2021
Faces of Industrial Research symposium
Booklet

FIR 2021

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online event

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PROGRAM

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My way

Prof.Dr. Gerrit Borchard

Professor in Biopharmaceutics at University of Geneva

Equipped with a genuine interest in science since childhood, impressed by my attending to handicapped and terminally ill patients during my civil service I chose the combination and decided to study pharmaceutical sciences. Rising through the ranks from PhD student, through post-doc, senior lecturer, tenure-track assistant and finally associate professor at three European and one US university, I got headhunted for the position of vice president research for a biotech company. Regarding this as an additional experience and frustrated by a lack of career perspectives at my home institution I accepted their offer and moved to industry at the age of 40. I moved back to Europe and academia after major reorganisations had taken place at my company, which I could not fully support. For the last 15 years I have been working as a Full Professor in Biopharmaceutical Sciences, focusing on the development of nanomedicines and vaccines as well as molecular biopharmaceutics.

Physiologically based Biopharmaceutics modeling (PBBM) beyond oral route of administration

Dr. Ivana Tomić

Biopharmaceutics Expert at Novartis

Ivana Tomic is pharmacist by training and joined Novartis in 2013 as master student in pharmaceutical engineering. Upon finalization of master traineeship, Ivana remained in Novartis as PhD student working on development of accelerated biopredicive dissolution method for long acting injectable microspheres, in collaboration with the University of Clermont-Ferrand (France). The experience of industrial PhD contract and transition to permanent contract will be shared in the presentation. In the period 2017-2019 she is formulation project leader in Pharmaceutical development unit for inhaled dosage forms, allowing her to expand knowledge to other dosage forms and routes of administration. Since 2019, Ivana is supporting early and late development phase projects in Novartis Technical development as biopharmaceutics expert performing PBBM and acting as bridge between chemists, formulation experts, pharmacokinetic scientists and clinicians. The ultimate goal of this role is supporting compound selection, formulation and process development towards desired clinical response in the area of non-oral routes of administration. Few case studies will be shared and discussed to demonstrate the expertise required and challenges to overcome in order to understand the influence of formulation properties and complex physiological environments for successful prediction of clinical outcome.

Expert career path at Nestlé R&D

Dr. Christoph Hartmann

Head of Academic Alliances at Nestlé

Christoph holds a degree in mechanical engineering and a PhD in Computational Fluid Dynamics. He worked for two years in the automotive industry developing computational mechanics methods for car-crash and occupant safety simulation. In 1998 he returned to academia at Technische Universität München, where he started to introduce computational methods for heat and mass-transfer simulation in food engineering. He developed this field and broadened his range of activities towards biomechanics of micro-organisms and later of human mastication. He was appointed Associate Professor at Technische Universität München in 2004, and full professor at the German University in Cairo in 2005. Christoph joined Nestlé in 2006, studying biophysics of in-mouth food breakdown. From 2012, he set up the Nestlé Food Safety Institute in Beijing, and, in 2016, took over the Consumer Science department in Nestlé Research. Since October 2018, Christoph leads Academic Alliances and Expertise Development. He has global responsibility for strategic academic partnerships, internal expert networks, and subject matter expert career development. In Nov 2019, he was appointed Honorary Professor at Technische Universität Berlin, and is affiliated to the Institut für Lebensmitteltechnologie und Lebensmittelchemie.

The Beacon optofluidic system – can it revolutionize cell line construction?

Dr. Sandra Bosshard
Senior Scientist at Lonza

Sandra obtained a Bachelor in Biology from the University of Zurich. She then moved to the French-speaking part of Switzerland and completed her studies with a PhD in Life Sciences at the University of Lausanne. For her PhD, she joined the Institute of Biotechnology, where she had the opportunity to collaborate with a Biotech company specialized in the engineering of cell lines for biopharmaceutical production. Since July 2019, Sandra works as a Senior Scientist in Cell Culture Development at Lonza in Visp. In this function, she develops novel mammalian upstream processes and executes cell line construction projects. Moreover, she acts as a project lead for the process development department. During her talk, Sandra will share an example of a current implementation project at Lonza – the Beacon optofluidic system. The Beacon system uses light to manipulate cells. It holds great promise to simplify and accelerate the generation of high-producing mammalian cell lines. She will talk about the required experiments to assess the performance of such a system for biopharmaceutical production. She will also cover challenges she faced while testing and implementing the Beacon system.

A botanist turned Pharma scientist

Dr. Marco Prunotto

Head of Translational research at Galapagos

Marco holds a degree in Biology and a PhD in Biotechnology from the University of Turin, Italy. After his doctoral degree, he worked as a Post-Doc and the University of Geneva with prof. Giulio Gabbiani, the discovered of myofibroblasts. He then worked at the Giannina Gaslini Children's Hospital in Genoa, Italy under the medical and scientific guidance of Dr. GianMarco Ghiggeri with whom he still collaborates actively. In 2010, his lab attracted the interest of Roche pRED that subsequently hired to create the renal disease area. After some years spent in discovery he moved to late stage development in Roche/Genentech with a double appointment in South San Francisco and Basel. Since 2019 he is also Senior Lecturer at the School of Pharmaceutical Sciences of the University of Geneva where he also share a lab with prof. Leonardo Scapozza, focusing on Alport syndrome, a disorder characterized by mutations in COL4A3/4/5 and on immune-mediated glomerulonephritis. Since 2020 Marco leads the translational research team of Galapagos Ltd, the biggest European Biotech.

In transition: From academia to a not-for-profit industry

Céline Lemoine
Scientist at VFI

My relatively short career path has largely been made possible through 'networking', especially through University alumni. I completed my masters in Biopharmaceutical Sciences at the University of Leiden, the Netherlands. I came to Lausanne for my Master research project at the Vaccine Formulation Institute (VFI), a position I owe to the University alumni network. I had the opportunity to continue my research on pandemic influenza vaccines as a PhD student at the University of Geneva (UNIGE), under co-supervision of the VFI. Yet again, my thesis director is an alumnus of Leiden University. I am currently "in transition", having started my job at VFI to lead our Lausanne laboratory, while finishing my PhD. The VFI is a not-for-profit research institute with a mission to provide adjuvants, research on adjuvants, preclinical development, technology transfer and training, to the entire vaccine community, with a focus to low- and middle-income countries.

Microbiome in big pharma - Roche case study

Dr. Petar Šćepanović

Senior Scientist at Roche

Petar's main focus is investigating microbiome's role in patients in clinical trials of Roche in different disease areas by using computational tools. Petar obtained BSc and MSc in Molecular Biotechnology from University of Turin, Italy. There he worked in the cancer biology and bioinformatics lab, studying the role of Met kinase in the development of pediatric sarcomas. He then moved to Switzerland where he obtained his PhD at EPFL in Lausanne. He studied the influence of human genetic variation on the immune system, response to infection and microbiome composition. He then joined the Department of Public Health and Primary Care of University of Cambridge, UK, as a Research Associate and worked on development of polygenic risk scores and their applications in complex diseases. He concluded his postdoctoral research in Cambridge and moved to industry to work on the integration of microbiome with host genetics with the aim of developing novel methods for patient stratification and biomarker discovery.

From innovative research tools to natural product discovery and human translation

Dr. Philipp Gut

Cell Biology Department Head at Nestlé

I am a medical doctor with a passion for research. After University, I spent 6 years in academic research at University of California, San Francisco. Going from a fundamental discovery to testing how the finding can benefit human health and wellbeing is what drives me and was part of the decision to join an R&D organization. I lead the Cell Biology department at Nestlé Research where we develop and deploy innovative research tools for the discovery of natural bioactives. A focus area that I will present are cellular metabolites and plant constituents that improve mitochondrial metabolism in healthy aging and age-related diseases. Beyond leading a research program, I am responsible to advance scientific discoveries into product concepts and to support their commercial development. How to literally translate your research to different audiences and make an impact through communication in a matrix organization will be part of the presentation.

A journey from academic research to startups

Dr. Olivier Jordan

Senior Lecturer at University of Geneva

Dr. Olivier Jordan was trained as an engineer in physical sciences and chemistry. He focused on biomaterials applications for diabetes in the frame of a PhD thesis at the Swiss Federal Institute of Technology, Switzerland. He dealt with tissue engineering during a post-doc stay in a hospital environment, then joined the School of pharmaceutical sciences, University of Geneva, where he is today Senior Lecturer. His research interests lies in the field of drug delivery for oncological, vascular and rheumatic conditions. Technologies developed to this aim are based on biopolymer (hyaluronic acid, chitosan) hydrogels, extended release polymer particles or targeted nanocarriers to deliver small drug molecules, peptides or proteins. Beside his academic research, he developed translational applications that lead to the incorporation of two startups in the field of medical devices.

Development of Urolithin A, a natural metabolite of pomegranate, as an advanced nutrition product

Dr. Pénélope Andreux

Research and Development Group Leader at Amazentis

I obtained the degree of Pharmacist from the University of Strasbourg, France, with a specialization in biotechnology for pharmaceutical industry. I completed my PhD at EPFL in the laboratory of Pr. Johan Auwerx where I worked on the identification of genes, drugs and natural compounds that can modulate mitochondrial function. During my thesis, I started to work on Urolithin A (UA), a natural metabolite of the pomegranate produced by our gut microbiome. I transitioned back to industry at the end of my thesis and started to work for Amazentis to follow the development of UA as a nutritional product. Over the last decade we demonstrated that UA is a first-in-class inducer of mitophagy (Ryu et al., Nat Med 2016) and that it is safe in humans (Andreux et al., Nat Met 2019). Today I continue to expand the research and development around UA as an R&D Group Leader at Amazentis.

Pharmaceutical Sciences - my journey between academy and industry

Prof.Dr. Hanns-Christian Mahler

Board member at Bionter AG

Dr. Mahler studied Pharmacy at the University of Mainz, Germany. He then pursued his Ph.D. in Toxicology from the Institute of Pharmacy, University of Mainz and in parallel also Pharmacist specialization degrees ("Fachapotheker") in Toxicology & Ecology and Pharmaceutical Technology. He joined Merck KGaA (Darmstadt, Germany) as Lab Manager/Formulation Scientist for Protein Formulation Development and Clinical Trial Manufacturing, and later became Principal Formulation Scientist and CMC Team leader for Erbitux during its submission and launch phase. Dr. Mahler joined Roche (Basel, Switzerland) in 2005, to build the Biologics Formulation team. He was assigned additional responsibilities, including Small-Molecule Sterile Product Development, Clinical Trial Sterile Manufacture, Process Development & TechTransfer and Commercial Production Support as well as Device Development. He left Roche end August. 2015. Parallel to his work in industry, Dr. Mahler obtained his venia legendi (german Habilitation) from the University of Frankfurt/Germany in Pharmaceutical Technology in 2010. He is also adjunct faculty and lecturer at the universities of Frankfurt (Germany), and Basel (Switzerland). In Sept 2015, Dr. Mahler joined Lonza (Basel, Switzerland) in order to build and lead a new business unit for Sterile Product development, manufacture and testing, Lonza Drug Product Services (DPS). He initiated a new site in Basel and developed the business and organization, growing from 1 to ca 300 FTE and from 0 to XXmCHF revenue. In 2016, Dr. Mahler started as Expert in Group 12, working on European Pharmacopeia monographs, and later also the MAB WP at the European Directorate for Quality of Medicines (EDQM), Strasbourg/France. Dr. Mahler left Lonza end March 2021. He is currently Board Member at Bionter AG, a company founded in 2020, revolutionizing analytical testing for the benefit of people´s health. In addition, he is Board member at KriyaBio SA (founded 2020), delivering biologics beyond barriers. Dr. Mahler was elected an AAPS Fellow in 2013 and additionally serves as Editor for Pharm.Res., J.Pharm.Sci and PDA J Pharm Sci Technol, and published more than 125 manuscripts, is co-inventor of more than 50 patents and contributed to various books. His research interests and focus includes (sterile) formulations, including antibody/protein formulations, protein aggregation, analysis of critical excipients (such as surfactants), protein degradation mechanisms and delivery.

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