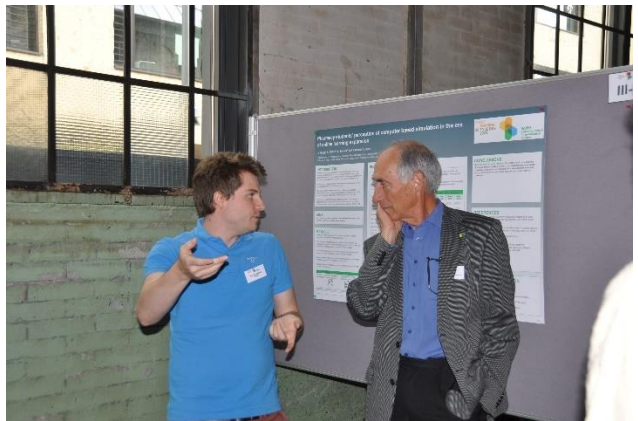
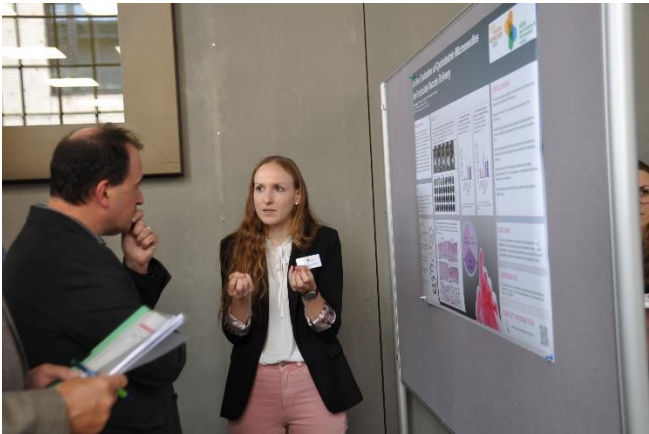
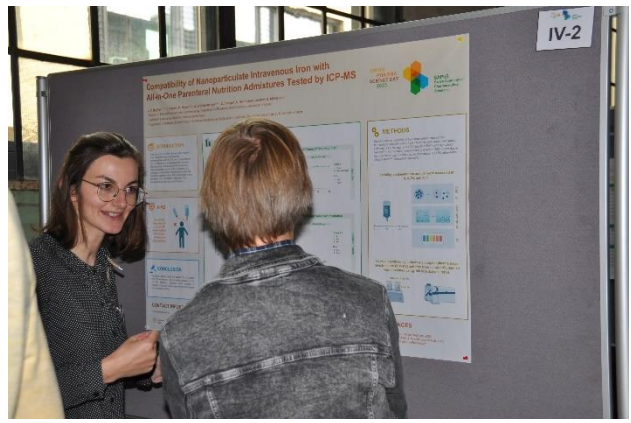
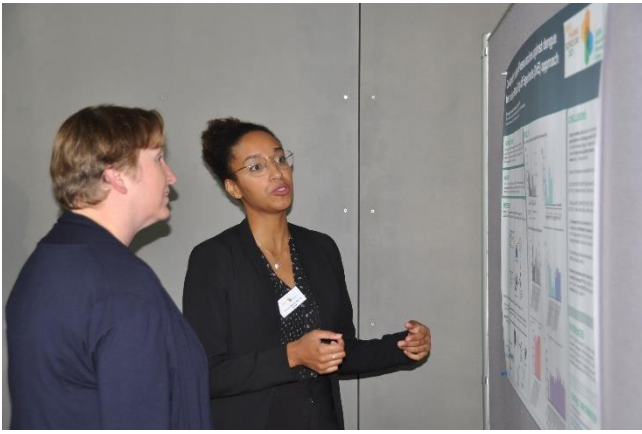
(6)

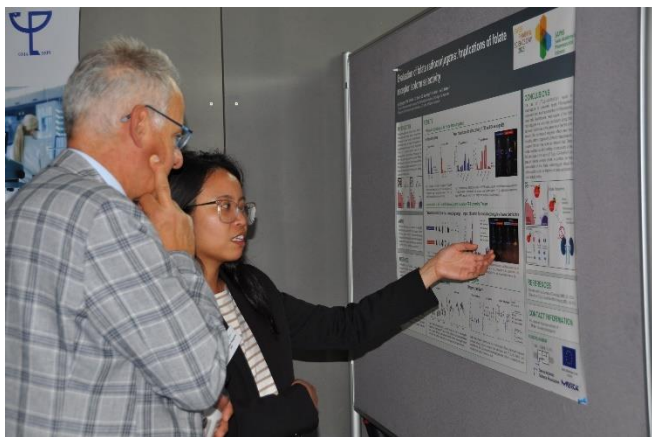
Lunch Break and Poster Session

Over an extended lunch break with an excellent buffet, prepared by the local ZFV mensa, the participants had the opportunity to socialize, network, visit the poster exhibition and interact with the presenting poster authors in different topic categories, reflecting the wide and challenging field of pharmaceutical research. The 45 posters were classified in the following 6 categories: Pharmaceutical Biology & Phytopharmacology, Pharmaceutical Technology, Pharmacoepidemiology, Clinical Pharmacy & Clinical Pharmacology, Molecular Pharmacology & Molecular Medicine, and Pharmacology & Biopharmacy. For poster abstracts see pp. 14-68 of the conference booklet.









Afternoon Session – Short Oral Presentations, Lectures 3-5 and Award Ceremony

The afternoon session was chaired by **Prof. Matthias Hamburger**, board member of SAPHs. In the 45-min session «Oral Presentations – Selected Abstracts» 3 poster presenters, selected by the reviewer board, were offered a platform to discuss their excellent work in the audience hall. The speakers and their presentations were:

Stephanie Vogt (7), University of Basel: «Structure-guided design of derivatives of the complement inhibitor compstatin with improved species specificity profiles» (P-V-2).

Compstatin is a complement inhibitor that is effective in humans and non-human primates only. Therefore, compstatin cannot be studied in common animal models. Based on phage display studies and structure-guided rational design, a compstatin derivative that is active in rodents is being developed. In future, this compstatin derivative could be used for research purposes.

Viorica Patrulea (8), University of Geneva: «Chitosan-based chemical platforms for launching antimicrobial peptides against ESKAPE pathogens» (P-II-9).

Wound infections are an increasing health issue due to increased antibiotic resistance. Antimicrobial peptides are promising substances to address the problem but suffer from several shortcomings. The successful coupling of antimicrobial peptides to chitosan is a promising approach to address these issues. It could be shown that these conjugates reduced cytotoxicity and hemolysis, and increased bioactivity. The developed substances are promising candidates for wound treatment.

Daniel Batora (9), University of Bern: «Combined targeted metabolomics and enzyme activity profiles reveal novel disease mechanisms of the symptomatology in hypercalcemia patients» (P-IV-10).

Biomarkers are essential as predictors for diseases and complications. The discovery of true correlations, however, is challenging given that relevant fraction of correlations observed by current methods could be coincidences, potentially leading to false discoveries. On the example of enzyme-activity fingerprints in correlation to hypocalcemia in patients who underwent parathyroidectomy, it was possible to develop a methodological framework based on the Random Matrix Theory, that filters random components from the observed signals.



(7)



(8)



(9)

The following lecture 3 was given by **Dr. med. Malte Kohns** (10, right; left Monika Schäublin, in the centre Isabelle Frey-Wagner), University Children's Hospital (UKBB) Basel. He was talking about «Optimal Use of Antibiotics in Children».

Summary:

Antibiotic stewardship is complex and involves many stakeholders and processes. One focus in antibiotic stewardship is the optimal prescribing of antibiotics. Optimal prescribing can improve clinical outcomes by limiting negative effects and increasing effectiveness. A key concept for antibiotic prescribing is the «Five Ds»: Right disease, right drug, right dose, right delivery, and right duration of treatment. For example, it was shown, that shorter periods of antibiotic treatment showed no inferiority compared to longer treatment. In addition, in delayed prescribing schemes, much less antibiotics were used in the end. With respect to pediatric use of antibiotics, the occurrence of pathogens highly depends on age. In addition, dosing recommendations for antibiotic use in children vary tremendously across countries and institutions. An ongoing international project therefore aims to establish consolidated dosing recommendations based on allometric scaling and pharmacokinetic calculations from adult dosing recommendations.

His biosketch and abstract can be found on p. 10 of the Conference Booklet.



(10)

The next speaker of the afternoon session was **PD Dr. Isabelle Frey-Wagner** (11), University of Zurich, Institute for Medical Microbiology, with her lecture entitled «Antibiotics and Microbiome».

Summary:

The gut microbiome varies over gut region, age and living environment, e.g. rural compared to more industrialized settings. Gut microbiota are essential for our health and are a key site for metabolism of indigestible carbohydrates, phytochemicals, proteins, lipids etc. In addition, the microbiota has important functions in immune mechanisms, for example colonization resistance. The gut microbiome is sensitive to medication and host blood parameters, but these factors can only explain a small part of the observed

variability. Besides antibiotics, including intravenously administered antibiotics, also laxatives, proton-pump inhibitors, antidiabetics, antipsychotics, and NSAIDs are known to impact the composition of the microbiome. During antibiotic treatment, the diversity of the gut microbiota is reduced and species composition is altered. Recovery of the microbiota after antibiotic treatment is highly individual, ranging from fast recoveries up to the absence of recovery in some patients. However, there is only little data available on the health impact of different recoveries. A key complication is linked to infections with *Clostridium difficile*, which mainly results out of antibiotic treatment.

Her biosketch and abstract can be found on p. 11-12 of the Conference Booklet.



(11)

Last but not least, **Monika Schäublin** (12), Federal Office for National Economic Supply (FONES, BWL) was addressing the «Supply of Antibiotics».

Summary:

Drug shortages are an international problem, and antibiotics are a frequent class of medication in the drug shortage statistics. According to Swiss law, the pharmaceutical industry is responsible for the supply with drugs. The state has only the competence to act in a subsidiary manner if a life-threatening shortage evolves that cannot be addressed by the industry. The Swiss Confederation coordinates minimal emergency stocks in a cooperation with private partners. The crisis management foresees different escalation steps, from supply through compensation for the missing products up to restrictions in supply. Certain active ingredients are under obligation of notification, resulting in an early alert reporting system. Over recent years, all producers of antibiotic drugs stopped production activities in Switzerland, resulting in a limited availability, e.g., in a pandemic. In addition, every year some antibiotic medications are withdrawn from the market. To address upcoming issues, current projects are extensions of the reporting obligations, digitalization of the reporting, revisions of the processes, and the extension of the stocks.

Her biosketch and abstract can be found on p. 13 of the Conference Booklet.



(12)

After the well-deserved short coffee break the 16th SPhSD ended with the award ceremonies, chaired by the SAPHs Co-Presidents Proffs. Ursula von Mandach and Verena Schröder.

Dr. Stephan Buchmann (13 & 14) was awarded **SAPHs Fellow 2023** for «For fostering industrial pharmacy, his merits in the pharmaceutical industry, his generous support of the Swiss Pharma Science Day for many years, and the constant and fruitful collaboration with the Swiss Academy of Pharmaceutical Sciences.»



(13)



(14)

The award ceremony continued with the 6 poster prizes for outstanding research work. Evaluation criteria used by 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 the 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 **Viorica Patrulea** (15), University of Geneva, for poster II-9 entitled «Chitosan-based chemical platforms for launching antimicrobial peptides against ESKAPE pathogens».

The **Second Prize**, sponsored by the GSIA Foundation and handed over by its President Frédéric Zwahlen, was awarded to **Aline Linder** (16), ETH Zurich, for poster VI-6 entitled «Measuring cytokine-secretion dynamics of single cells to deepen the understanding of systemic autoinflammatory diseases».

The **Third Prize**, sponsored by the Pharmaceutical Society of Zurich (PharmGZ) was awarded to **Marianna Carone** (17), University of Bern, for poster II-7 entitled «Temperature-triggered in situ forming lipid mesophase gel for local treatment of ulcerative colitis».

The **Special Prize**, sponsored by Vifor Pharma, was awarded to **Silvana Geisshüsler** (18), ETH Zurich, for poster II-8, entitled «In vivo evaluation of cyclodextrin microneedles for particulate vaccine delivery».

The prize for the **best poster in Pharmaceutical Biology and Phytopharmacology**, sponsored by Max Zeller Söhne AG, was awarded to **Maria Karpouchtsi** (19), University of Basel, for poster I-1 entitled «Novel inhibitors targeting oncogenic ERK and AKT signaling in melanoma: From compound library screening to target identification».

The prize for the **best poster in Pharmaceutical Technology**, sponsored by the Glatt Group, was awarded to **Fatma Abdi** (20, middle), University of Basel, for poster II-1 entitled «Colonic delivery of aqueous formulations using 3D printed capsules».

For poster prize winners and abstracts, please also refer to the [SAPhW website](#) for more information.



(15)



(16)



(17)



(18)



(19)



(20)

Closing Remarks and Acknowledgements

By closing the 16th SPhSD Prof. Rudolf Brenneisen addressed thanks, also on behalf of the whole organizing committee, to the sponsors (listed on p. 12) for generously supporting the SPhSD, the participants for once more coming to Bern, the speakers for their excellent presentations, the chairs, the members of the abstract and poster reviewer board, his wife Francesca Vollenweider and Stadtgrün Bern for preparing the gorgeous bouquets and arrangements of flowers, all colleagues of the SAPHs senate's board who assisted in the realization of the SPhSD 2023, and last but not least, the staff of the Von Roll Campus for the excellent catering and technical support.

The 16th SPhSD 2023 ended with the traditional farewell apéro, allowing to wrap-up challenging lectures and stimulating posters, socializing, and professional networking, one of the main goals of the SPhSD.

Everybody is cordially invited to participate in the **17th SPhSD 2024**, which will be held again at the Von Roll Campus of the University of Bern. **We hope to see you all again!**

Bern, in October 2023

Comments, suggestions, questions to:

Rudolf Brenneisen, Prof., PhD
Secretary General SAPHs
Frikartweg 9A, 3006 Bern
info@saphw.ch

Fotos:

Georgios Imanidis
Rudolf Brenneisen
@SAPHs

Sponsors

pharmaSuisse
Platin Sponsor
For organization



**AKB-Stiftung zur Förderung des
Pharmazeutischen Nachwuchses**
Gold Sponsor
For 1st poster prize and lecture 3 and 5



**Stiftung der Gesellschaft Schweizer
Industriepothenker (GSIA)**
Gold Sponsor
For 2nd poster prize and organization



Vifor Pharma
Silver Sponsor
For special poster prize and program



Max Zeller Söhne AG
Silver Sponsor
For best poster in Pharm. Biology/Phytomedicine
and program



Debiopharm International SA
Silver Sponsor
For program



Pharmazeutische Gesellschaft Zürich
Bronze Sponsor
For 3rd poster prize



Glatt Group
Bronze Sponsor
For best poster in Pharm. Technology

