



University  
of Basel

Faculty of  
Medicine



# ECPM – European Center of Pharmaceutical Medicine

## Institute of Pharmaceutical Medicine

### Annual Report 2020.

# Table of Contents

<b>The ECPM at a glance.</b>	<b>3</b>
In 2020 the ECPM	3
Activities in a nutshell	3
<b>Organizational chart.</b>	<b>4</b>
Director	5
<b>Education &amp; Training.</b>	<b>6</b>
<b>Personnel.</b>	<b>6</b>
Head of Education & Training, Managing Director	6
Course Director	7
Administrator and Course Organizer	7
<b>Research.</b>	
<b>Personnel.</b>	<b>9</b>
Head of Research	9
Senior Research Scientist	10
Research Scientist	12
PhD Candidate	13
Co-Supervision of PhD projects PhD Candidates	13
<b>Education &amp; Training.</b>	<b>14</b>
<b>Current Status.</b>	<b>14</b>
Undergraduate/Graduate Teaching	14
Postgraduate Training	14
The following postgraduate courses were offered in 2020:	15
<b>Objectives for the coming years.</b>	<b>16</b>
<b>Education &amp; Training.</b>	<b>17</b>
ECPM Training Platform	17
ECPM Diploma Course (DAS) in Pharmaceutical Medicine	18
Master Course (MAS) in Medicines Development	18
Frontiers in Drug Development	18
Seminars	18
Examination	18
E-learning	19
Projects in 2020	19
Planned Projects for 2021	19
Expertise for Approval of Radioactive Diagnostics and Therapeutics	20
External Examiner	20
Undergraduate Teaching at the University of Basel Medical School	20
Undergraduate Teaching at the University of Basel, Faculty of Science	20
Undergraduate Teaching at the University of Zurich	20
Undergraduate Teaching at the University of Bern	21
Postgraduate Teaching at the University of Basel	21
Postgraduate Teaching at the University of Zurich	21
Postgraduate Teaching at the University of Liechtenstein	21
<b>Research.</b>	<b>22</b>
<b>Current Status.</b>	<b>22</b>
Key Areas of Expertise	22
Main Areas of Activity	22
<b>Objectives for the coming years.</b>	<b>23</b>
<b>Overview of activities.</b>	<b>24</b>
<b>New Projects.</b>	<b>25</b>
<b>Ongoing projects.</b>	<b>27</b>
<b>Completed projects.</b>	<b>32</b>
<b>Activities of the ECPM collaborators in 2020.</b>	
<b>Publications, Scientific Presentations, Evaluation of Research Projects and Thesis Supervision.</b>	<b>33</b>
<b>Publications</b>	<b>33</b>
Scientific Presentations to External Audiences	38
Evaluation of Research Projects and Publications (peer review)	40
Theses Supervised by the ECPM Collaborators in 2020	40

# The ECPM at a glance.

## In 2020 the ECPM

- Continued the 15th ECPM course cycle with 110 participants (overall > 2000)
- Successfully moved the course modules from onsite to online via Zoom
- Worked from home starting mid-March due to COVID-19 restrictions
- Launched the new ECPM website
- Collaborated with 150 faculty members from different affiliations
- Developed and offered special modules and lecture series
- Was involved in graduate and postgraduate teaching of ten different programs
- Acquired about 800,000 Swiss Francs in third-party research funding
- Thomas receives Doctorate in Law from the University of Lichtenstein
- Thomas and Annette receive IFAPP Global Fellow in Medicines Development Award
- Matthias received right to supervise doctorates (Promotionsrecht) at Faculty of Science, University of Zürich

## Activities in a nutshell

### Research

- Health Technology Assessment
- Health Economics and Pharmacoeconomics
- Decision-Analytic Modeling
- Health Services Research
- Epidemiology; Observational Study and Clinical Trial Design
- Biostatistics

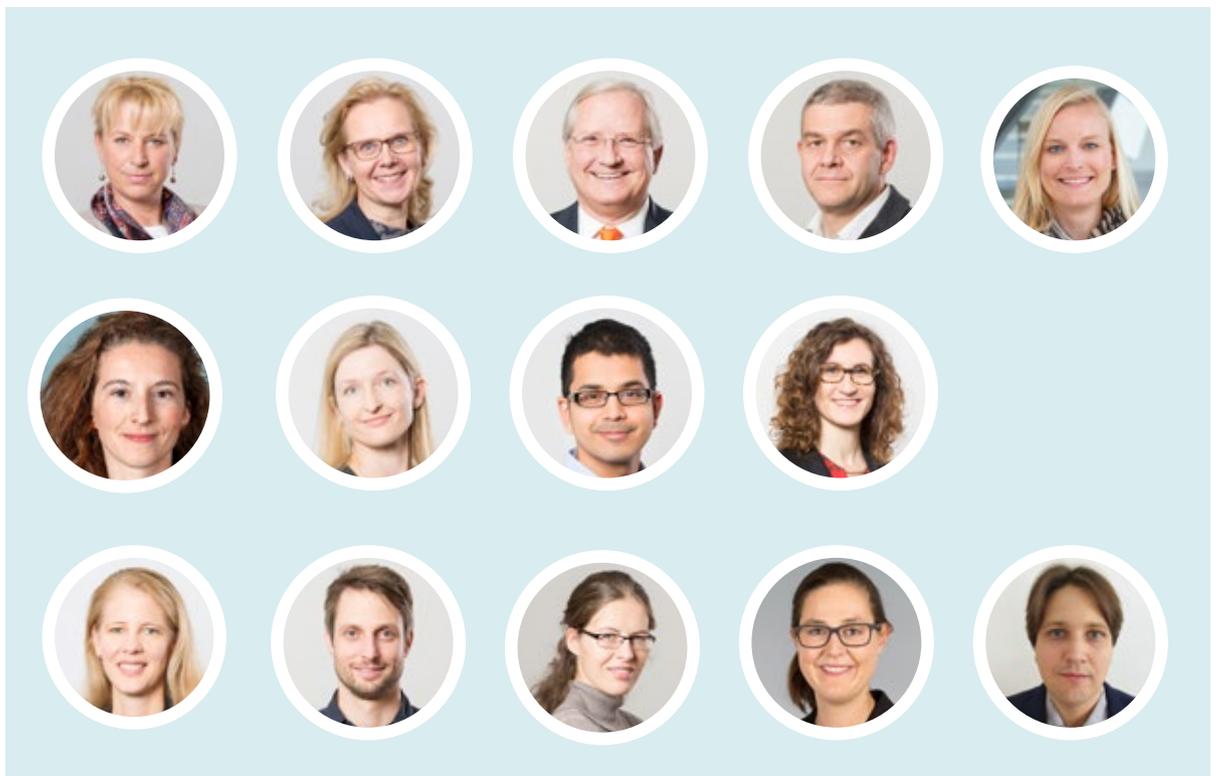
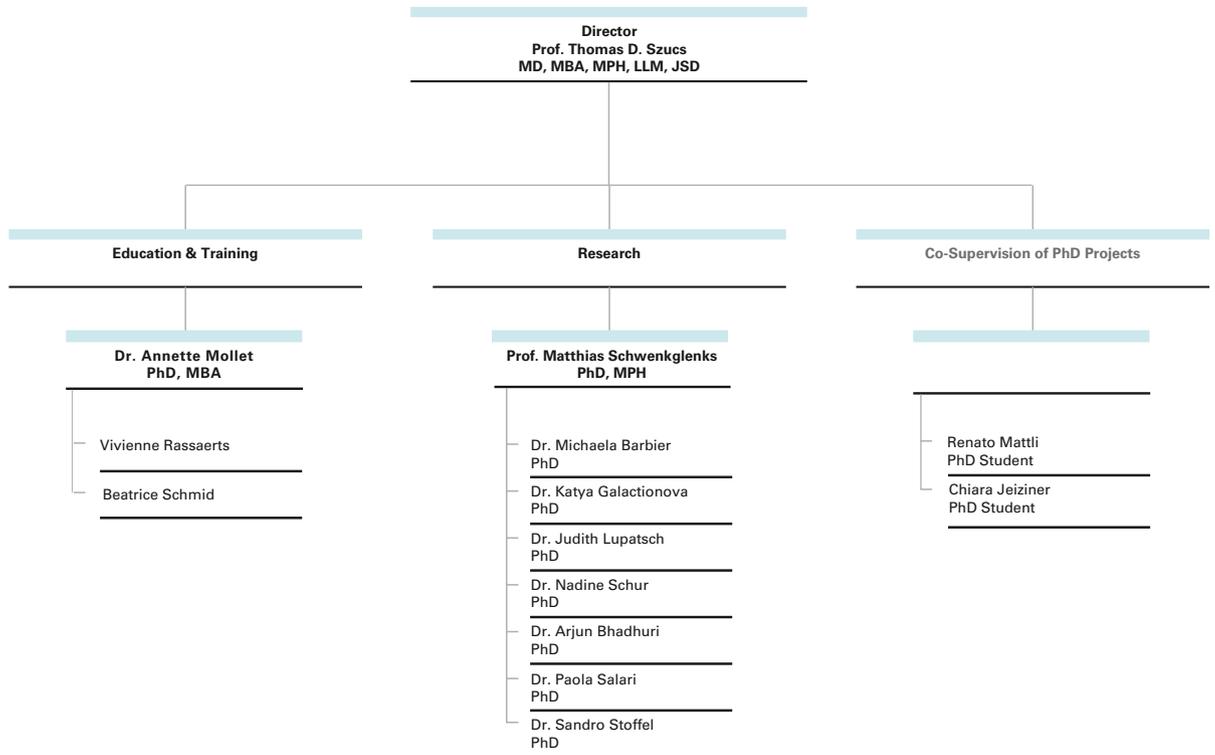
### Education and Training

- Undergraduate and graduate training of medical, pharmacy, human biology, public health and nursing students at the University of Basel
- Supervision of PhD, Master and Master of Advanced Study theses
  - PhD theses: Five
  - MPH MAS theses: Three
  - MMD MAS theses: Two
- Postgraduate training: CAS, DAS and MAS in Pharmaceutical Medicine / Medicines Development
- Different modules in the Master of Public Health and Nursing Science Programs
- Final examination of the CAS / DAS in Pharmaceutical Medicine
- Specialist examination for board certification FMH in Pharmaceutical Medicine
- Two MAS in Medicines Development defenses

- Worked on 19 research projects
- Authored and co-authored 17 published peer-reviewed articles and multiple conference abstracts
- Gave multiple scientific presentations to external audiences
- Employed 12 people



# Organizational chart.



# European Center of Pharmaceutical Medicine. Institute of Pharmaceutical Medicine.



## Director

**Thomas D. Szucs, MD MBA MPH LL.M JSD** is Professor of Pharmaceutical Medicine and Director of The Institute of Pharmaceutical Medicine/European Center of Pharmaceutical Medicine at the University of Basel.

He is also a Professor and part-time lecturer for Medical Economics at the University of Zurich and an honorary professor at the University of Peking Health Science Center. Previously he was Chief Medical Officer of Hirslanden Holding, the largest private hospital chain in Switzerland.

From 1998 to 2001 he was head of the Department of Medical Economics, a joint venture of the University Hospital in Zurich and the Institute of Social and Preventive Medicine of the University of Zurich. Professor Szucs' former appointments include head of research and founder of the Center of Pharmacoeconomics of the University of Milan, head of the working group for Clinical Economics at the University of Munich, senior consultant at Arthur D. Little Inc. and head of the Department of Health Economics at F. Hoffmann-La Roche Ltd. in Basel.

He holds a medical degree from the University of Basel, a Master in Business Administration from the University of St Gallen, Switzerland, a Master of Public Health degree from Harvard University, a LL.M in International Business Law from the University of Zurich and a Doctorate in Law from the Private University of Liechtenstein. Thomas is board certified in Pharmaceutical Medicine as well as in Prevention and Public Health.

He is also member of the editorial board of several scientific journals and has published more than 300 articles, book chapters and monographs. He has worked extensively in the field of pharmaceutical economics and epidemiology. From 2004-2014 he was the president of the Swiss Association of Health Economics. In 2016 Professor Szucs was rated among the 20 most influential economists in Switzerland. In 2020 he was recognized as Global Fellow in Medicines Development by the International Federation of Associations of Pharmaceutical Physicians and Pharmaceutical Medicine. Since 2013 he started to work as a clinician in genomic medicine.

# Education & Training. Personnel.

The European Center of Pharmaceutical Medicine (ECPM), founded in 1991, has established a reputation as one of the premier European training centers in Pharmaceutical Medicine. The ECPM training platform offers undergraduate / graduate training for medical and life sciences students and postgraduate training on three different levels in the field of Pharmaceutical Medicine / Drug Development Sciences.

The first postgraduate level represents the ECPM Certificate/Diploma of Advanced Studies course, (CAS 20 ECTS / DAS 30 ECTS), which can then be complemented on a second level with Continuing

Professional Development (CPD) short courses and a thesis to achieve the Master of Advanced Studies in Medicines Development (MAS, 60 ECTS). The third level offers a variety of short courses for Continuing Professional Development.

We collaborate locally with the Clinical Trial Unit (CTU) of the Department of Clinical Research at the University Hospital in Basel, as well as Europe wide with universities in the PharmaTrain network, such as the Semmelweis University in Budapest, and internationally with the Peking University Clinical Research Institute and the University of San Francisco.



## Head of Education & Training, Managing Director

**Annette Mollet, PhD, dipl. Pharm. Med. SwAPP, MBA** is Managing Director and Head of Education & Training of the European Center of Pharmaceutical Medicine at the University of Basel since 1997.

She received her Master in Pharmacy from the University of Basel in 1989 and received her PhD in Neurobiology from the Swiss Federal Institute of Technology in Zurich in 1994. Annette received her MBA in International Health from the Swiss Tropical and Public Health Institute (Swiss TPH) in 2019. She teaches drug development both at the Universities of Basel and Zurich. In 1997 Annette joined the clinical R&D department at F. Hoffmann-LaRoche in Basel. She was responsible for the conduct of Phase II and Phase III trials and later worked as a Medical and Product Manager for oncology products.

She is chairing the Federal Expert Committee for the Evaluation of Radioactive Drugs, a joint committee of the Swiss Agency for Therapeutic Products (Swissmedic) and the Swiss Federal Office of Public Health (BAG) since 2007, being a member since 1994. She was a founding member and Member of the Board of the Swiss Association of Pharmaceutical Professionals (SwAPP) and was active in SwAPP's commission for specialty training and Continuing Professional Education (CPD) from 1999 until 2018.

She was also involved as a Program Manager in the creation of a European specialist title in Pharmaceutical Medicine and of a Master title in Medicines Development within the Innovative Medicines Initiative (IMI) from 2009 until 2014. She chairs the PharmaTrain Federation (successor project after termination of the PharmaTrain project in 2014) working group of course providers in Pharmaceutical Medicine.

In 2016 Annette was elected Board Member of the Association of Graduate Regulatory Educators (AGRE global) based in the USA. She is the co-author of the Dictionary of Pharmaceutical Medicine by Springer (fourth edition, 2017) and was a member of the working party on the "PharmaTrain Syllabus for Pharmaceutical Medicine" lead by the Royal College of Physicians in London. Since April 2017 Annette forms part of the Committee of Continuing Education of the University of Basel. In July 2018 she was elected as an External Examiner at the Trinity College of the University of Dublin for the curriculum in Pharmaceutical Medicine.

In 2020 she was recognized as Global Fellow in Medicines Development by the International Federation of Associations of Pharmaceutical Physicians and Pharmaceutical Medicine.



### Course Director

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**Vivienne Rassaerts** is the Course Director in Training and Education at the European Center of Pharmaceutical Medicine (ECPM) at the University of Basel.

She received her Executive Master of Science in Communications Management in 2010 from the Università della Svizzera Italiana in Lugano and a Bachelor of Arts in European Business Administration from the Cologne Business School/University of Hertfordshire in 2002.

She initially worked for PUMA in the sporting goods industry, before she joined Actelion Pharmaceuticals Ltd. in 2010 as Employee Communications and Brand Manager. She moved to F. Hoffmann-La Roche Ltd. in 2013 as Senior Communications Manager and Business Partner to the Oncology Disease Area in Roche's global R&D organization. She joined ECPM in 2020 as Course Director.



### Administrator and Course Organizer

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**Beatrice Schmid** is responsible for the course organization and administration at the European Center of Pharmaceutical Medicine since 2013.

Since 1996 Beatrice was responsible for the management of different administrative secretariats. She started her career as a manager in a facility management company where she was responsible for the human resource matters of more than 300 employees.

In 2000 she joined Novartis where she held different positions such as Head of the IT secretariat of Switzerland and management of the divi-

sion secretariat and later as Human Resource Assistant of the technical operations department.

From 2002 until 2013 she worked for Helvetia, a Swiss insurance company. At that time, she was Head of the IT secretariat of the divisional secretariat for the whole of Switzerland and later Head of the Sales Management secretariat, a member of the Management Board of Switzerland. In March 2013 she joined the ECPM where she manages the course organization and the administration of the secretariat of the institute. She also works as an assistant to Professor Thomas D. Szucs, Director of the ECPM.



Thomas and Annette chairing the ECPM Course Modules 3 and 4 online via Zoom.

# Research. Personnel.

The European Center of Pharmaceutical Medicine's (ECPM's) research activities focus on the health economic characteristics, cost-benefit implications and efficient use (e.g. guided by predictive testing or risk stratification models) of pharmaceuticals and other healthcare interventions in Switzerland and internationally. They have a close relationship with modern Health Technology Assessment and imply the use and integration of health economic and pharmaco-economic evaluation methodology (cost effectiveness, cost utility, application of advanced modeling techniques), outcomes and clinical research (i. e., randomized clinical trial and observational study) methodology, and biostatistics. Complementary activities occur in related fields such as health systems research, health services research, clinical epidemiology and pharmacoepidemiology.

Health economic evaluation studies, which are a mainstay of ECPM's research activities, integrate clinical evidence with medical resource use and cost data to analyze the value for money provided by new or long-used drugs and other health care interventions. The overarching question is how scarce health care resources can be optimally used to maximize patient benefit and support the sustainability of healthcare systems. The results of this type of research complement comparative effectiveness research and are an important prerequisite of informed and transparent health policy decision making

Clinical fields addressed by ECPM studies include, amongst others, oncology and hematology, cardiovascular disease and heart failure, geriatrics, post-operative pain management, neurology, ophthalmology, infectious diseases and vaccinations.



## Head of Research

**Matthias Schwenkglens, PhD, MPH** is the Head of Research of the European Center of Pharmaceutical Medicine since 2003. Since 2010, he also leads the Medical Economics Unit at the Epidemiology, Biostatistics and Prevention Institute of the University of Zurich. He acts as a health economics expert for the Cancer Screening Committee that has been set up within the framework of the Swiss National Strategy against Cancer.

Matthias obtained a Master of Arts in Sociology and Political Sciences from the University of Tübingen, a Master of Public Health from the Universities of Basel, Bern and Zurich, and a PhD in Epidemiology from the University of Basel. In 2009, he received the Venia Legendi in Health Economics and Public Health from the Medical Faculty of the University of Zurich, and was subsequently appointed Professor (Titularprofessor) in 2016.

He previously headed the Department of Medical Economics at the Hirslanden Private Hospital Group, Zurich, and worked as a Research Fellow at the Department of Medical Economics of the University of Zurich. He also has extensive professional experience in internal intensive care nursing.

His current research interests and teaching activities are in the fields of health economics, health economic evaluation and modeling, Health Technology Assessment, health services research, epidemiology, observational study and trial design, and biostatistics.



### Senior Research Scientist

**Michaela Barbier, PhD** is a Senior Research Scientist and lecturer at the European Center of Pharmaceutical Medicine since 2018.

She holds a Master in Mathematics and Economics ("Wirtschaftsmathematik") and a PhD in Biostatistics, both from the University of Ulm. Alongside her PhD, she already worked on industry-funded projects in biostatistics but was also involved in teaching activities.

She is an experienced biostatistician with more than 13 years' expertise in healthcare across academia, the pharmaceutical industry and consulting, with her work spanning health economics and outcomes research, Health Technology Assessments, market access, clinical development and real world evidence.

Michaela has a vast experience of drug development and clinical trials after working for many years as a (senior) statistician at Novartis. As a later consultant, she expanded her knowledge in health economics with projects ranging from Health Technology Assessments, health economic evaluations and modeling, real world database analyses and also market access. She acquired knowledge of a wide range of indications including among others cardiovascular, respiratory and ophthalmology.

Her current research interests remain in health economic decision modeling as well as in biostatistical modeling.



### Senior Research Scientist

**Judith Lupatsch, PhD** is a Senior Research Scientist and lecturer at the European Center of Pharmaceutical Medicine since 2017.

She has a degree in social sciences from the University of Mannheim, where she focused on judgment and decision models as well as behavioral psychology. After working in several projects, she continued with a master's degree in economics at the University of Bern, where she became interested in econometrics and health economics. Her thesis was on developing and modeling preference-based utility measures for health economic evaluations.

She perused with a PhD in epidemiology and biostatistics at the institute of social and preventive

Medicine (ISPM) in Bern where she had the chance to deepen her modeling and data analyses skills, especially in cancer epidemiology. After the PhD she continued with a post-doctoral fellowship at the institute national de la santé et de la recherche médicale (INSERM) in Paris, France. At the ECPM, she is mainly responsible for health economic and health service research projects in cooperation with the Swiss Group for Clinical Cancer Research (SAKK).

Her current research interests focus on health economics, HTA, epidemiology and health service research, especially modelling aspects.



### Senior Research Scientist

**Nadine Schur, PhD** is a Senior Research Scientist at the European Center of Pharmaceutical Medicine since 2015.

She studied Biomathematics at the University of Applied Science Zittau/Goerlitz, Germany, before obtaining a Master of Science in Epidemiology at the University of Basel in 2008. Afterwards, she worked on her PhD thesis “Geostatistical modeling of schistosomiasis transmission in Africa” at the Department of Epidemiology and Public Health, Swiss Tropical and Public Health Institute (Swiss TPH), Basel, that she published in 2011.

She continued her work at the Swiss TPH on the spatial distribution of neglected tropical diseases in Africa for another year where she was also involved in teaching.

Then, she started a new position as Research Associate at the Department of Infectious Disease Epidemiology, Imperial College London, analyzing demographic and behavior-related factors as well as temporal trends associated with the HIV epidemic in Zimbabwe. She also gained knowledge on the conception and implementation of epidemiological field studies in the framework of the Manicaland Project. During her years of research, she has had the opportunity to develop various techniques in health research methodology from systematic reviews to disease modeling.

Her current research interests are in the field of epidemiology and biostatistics focused on multivariable regression analysis, epidemiological modeling in relation to the prevention.



### Senior Research Scientist

**Katya Galactionova, PhD** is a Senior Research Scientist at the European Center of Pharmaceutical Medicine since 2020.

She holds an MA in Applied Economics from the University of North Carolina at Greensboro, USA. After finishing her studies, she moved to Emory University, USA where she supported, designed and implemented statistical analyses of health data to inform questions about the impact of US health policies on health outcomes, uptake of health interventions, drivers of growth in health care expenditure, and addressed other questions within the health services research.

In 2012, she joined the Swiss Tropical and Public Health Institute (Swiss TPH), Switzerland where she applied her skills and developed an expertise in economics of infectious diseases, epidemiology, economic evaluation, and gained experience in simulation and modelling. While at Swiss TPH, she contributed operational and health systems

insights to modelling of malaria interventions, conducted costing studies of interventions against infectious diseases, and led methodological development toward operationalizing cost-effectiveness for optimal resource allocation of funding by malaria programs. Her work on health economic modelling of the new malaria vaccine supported policy decision-making by global (WHO, BMGF, GAVI) and regional stakeholders and formed the bulk of her thesis that led to a PhD in epidemiology with a concentration in health economics.

Her current research interests are in health economic evaluation and modelling, impact evaluation including quasi-experimental methods, epidemiology and health services research in both developed and developing country settings.



### Research Scientist

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**Arjun Bhadhuri, PhD** is a Research Scientist, Health Economist and lecturer at the European Center of Pharmaceutical Medicine since 2018.

He completed his PhD at the University of Birmingham in Health Economics in 2017. Subsequently he worked as a Postdoctoral Researcher in Health Economics at the University of Sheffield for nine months. He then moved to

the ECPM, where he is working as a Postdoctoral Researcher.

He also undertakes teaching in elementary health economics for postgraduate students at the University of Basel.

His current research interests are in systematic reviews, economic evaluations, psychometrics research, medical writing and informal care.



### Research Scientist

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**Paola Salari, PhD** is a Research Scientist and lecturer at the European Center of Pharmaceutical Medicine since 2018.

She is an economist with research experience in health systems of high and low income countries. She pursued both a BSc and a MSc degree in Economics and Social Sciences at Bocconi University, in Milan. In March 2015 she obtained a PhD in Economics with a specialization in Health Economics and Policy at the Università della Svizzera italiana (University of Lugano). She focused her doctoral studies on the functioning of the Swiss health care system.

After her PhD, she joined the Swiss Tropical and Public Health (Swiss TPH) Institute in Basel, as

Postdoctoral Scientific Collaborator where she conducted research in the field of global health. In particular, she carried out socioeconomic analyses of the health systems of Ghana and Tanzania and she also collaborated in costing studies of schistosomiasis' elimination in Zanzibar and Côte d'Ivoire.

Her areas of expertise include health inequalities, health financing, access to health care, economic evaluations and program evaluation. At the ECPM she is working on cost-effectiveness analysis alongside cluster randomized clinical trials.



### Research Scientist

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**Sandro Stoffel, PhD** is a Research Scientist at the European Center of Pharmaceutical Medicine since 2019.

He holds a Master in Business Administration from the University of Fribourg, a Master in Development Economics from the University of Rome Tor Vergata and a Master in Economic Theory from Paris-Sorbonne University. After completion of his PhD in Economic Theory at the University of Rome Tor Vergata, he worked as a

Behavioural Researcher at the Joint Research Centre of the European Commission on projects applying insights from behavioral economics to preventive health behaviors. He then moved to UCL and later to the University of Aberdeen, before joining the ECPM.

His current research interests are in behavioral health economics, medical decision making and survey methodology.

# Co-Supervision of PhD projects. PhD Candidates.



## PhD Candidate

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**Renato Mattli, MSc ETH, MAS BA** studied Human Movement Sciences at the ETH in Zurich. After working several years as a Clinical Research Associate in the medical device industry he acquired a MAS in Business Administration. Thereafter, he worked as a Health Economics and Market Access Manager EMEA for the same medical device company. Since 2012, Renato is working as a Research Associate at the Winterthur Institute of Health Economics (WIG) that belongs to the Zurich University of Applied Sciences

(ZHAW). Since 2014, he is also the deputy head of the Health Economics Research Group within the WIG. His main research interests and teaching activities are in the fields of health economic evaluation and health technology assessment. Renato joined the ECPM in 2016 as a part time PhD student. He successfully defended his thesis entitled “scaling up cost-effective physical activity interventions in a culturally diverse setting”, in May 2020.



## PhD Candidate

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**Chiara Jeiziner, MSc, BSc pharm**, studied at the University of Fribourg and Basel in Switzerland. In 2017, she graduated and received the federal diploma as a pharmacist in Basel. After working one year in a community pharmacy, she joined the Pharmaceutical Care Research Group (PCRG) at the University of Basel in August 2018. Her PhD thesis is focusing on the “implementa-

tion of pharmacogenotyping in pharmaceutical care”. In collaboration with Katja Suter, a former staff member of the ECPM, she analyzes pharmacogenetic relevant information and instructions about pharmacogenetic management in all summaries of product characteristics of drugs registered in Switzerland.

# Education & Training.

## Current Status.

The European Center of Pharmaceutical Medicine has established a reputation as one of the premier European training centers in Pharmaceutical Medicine. Training is offered on undergraduate, graduate and postgraduate levels. On a postgraduate and Continuing Professional Development (CPD) level, courses provide expert knowledge in drug development, pharmaceutical medicine, clinical research, and regulatory sciences.

The ECPM Diploma Course represents the core of the postgraduate training platform. It covers the training need of specialists working in one or the other phase in drug development and provides a holistic view of the process and comprehensive instructions for integrating cutting-edge concepts and best practices in medical product development and regulatory sciences.

The focus of the ECPM training platform is to teach integrated medicines development with emphasis on requirements for rational and rapid development of a new product for the global market. The course programs cover all aspects of pharmaceutical medicine and drug development and regulatory sciences as defined by the IMI PharmaTrain syllabus.

### **Undergraduate / Graduate Teaching**

The ECPM employees teach a variety of graduate-targeted courses in pharmaceutical medicine, health economics and health policy. Courses are offered within the Medical Faculty/Department of Public Health and the Pharmacenter of the University of Basel, as well as at the Medical Faculty and Science Faculty of the University of Zurich. Lectures are held in English and German. For details, please refer to the listing of teaching and training activities.

### **Postgraduate Training**

The largest training offer remains the ECPM Diploma Course with 110 participants running over two years. The current course cycle started in September 2019 and will be finished in August 2021. The course has been offered successfully for 29 years. The Diploma of Advanced Studies in Pharmaceutical Medicine can be extended with Continuing Professional Education (CPD) short courses and a Master Thesis to achieve a Master of Advanced Studies in Medicines Development. Currently, six candidates are enrolled.

In 2012 and 2018 the ECPM received the “Centre of Excellence” accreditation by the Innovative Medicines Initiative (IMI) PharmaTrain.. This certifies that the ECPM adheres to the IMI Education & Training Quality Standards as well as to the PharmaTrain Syllabus, Learning Outcomes and Curriculum for Training in Pharmaceutical Medicine.

**The following postgraduate courses were offered in 2020:**

**Diploma Course (DAS) in Pharmaceutical Medicine**

The 15<sup>th</sup> cycle started in September 2019 and ends with the examination in August 2021.

**Scientific Medical Writing**

*In collaboration with Mediwrite*

This course provides an introduction to the field of strategic scientific and medical writing and offers hands on training in writing and analyzing scientific texts.

**CAS Klinisch-genomische Medizin & Einführung in das Genetic Counseling**

*In collaboration with the private University of Lichtenstein, three modules in 2020*

The basics of genomic medicine and the application of pharmacogenomics and tumorgenetics are presented. One module is hosted by Roche onsite plus Zoom.

**Ethical and Legal Aspects of Clinical Trials**

The implementation of clinical research projects requires conscientious review of research projects not only in terms of their scientific quality but also in regard to their ethical adequacy and appropriateness. How can we balance the risk-benefit of our projects? Given the importance of ethics for the conduct of drug development and research, it should come as no surprise that many different professional associations, government agencies, and universities have adopted specific codes, rules, and policies relating to research ethics.



Bildlegende

# Education & Training.

## Objectives for the coming years.

The objectives of the European Center of Pharmaceutical Medicine (ECPM) are to maintain the high quality of the study program, to implement the latest trends and to retain the leading role in the training of Medicines Development.

The ECPM Course is recognized by the Swiss Association of Pharmaceutical Medicine ([www.sgpm.ch](http://www.sgpm.ch)), by the Swiss Medical Association ([www.fmh.ch](http://www.fmh.ch)) and the Swiss Association of Pharmaceutical Professionals ([www.swapp.ch](http://www.swapp.ch)) to cover the theoretical training and the examination for specialization and board certification. In addition, the courses are accredited by the Swiss Association of Pharmacists (FPH, [www.pharmasuisse.org](http://www.pharmasuisse.org)) for continuing education. We continue to assess further accreditations that substantiate the high quality of the study program.

Collaboration with professional associations and our customers from the pharmaceutical industry, academia and regulatory authorities are key. Therefore our focus remains on strengthening and developing the PharmaTrain collaboration, to offer the Master of Advanced Studies course participants the opportunity to join CPD short courses and acquire credit points, tailored to their needs.

Through the Bologna system it is possible to acquire credit points at other universities. The

rule is that at least 50% of the training and the master thesis must be completed at the university where the candidate is enrolled.

The first Master candidate finished in 2015, further three candidates in 2018, two candidates in 2019 and one candidate in 2020. Several students are in the process of attending master module courses and writing their master thesis.

Besides the collaboration with the partner universities in Europe, the ECPM collaborates inter-nationally with partners that offer courses based on the on the same training syllabus.

Namely the Peking University Clinical Research Institute (PUCRI) at the University of Beijing and the University of California San Francisco to exchange knowledge and enhance training competencies and standards. A number of faculty members teach on all three courses and several students have already switched between the programs due to their changing employment in the global industry.

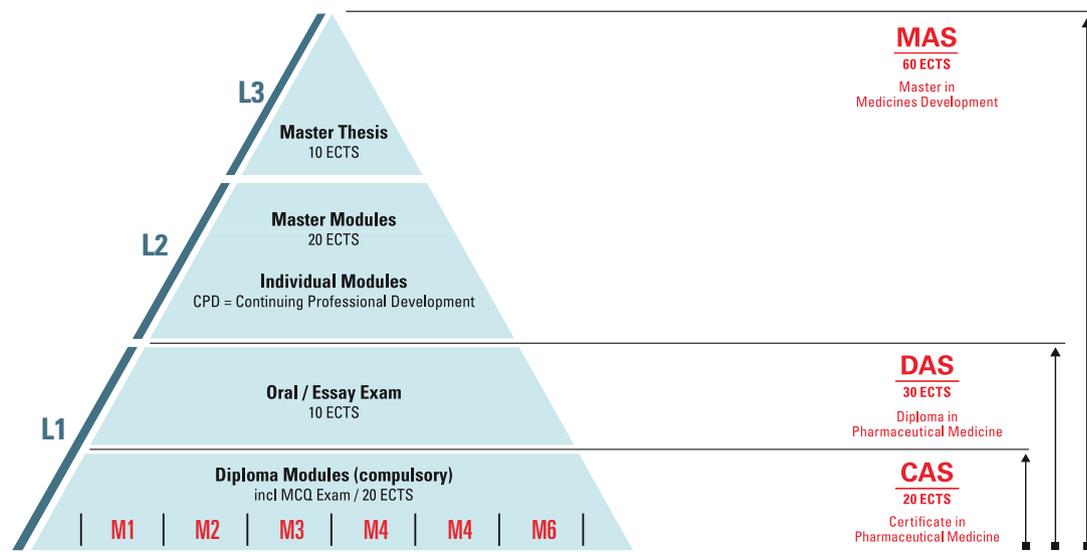
A study trip to Estland and China, together with the Swiss Association for Health Economics and Health Sciences, to learn how they organize their health system was planned for 2020 but had been shifted to 2021, respectively 2022.



Participants of the 15th ECPM Course Cycle (2019-2021).

# Education & Training.

## ECPM Training Platform



The ECPM training platform is conceived to provide profound training for scientists, regulators and healthcare industry managers in different areas and phases of drug development. The focus of the platform is to teach integrated medicines development with an emphasis on requirements for rational and rapid development of a new product for the global market. The course programs cover all aspects of pharmaceutical medicine, drug development and regulatory sciences as defined by the Innovative Medicines Initiative (IMI) PharmaTrain Syllabus.

As such, its primary targets are to provide up-to-date knowledge on current trends in drug development and to train the leaders in drug development for their next career step. Additionally, it offers a platform not only to learn but also to share knowledge with colleagues and to discuss with experts face-to-face.

The ECPM training platform offers undergraduate/graduate training for students in medicine, human biology, epidemiology, public health and pharmacy as well as postgraduate training on three different levels in the field of Pharmaceutical Medicine/Drug Development Sciences.

The first level [L1] represents the Certificate/Diploma of Advanced Studies in Pharmaceutical Medicine including 6 mandatory basic modules (CAS 20 ECTS / DAS 30 ECTS). The diploma can be supplemented on a second level [L2] with CPD short courses and a thesis to achieve a Master of Advanced Studies [L3] (60 ECTS).

The third level includes all diploma and master modules, many elective modules and short courses, which are accredited by the University of Basel and several professional associations for Continuing Professional Development (CPD).

The ECPM collaborates with a science-driven and highly experienced international faculty including a network of experts in academia, the pharmaceutical industry and regulatory agencies and bodies of the healthcare system. Within this network, the ECPM was the coordinating entity of the European Innovative Medicines Initiative (IMI) PharmaTrain project (2009–2014), which aimed at fostering the overall understanding and competence for successful execution of integrated drug development and life-cycle management of medicines by identifying training gaps and by harmonizing the teaching programs. This initiative is maintained through the PharmaTrain Federation.

## **ECPM Diploma Course (DAS) in Pharmaceutical Medicine**

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The ECPM course is a well-established postgraduate education and training program targeted at representatives from the pharmaceutical industry, service industry, academic and government decision- and policy-makers who already have a good understanding of the basics and will benefit from a more in-depth, comprehensive and systematic immersion into modern medical product development, regulation and market introduction.

Course participants are involved in lectures, panel discussions, team-oriented case studies and interactive learning. Participation in the course provides the opportunity to integrate work and education, to discuss with experts face-to-face or online, to gain in-depth knowledge while building an international network, and to put this into perspective with each participant's own career plan.

A faculty network of experts from academia, pharmaceutical and biotechnology companies and regulatory authorities (including the European Medicines Agency, the Food and Drug Administration, Japanese and Emerging Markets regulatory agencies) carry the teaching responsibility. A successful completion of the course and the final examination provides the title Diploma of Advanced Studies (DAS) in Pharmaceutical Medicine and includes 30 ECTS credits.

## **Master Course (MAS) in Medicines Development**

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The Master Course in Medicines Development (MMD) is a postgraduate Master of Advanced Studies course. This program extends the Diploma course in Pharmaceutical Medicine. CPD short courses that count towards the Master, can be chosen according to the needs of the candidates who need to be able to cope with the challenges of drug development. Training and skills provide the basis to critically assess and improve challenges in the drug development process.

The program is designed as an executive course that can be completed in addition to working full- or part-time.

Through the IMI PharmaTrain network, we offer the Master of Advanced Studies course participants the opportunity to join courses and acquire credit points, tailored to their needs. Through the Bologna system it is possible to acquire credit points at other universities. The rule is that at least 50 % of the training and the master thesis must be completed at the university where the candidate is enrolled.

## **Frontiers in Drug Development Seminars**

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Integrated into the modules of the Diploma course, the ECPM offers one-day "Frontiers in Drug Development" seminars on current trends and hot topics. These seminars are open to the public and are accredited for continuing education by different professional organizations, such as the Swiss Medical Association (FMH). The complete list can be viewed on: <http://www.ecpm.ch/frontiers-in-drug-development>.

## **Examination**

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The examinations planned for April 2020 had to be moved to late summer due to the Federal lockdown. On August 17 and September 21 we were able to offer the examinations at Hotel Odelya onsite with respect to the Covid-19 precaution measures of the Federal Office of Public Health. Since we had to change the dates, we decided to offer both the MCQ and the oral/essay at both dates to accommodate everybody. One course participant could not travel from Dubai. The Swiss Embassy in Abu Dhabi agreed to host the exam and to supervise the procedure. The QR codes both for the MCQ and the Essay questions were sent to the embassy. On the day the examinee was able to open the documents with an iPad. The oral examination was performed via a Zoom meeting. This was a great experience, everything worked well, thanks to the professional support of the Embassy staff.

Multiple Choice Examination: in August 7 candidates participated and 2 failed, while in September 8 participated and 1 failed.

Oral/Essay Examination: in August 3 candidates participated and all passed, in September 9 participated and 1 failed. In addition, we had one oral examination as re-examination to achieve the CAS:

We were able to award 5 CAS, 13 DAS and 1 MAS title in 2020.

### **E-learning**

To cope with the limited time resources and reduced budgets of specialists working in the health care environment, the ECPM has produced three e-learning programs. E-learning modules can be used for different teaching purposes. First they can be used as a self-learning tool for preparation or repetition of the course material, second they can replace selected face-to-face modules required to achieve the Master in Medicines Development and third they enable students to collect credits for Continuing Professional Development (CPD):

- Basics in Health Economics (launched 2013)
- Drug Safety and Pharmacovigilance (launched 2014)
- Personalized Healthcare (launched 2015)

Due to the Covid-19 pandemic we saw a strong increase of bookings for our e-learnings. A Certificate of Attendance from the University of Basel will be awarded after successful completion of each e-learning program (1 ECTS).

### **Projects in 2020**

- Launch of the new ECPM website
- Module on “Medical and Scientific Writing”
- Module on Ethical and Legal Aspects of Clinical Trials
- Module in CAS Klinisch-genomische Medizin & Einführung in das Genetic Counseling

- Four master thesis in medicine’s development supervised and one completed and published
- Scientific program of the joint online annual meeting 2020 of the Swiss Association of Pharmaceutical Professionals and Physicians (SwAPP and SGPM)

### **Planned Projects for 2021**

The ECPM is working on several new training and teaching programs:

- New edition of the course “Project Management in the Life Science Industry”
- Follow-on Drugs: Generic, Biosimilar & Non- Biological Similar Medicinal Products
- Scientific Medical Writing
- Fundamentals in Health Economics
- Communicating more powerfully and persuasively
- Frontiers in Drug Development seminar - Best Practices in Communicating with Healthcare Stakeholders
- Study Trip to China
- New e-learning “Basics of Drug Development” for Novartis, which will be offered for free on Coursera
- Scientific program of the joint annual meeting 2021 of the Swiss Association of Pharmaceutical Professionals and Physicians (SwAPP and SGPM)
- Second edition of the “Genetic Counselling course”
- The 30th anniversary celebration was originally planned for June 2021. Due to the ongoing Coronavirus pandemic, the ECPM will commemorate its 30th anniversary on June 20, 2022 with a celebration event in Basel.

## Expertise for Approval of Radioactive Diagnostics and Therapeutics

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**Annette Mollet** chairs the Federal Expert Committee for radioactive drugs consulting Swissmedic and the Federal Office of Public Health regarding the approval of new diagnostic and therapeutic drugs and tools for nuclear medicine.

## External Examiner

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**Annette Mollet** is external examiner for the MSc in Pharmaceutical Medicine and the Postgraduate Diploma in Pharmaceutical Medicine of the Trinity College in Dublin.

## Undergraduate Teaching at the University of Basel Medical School

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1. Szucs TD, Mollet A. Tutorate im Wissenschaftsmonat (WiMo) für Medizinstudenten, 4./5. Studienjahr Medizin Master.
2. Szucs TD, Mollet A., Interprofessionelles Modul Medikamentenentwicklung. Major Clinical Medicine, 2. Studienjahr Medizin Bachelor.
3. Szucs TD. Interprofessionelles Modul Pharmakogenomik und personalisierte / individualisierte Medizin. Major Clinical Medicine, 2. Studienjahr Medizin Bachelor.
4. Szucs TD. Ökonomie und Gesundheit (Vorlesung). Major Clinical Medicine, 1. Studienjahr Medizin Bachelor.
5. Szucs TD. Gesundheitsökonomie (Vorlesung), 2. Studienjahr Medizin Master.
6. Schwenkglens M, Lupatsch JE. Interprofessionelles Modul Medizinische Ökonomie. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.
7. Schwenkglens M. Interprofessionelles Modul Gesundheitspolitik. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.
8. Szucs TD. Grundlagen und Übersicht. Einführung in die Medikamentenentwicklung. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.
9. Szucs TD. Phasen 2 und 3 Prüfungen. Einführung in die Medikamentenentwicklung. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.
10. Schwenkglens M, Lupatsch JE. Kleingruppenseminare im Themenblock Körper, Subjekt, Umwelt, 1. Studienjahr Medizin Bachelor.

## Undergraduate Teaching at the University of Basel, Faculty of Science

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1. Mollet A, Schwenkglens M. Lectures forming part of 12527-02 – Public Health / Epidemiologie
2. Schwenkglens M. Lectures forming part of 20458-01 – Essentials in Drug Development & Clinical Trials.

## Undergraduate Teaching at the University of Zurich

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1. Szucs TD, Mollet A. Mantelstudium Arzneimittelentwicklung. 2.–4. Studienjahr Medizin Bachelor, Universität Zürich.
2. Schwenkglens M, Szucs TD, Mollet A. BME310 – Research methodology for studies on human health and disease. 3. Studienjahr Biomedicine Master.
3. Schwenkglens M, Szucs TD. BME318 – Clinical Epidemiology and Quantitative Research in Health Care. 3. Studienjahr Biomedicine Master.
4. Szucs TD, Schwenkglens M, Mollet A. BME329 – Developing New Medicines: An Introduction. 3. Studienjahr Biomedicine Master (responsible PD Dr. Patricia Blank).

### **Undergraduate Teaching at the University of Bern**

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1. Schwenkglenks M. Lectures on Health economic evaluation and Health Technology Assessment in Switzerland and Europe. Master Biomedical Engineering.

### **Postgraduate Teaching at the University of Basel**

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1. Mollet A, Szucs TD, Schwenkglenks M. Lectures forming part of the ECPM Course in Pharmaceutical Medicine.
2. Schwenkglenks M, Mattli M. Gesundheitsökonomische Modellierung – Hands-on. Course forming part of the Postgraduate Master Program in Public Health.
3. Lupatsch, JE. Bhadhuri. A. Salari P. Stoffel S. Barbier M. 41127 Advanced Research Methods – Health Economics, Master and PhD students, Semester course at the Institute of Nursing Sciences.
4. Bhadhuri A. Essentials in Health Research Methodology, Topic 3 – Basics of Health Economics. PhD students, PhD Program Health Sciences (PPHS).

### **Postgraduate Teaching at the University of Zurich**

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1. Mollet A, Schwenkglenks M, Szucs TD. Courses forming part of the Postgraduate Master Program in Public Health (MPH).
2. Szucs TD. Gesundheitsrecht. Postgraduate Master Program in Public Health

### **Postgraduate Teaching at the University of Liechtenstein**

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1. Szucs TD. CAS Klinisch-genomische Medizin & Einführung in das Genetic Counseling.

# Research.

## Current Status.

Research activities have been started in 2003. Initially, a majority of studies were run with industrial partners, as there was (and is) only limited public funding for pharmaceutical-related health economic evaluation and Health Technology Assessment in Switzerland. In recent years, funding has been achieved in a balanced way from industry, health insurance providers, governmental and semi-governmental organizations and medical collaborative study groups. In 2020, our group has been one of the most active health economic groups in Switzerland in terms of publication activity, and project scope and scale. Based on six fulltime equivalents of scientific staff, we pursued a broad range of research activities, including participation in EU-funded international projects.

In a European Union HORIZON 2020-funded project addressing pharmacotherapy optimization in elderly patients, the ECPM is responsible for the health economics work package. We also take responsibility, since 2007, for the outcomes research and health economic evaluation activities of the Swiss Group for Clinical Cancer Research (SAKK), the leading Swiss collaborative study group in the field of oncology and hematology. Alongside changes to the national approach to Health Technology Assessment (HTA), we are engaged in discussion and are pursuing cooperation with relevant academic and non-academic players in the field, including health insurance companies. In cooperation with a partner institution at the University of Zurich, we perform HTAs for the Swiss Medical Board (SMB), a non-profit institution funded by e.g. the Swiss cantons and the Swiss Academy of Medical Sciences (SAMW), and perform HTA activities for the Swiss Federal Office of Public Health.

Projects with industrial partners continue to also play a relevant role, which gives us opportunities to work with raw data from large, multinational randomized controlled trials and to be involved in Health Technology Assessment activities abroad, e.g. in the UK. In cooperation with the Basel Pharmacoepidemiology Unit (BPU; Prof. Christoph Meier) and the Helsana Group, we have, for the seventh time, published a report on medication utilization in Switzerland, based on health

insurance claims data covering about 15 % of the Swiss population (Helsana Arzneimittelreport). Projects and resulting publications are listed in section Overview of Activities, below.

The strategic development of our research activities profits from fruitful exchange within the Department of Public Health of the Medical Faculty. It remains a key goal to pursue and intensify our cooperation with other units at the University of Basel pursuing related research activities, e.g. the Basel Institute for Clinical Epidemiology & Biostatistics, Institute of Nursing Sciences, Swiss Tropical and Public Health Institute, Department of Health Economics at the Faculty of Business and Economics (DHE), and Basel Pharmacoepidemiology Unit. The aforementioned units and the ECPM have joined forces to establish an interdisciplinary network of excellence for comparative effectiveness and health economic research, S-CORE. S-CORE has achieved formal recognition as a Research Network of the University of Basel. Research staff is also involved in university teaching at different levels.

### Key Areas of Expertise

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- Pharmaco- and Health Economics
- Behavioral economics
- Decision-analytic modelling
- Epidemiology
- Outcomes research
- Clinical and observational study designs
- Biostatistics

### Main Areas of Activity

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- Variation in healthcare utilization
- Approaches to health technology assessment
- Oncology and hematology
- Cardiovascular disease and heart failure
- Neurology
- Influenza and other infectious diseases
- Geriatrics, specifically pharmacotherapy optimization in the elderly
- Medication utilization in Switzerland
- Variation in healthcare utilization
- Approaches to health technology assessment and valuation of health service

# Research.

## Objectives for the coming years.

The situation and achievements of the European Center of Pharmaceutical Medicines (ECPM) in 2020 reflect the continued, successful development of a small research unit. In the coming years, we will seek to maintain a sensible balance of competitively (EU, potentially SNSF), publicly and privately funded research projects. As third-party funding of Health Technology Assessment-related and health economic evaluation-related research remains structurally uncertain, we also need to gain substantially more long-term university funding for our research group to ensure sustainability.

We aim to further strengthen collaboration and use potential for synergies with local partners from the Department of Public Health of the Medical Faculty and beyond.

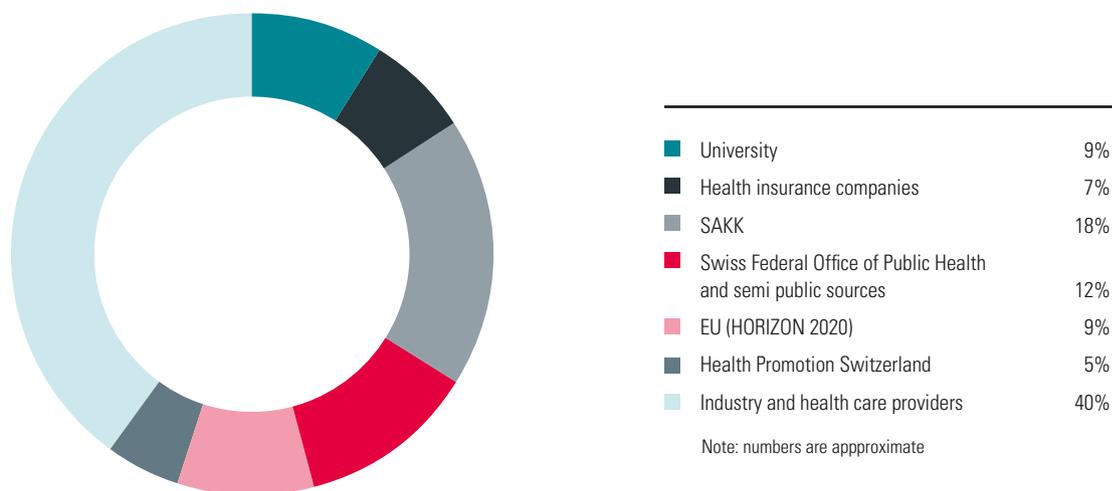
Additional scientific aims are to expand research using administrative datasets provided by health insurance companies, and research on methodological topics in health economic evaluation. Regulatory science and behavioral health economics are additional areas under development.



# Research.

## Overview of activities.

Sources of project funding in 2020



### Local academic collaborations

- Prof. Stefan Felder, Health Economics, Faculty of Business and Economics, University of Basel
- Prof. Kaspar Wyss, Swiss Centre for International Health (SCIH), and Prof. Günther Fink, Household Economics and Health Systems Research, Swiss Tropical and Public Health Institute Basel
- Prof. Heiner Bucher and Prof. Matthias Briel, Basel Institute for Clinical Epidemiology and Biostatistics (ceb), University Hospital Basel
- Prof. Christoph Meier, Pharmacoepidemiology Unit, University of Basel, and Hospital Pharmacy Basel, University Hospital Basel
- Prof. Kurt Hersberger, Pharmaceutical Care Research Group, Faculty of Science, University of Basel
- Institute of Nursing Sciences, University of Basel
- Clinical units at the University Hospital Basel

### Collaborations with national and international academic and public entities

- Epidemiology, Biostatistics and Prevention Institute, University of Zurich
- University Hospital Zurich
- Institute of Social and Preventive Medicine, University of Bern
- Swiss Group for Clinical Cancer Research (SAKK)
- Swiss Federal Office of Public Health (BAG)

### Collaborations with private entities

- Helsana Group Dübendorf
- Germany Breast Group, Neu-Isenburg, Germany
- Pharmaceutical companies

# Research. New Projects.

<b>New</b>	
Title:	Cost-effectiveness and budget impact of a new treatment of Alzheimer's disease
Project lead & contributors:	AB, MS
Hypothesis / Objectives:	Cost-effectiveness and budget impact of a new treatment of Alzheimer's disease in Switzerland
Start date:	11/2020
Partner(s):	Industry
Output:	Pending
Source of funding:	Industry

<b>New</b>	
Title:	Impact and economics of PCSK9 inhibitor treatment in Switzerland
Project lead & contributors:	PS, KG, MS
Hypothesis / Objectives:	Burden of disease, budget impact and cost-effectiveness modelling for a small molecule PCSK9 inhibitor, for Switzerland
Start date:	09/2020
Partner(s):	Industry
Output:	Pending
Source of funding:	Industry

<b>New</b>	
Title:	Budget impact of multiple sclerosis treatment
Project lead & contributors:	STS, AB, MS
Hypothesis / Objectives:	Budget impact analysis for a new multiple sclerosis treatment, for Switzerland
Start date:	08/2020
Partner(s):	Industry
Output:	Pending
Source of funding:	Industry

<b>New</b>	
Title:	Cost-effectiveness of chronic lymphocytic leukaemia treatment
Project lead & contributors:	MB, AB, MS
Hypothesis / Objectives:	Cost of effectiveness of second-line treatments of chronic lymphocytic leukaemia in Switzerland
Start date:	02/2020
Partner(s):	Industry
Output:	Pending
Source of funding:	Industry

**New**

<b>Title:</b>	<b>Estimation of influenza hospitalisations from Medical Statistics of Hospitals</b>
Project lead & contributors:	NSch, KG, MS
Hypothesis / Objectives:	Pilot study to assess if the Medical Statistics of Hospitals (Federal Office of Statistics) can be used to validly identify influenza hospitalizations
Start date:	03/2020
Partner(s):	Epidemiology, Biostatistics and Prevention Institute, University of Zürich
Output:	Pending
Source of funding:	Swiss Federal Office of Public Health

**New**

<b>Title:</b>	<b>Budget impact of GCSF biosimilars</b>
Project lead & contributors:	STS, MS
Hypothesis / Objectives:	Assess budget impact of GCSF biosimilars in Switzerland, for different pricing strategies/ assumptions
Start date:	01/2020
Partner(s):	Industry
Output:	Report
Source of funding:	Industry

# Research.

## Ongoing projects.

<b>Ongoing</b>	
Title:	Swiss Atrial Fibrillation Cohort Study
Project lead & contributors:	MS
Hypothesis / Objectives:	ECPM: study health economic implications of atrial fibrillation and health economic properties of related treatments
Start date:	04/2018
Partner(s):	Prof. Stefan Osswald, Kardiologie, Universitätsspital Basel
Output:	Abstracts, peer-reviewed publications
Source of funding:	Swiss National Science Foundation

<b>Ongoing</b>	
Title:	Pre- versus sub-pectoral implant-based breast reconstruction after nipple-sparing mastectomy (OPBC-02 PREPEC): A pragmatic, multicenter, randomized, superiority trial
Project lead & contributors:	JL, MS
Hypothesis / Objectives:	ECPM: establish health economic properties of the compared surgical techniques
Start date:	07/2019
Partner(s):	Prof. Walter Paul Weber, Klinik für Allgemein Chirurgie, Universitätsspital Basel
Output:	Pending
Source of funding:	Swiss National Science Foundation

<b>Ongoing</b>	
Title:	Health economic analysis orphan drug epilepsy
Project lead & contributors:	MS
Hypothesis / Objectives:	Development of a cost-effectiveness analysis framework for a novel drug used in severe forms of childhood epilepsy, analysis for the United Kingdom.
Start date:	07/2019
Partner(s):	Industry
Output:	Abstracts
Source of funding:	Industry

<b>Ongoing</b>	
Title:	Evaluation project alongside a prevention project on somatoform disorders
Project lead & contributors:	NSch, MS
Hypothesis / Objectives:	Formative, outcome and impact evaluation of project: «Prävention psychosozialer Belastungsfolgen in der Somatik: ein Modellprojekt zur kollaborativen Versorgung (SomPsyNet)»
Start date:	03/2019
Partner(s):	Swiss Tropical and Public Health Institute
Output:	Internal reports
Source of funding:	Health Promotion Switzerland

**Ongoing**

Title:	Evaluation project alongside a project on falls prevention
Project lead & contributors:	NSch, MS
Hypothesis / Objectives:	Formative, outcome and impact evaluation of project: «Sturzprävention in der Gesundheitsversorgung – Überführung in die Regelversorgung (StoppSturz)»
Start date:	03/2019
Partner(s):	Swiss Tropical and Public Health Institute
Output:	Internal reports
Source of funding:	Health Promotion Switzerland

**Ongoing**

Title:	ENDOSCAPE, a clinically applicable non-viral gene delivery technology
Project lead & contributors:	SaS, MS
Hypothesis / Objectives:	<p>Gene therapy is one of the most promising treatment options for future advanced therapies in a broad range of diseases. Successful gene delivery requires the recognition of target cells as well as cytosolic and nucleosolic uptake of the gene. Currently, non-viral based gene delivery such as transfection reagents are only suitable for in vitro applications and clinical gene therapeutics delivery is accomplished via viral vectors, which still has major safety concerns and complex and costly manufacturing procedures, preventing future implementation for the treatment of diseases with large patients groups.</p> <p>In the last 15 years, a class of secondary plant metabolites has been discovered that selectively mediates endosomal escape and cytoplasmic delivery of macromolecules only at low endosomal pH, thereby inducing a 40-fold enhanced gene delivery efficacy, in vivo. The currently employed methods of applying endosomal escape enhancers and gene therapeutic product, however, do not ensure that both compounds are at the same time at the site of interaction.</p> <p>The ENDOSCAPE technology platform will develop and collect proof of concept for a non-viral gene delivery technology with increased synchronization (in time and place) of both compounds. Proof of concept of the ENDOSCAPE technology has a major impact on the therapeutic opportunities for current and future macromolecule drugs for a broad range of diseases.</p> <p>All this induces new biotech-based businesses; new research projects and creates new technology platforms for development of new macromolecule therapeutics for a broad range of disease indications. The non-viral bases ENDOSCAPE technology will enhance therapeutic efficacy with lower therapeutic dose thereby reducing costs of healthcare, improving the health of patients worldwide, and strengthening the competitive landscape of the EU in the worldwide quest for such an advanced technology.</p>
Start date:	01/2019
Partner(s):	ENDOSCAPE Consortium: Sapreme Technologies BV, Holland, Max-Planck-Gesellschaft zur Förderung der Wissenschaften EV, Germany, VIB Belgien, Freie Universität Berlin, Germany, Universidad de Santiago de Compostela, Spain, Università degli Studi di Roma Tor Vergata, Italy, Extrasynthese SAS, France, Università degli Studi di Ferrara, Italy, Universität Schweiz, Switzerland, TP21 GmbH, Germany.
Output:	Internal reports
Source of funding:	EU (HORIZON 2020, grant agreement 825730)

**Ongoing**

<b>Title:</b>	<b>Cost-effectiveness of novel multiple sclerosis drug</b>
Project lead & contributors:	NSch, CSS, AB, MS
Hypothesis / Objectives:	Assessment of health economic characteristics and cost-effectiveness of a novel multiple sclerosis drug in Switzerland
Start date:	12/2018
Partner(s):	Industry
Output:	Internal report
Source of funding:	Industry

**Ongoing**

<b>Title:</b>	<b>Cost-effectiveness of novel ophthalmology drugs</b>
Project lead & contributors:	MB, PS, MS, formerly CSS
Hypothesis / Objectives:	Assessment of health economic characteristics and cost-effectiveness of novel ophthalmology drugs in Switzerland
Start date:	12/2018
Partner(s):	Industry
Output:	Internal report
Source of funding:	Industry

**Ongoing**

<b>Title:</b>	<b>OPERAM: Optimising PharmacothERapy in the Multimorbid elderly</b>
Project lead & contributors:	MS, PS, AB, formerly ZA
Hypothesis / Objectives:	Most older adults have multiple chronic diseases (multimorbidity) and multiple medications (polypharmacy). However, multimorbid patients are often excluded from clinical trials and most guidelines address diseases in isolation. Inappropriate drug prescription and poor drug compliance are common and contribute to up to 30% of hospital admissions. OPERAM investigators developed STOPP/START criteria to detect inappropriate drug use, both over- and underuse. Applying these criteria limits unnecessary polypharmacy and reduces underuse of indicated medications, but it remains uncertain whether systematic pharmacotherapy optimisation can improve clinical outcomes and reduce costs. We propose a multi-centre randomised controlled trial to assess the impact of a userfriendly software-assisted intervention to optimise pharmacotherapy and to enhance compliance in 1900 multimorbid patients aged $\geq 75$ years. Outcomes will include drug-related hospital admissions, health care utilisation, quality of life, patient preferences and cost-effectiveness. We will also perform several network meta-analyses (NMA) to provide new comparative evidence on the most effective and safest pharmacological and non-pharmacological interventions to reduce common causes of preventable hospital admissions (e.g. falls, fractures, bleeding). Therapy optimisation in the multimorbid elderly, enhanced compliance and discontinuation of less effective interventions have the potential to improve clinical, quality of life and safety outcomes, while reducing costs. We will provide a structured method with practical software solutions for optimal prescribing and new comparative evidence from NMAs for addressing multimorbidity and polypharmacy by means of customised, patient-centred guidelines. OPERAM ultimately aims at better healthcare delivery in primary and hospital care, based on effective, safe, personalised and cost-effective interventions that can be applied to the rapidly growing older population in Europe
Start date:	05/2015
Partner(s):	OPERAM Consortium: Universität Bern, University Catholique de Louvain, Universiteit Utrecht, University College Cork, Panepistimio Ioanninon, Università degli Studi Gabriele d'Annunzio di Chieti-Pescara, TP21 GmbH
Output:	Peer-reviewed publications
Source of funding:	EU (HORIZON 2020, grant agreement 634238) and Swiss State Secretariat for Education, Research and Innovation (SERI; contract number 15.0137)

**Ongoing**

<b>Title:</b>	Health Technology Assessments (HTAs) for the Swiss Medical Board
Project lead & contributors:	MB, NSch, AB, MS
Hypothesis / Objectives:	Performance of health economic parts of HTAs for the Swiss Medical Board
Start date:	06/2014
Partner(s):	Epidemiology, Biostatistics and Prevention Institute, University of Zürich
Output:	Reports, peer-reviewed publications
Source of funding:	Swiss Medical Board

**Ongoing**

<b>Title:</b>	Drug reports based on Swiss health insurance claims data
Project lead & contributors:	NSch, MS
Hypothesis / Objectives:	Analysis of drug use in Switzerland and related medical and economic aspects, based on Swiss health insurance data
Start date:	09/2013
Partner(s):	Basel Pharmacoepidemiology Unit and Hospital Pharmacy, University Hospital Basel
Output:	Publicly available reports published in 2014-2020. Peer-reviewed publications of sub-topics
Source of funding:	Health insurance provider

**Ongoing**

<b>Title:</b>	Health economic analysis of PENELOPE trial
Project lead & contributors:	KG, PS, MS
Hypothesis / Objectives:	Health economic evaluation alongside the randomised controlled PENELOPE trial. PENELOPE is a phase III trial of palbociclib (PD-0332991) in patients with hormone receptor positive, HER2 negative patients with primary breast cancer and a high risk of recurrence after neoadjuvant chemotherapy.
Start date:	09/2013
Partner(s):	GBG Forschungs GmbH, Neu-Isenburg, Germany
Output:	Pending
Source of funding:	Private entity, non-industry

**Ongoing**

<b>Title:</b>	Co-operative projects with the SAKK in the field of health economics and outcomes research in oncology
Project lead & contributors:	JL, STS, MB, MS
Hypothesis / Objectives:	Outcomes research, health services research and health economic evaluation projects in cooperation with Swiss Group for Clinical Cancer Research (SAKK) and hospitals
Start date:	11/2007
Partner(s):	SAKK, University Hospital Basel, other hospitals
Output:	Abstracts, peer-reviewed publications.
Source of funding:	SAKK

**Ongoing**

<b>Title:</b>	Health economic analysis alongside SAKK clinical oncology trials
<b>Project lead &amp; contributors:</b>	JL, STS, MS
<b>Hypothesis / Objectives:</b>	The treatment of patients with cancer with new drugs may not only increase overall survival but may also increase or decrease overall treatment costs. Therefore, a comparison of incurred costs with achieved benefit in the form of increased overall survival by way of a cost-effectiveness analysis is undertaken. Prospective health economic data collection is still ongoing in two randomised clinical trials. For two other clinical trials data collection was finalised by the end of 2014 and analysis started 2015. Three new studies including health economic evaluations were initialised in 2014, one more in 2015
<b>Start date:</b>	11/2007
<b>Partner(s):</b>	Swiss Group for Clinical Cancer Research (SAKK)
<b>Output:</b>	Abstracts, peer-reviewed publications
<b>Source of funding:</b>	Industry

# Research.

## Completed projects.

<b>Completed</b>	
Title:	Aktualisierung der PCG-Liste für den Schweizer Risikoausgleich
Project lead & contributors:	KS, MS
Hypothesis / Objectives:	Update of list of Pharmaceutical Cost Groups for use with the risk adjustment scheme of the Swiss statutory health insurance
Start date:	05/2018
Partner(s):	Polynomics AG; Pharmaceutical Care Research Group, University of Basel
Output:	Report, publication
Source of funding:	Swiss Federal Office of Public Health

<b>Completed</b>	
Title:	Scoping for Health Technology Assessment (HTA) on vitamin D testing
Project lead & contributors:	AB, KS, MS, formerly CSS
Hypothesis / Objectives:	Scoping assessment of HTA domains in vitamin D testing
Start date:	01/2018
Partner(s):	Epidemiology, Biostatistics and Prevention Institute, University of Zürich
Output:	HTA Scoping Report
Source of funding:	Swiss Federal Office of Public Health

<b>Completed</b>	
Title:	Pill Protect®: health-economic performance characteristics and implications for health care financing
Project lead & contributors:	ML, NSch, MS, formerly CSS, ZA
Hypothesis / Objectives:	Pill Protect: health-economic performance characteristics and implications for health care funding
Start date:	08/2016
Partner(s):	Industry
Output:	Abstract, peer-reviewed publication
Source of funding:	Commission for Technology and Innovation (CTI), industry

<b>Completed</b>	
Title:	Cost-effectiveness of hyperkalemia treatment
Project lead & contributors:	MS, formerly CSS, ZA
Hypothesis / Objectives:	Cost-effectiveness of hyperkalemia treatment
Start date:	05/2016
Partner(s):	Industry
Output:	Abstracts, peer-reviewed publication
Source of funding:	Industry

# Activities of the ECPM collaborators in 2020.

## Publications, Scientific Presentations, Evaluation of Research Projects and Thesis Supervision.

### Publications

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1. **Bhadhuri A**, Sutherland CS, Suter-Zimmermann K, **Schwenkglenks M**, Rohrmann S, Hysaj O, Tomonaga Y, Pestoni G, Karavasiloglou N. Vitamin D testing. Swiss Federal Office of Public Health. <https://www.bag.admin.ch/bag/en/home/versicherungen/krankenversicherung/krankenversicherung-bezeichnung-der-leistungen/re-evaluation-hta/scoping-berichte.html>.
2. **Schur N**, Twerenbold S, Reinau D, **Schwenkglenks M**, Meier C. Helsana-Arzneimittelreport für die Schweiz 2020. <https://www.helsana.ch/de/helsana-gruppe/medien-publikationen/mitteilungen/arzneimittelreport-2020.html>.
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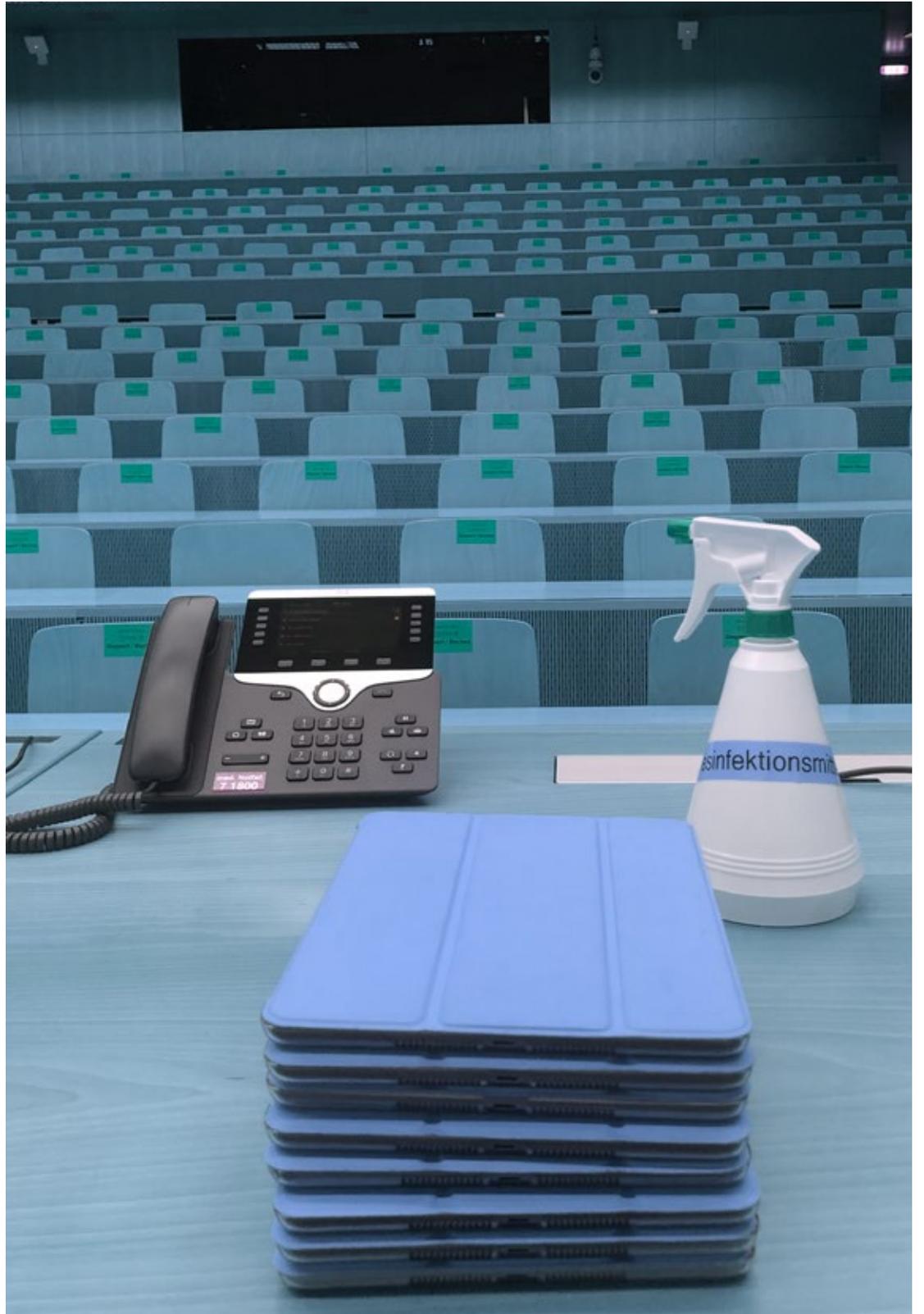
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## Scientific Presentations to External Audiences

Presenter (name, function)	Presentation title	Event (title, location, date)
<b>Szucs TD</b> , Director	Diabetes und die Herausforderungen für die Gesundheitspolitik und Strukturen	Keynote Referat am wissenschaftlichen Seminar der Kerngruppe Diabetologie & Endokrinologie 2020, Flüeli-Ranft, 17. Januar 2020
<b>Szucs TD</b> , Director	Funding Costly Innovations - Challenges and Opportunities	Annual Research Meeting (ARM), Departement Pharmazeutische Wissenschaften, Universität Basel, Basel, 30. Januar 2020
<b>Szucs TD</b> , Director	Legal aspects of genetic testing	7th Introductory Course in Genetic Counseling in Oncology 2020, St. Gallen, 28. Februar 2020
<b>Szucs TD</b> , Director	Healthcare Systems in the World and the Trends for Reform	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 2, 2020
<b>Szucs TD</b> , Director	Academic, Industry and Government Partnerships to Enhance Pharmaceutical Productivity	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 2, 2020
<b>Szucs TD</b> , Director	Machen Krankenversicherer die Spitäler wirklich kaputt?	Chefarzt Treffen, Sils Maria, 22. August 2020
<b>Szucs TD</b> , Director	Decision for Full Development	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, September 18, 2020
<b>Szucs TD</b> , Director	Navigation in Zeiten von COVID-19 - Herausforderungen für Krankenversicherer und das Gesundheitswesen	Schweizerischer Versicherungsverband SVV, Basel, 22. September 2020
<b>Szucs TD</b> , Director	Choice of Endpoints: Continuous, Dichotomous, Composite and Survival	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, October 19, 2020
<b>Szucs TD</b> , Director	Patient-Reported Outcomes and Quality of Life Measurements	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, October 19, 2020
<b>Szucs TD</b> , Director	How to Deal with Missing Data	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, October 21, 2020
<b>Szucs TD</b> , Director	Principles of Post-marketing Safety and Pharmacovigilance	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, November 23, 2020
<b>Szucs TD</b> , Director	Pharmacoeconomics – Introduction	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, November 25, 2020
<b>Szucs TD</b> , Director	Bringing innovation to the European Market - Challenges and Hurdles	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, November 27, 2020
<b>Schwenkglenks M</b> , Head of Research	Kosten-Nutzen: Rechnet sich Krebsfrüherkennung im Endeffekt?	Nationale Tagung Krebsfrüherkennung 2020, Bern, September 24, 2020



## Evaluation of Research Projects and Publications (peer review)

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**Thomas D. Szucs** is a reviewer for a number of clinical and health economic journals including Annals of Oncology, Pharmacoeconomics, Lancet and Swiss Medical Weekly.

**Annette Mollet** is a reviewer for the journal Frontiers in Pharmacology.

**Matthias Schwenkglens** is a reviewer for a number of clinical and health economic journals, recently including Advances In Therapy, Current Medical Research & Opinion, European Journal of Health Economics, JNCI Cancer Spectrum, Osteoporosis International, PLOS Medicine, PLOS One, Swiss Medical Weekly. He serves as a member of the Editorial Board of Medical Decision Making, a renowned health economics journal.

## Theses Supervised by the ECPM Collaborators in 2020

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### PhD Theses

**Wenjia Wei**, Regional Variation and Influencing Factors in the Utilization of Diverse Healthcare Services: a Comprehensive Analysis Approach (PhD thesis at University of Zürich)  
Completed in 2020; supervised by M. Schwenkglens

**Agne Ulyte**, Clinical Practice Guidelines and Geographic Variation in Utilization of Health Care Services in Switzerland (PhD thesis at University of Zürich)  
Completed in 2020; co-supervised by M. Schwenkglens

**Helena Aebersold**, Health economic aspects of atrial fibrillation: analyses based on the Swiss AF cohort study (working title; PhD thesis at University of Zürich)  
Started in 2020; supervised by M. Schwenkglens

**Jennifer Auxier**, The Exploration of the role of Patient Engagement in Woman and Family Centered Care Approaches Within Maternity and Neonatal Care (working title; PhD thesis at University of Turku, Finland)  
Ongoing in 2020; co-supervised by Matthias Schwenkglens

**Renato Mattli**, Scaling up cost-effective physical activity interventions in a culturally diverse setting (PhD thesis in cooperation with Swiss TPH, Department of Sports Science and ZHAW Winterthur)  
Defended in 2020.

**Chiara Jeiziner**, Analysis of Pharmacogenetic Information in Summaries of Product Characteristics by Natural Language Processing (PhD thesis)  
Ongoing in 2019; co-supervised by Kurt Hersberger, Henriette von Schwabedissen and Thomas Szucs

**Master Theses: MBA, MMD and MPH**

**Alessandro Crimi**, Novel approaches in antiretroviral therapies retention and demand estimation for AIDS patients in Zimbabwe – Master in Business Administration (MBA) International Health Management (IHM) thesis with Swiss TPH. External expert for an MSc defence.

**Daniela Fazzotta**, The Future of CAR-T Cell Therapy, MMD Thesis, ECPM Basel  
Ongoing in 2020; supervised by Thomas Szucs, Annette Mollet

**Cristiana Sessa**, Patients involvement and EUPATI Switzerland, MMD thesis, ECPM Basel  
Defended in 2020; supervised by Thomas Szucs, Annette Mollet and David Härri

**Claudine Bommer**, Cost-utility analysis of prophylactic risk-reducing strategies to prevent breast and ovarian cancer in BRCA mutation carriers in Switzerland (MPH thesis)  
Defended in 2020; supervised by Judith Lupatsch and Matthias Schwenkglens

**Barbara Gubler-Gut,**

Cost-effectiveness of physical activity intervention in cancer survivors: A systematic review (MPH thesis)

Defended in 2020; co-supervised by Matthias Schwenkglens

**Olivier Schorr**, Microelimination of chronic hepatitis C in Switzerland: modeling for the canton of Bern (MPH thesis)

Started in 2020; supervised by Matthias Schwenkglens







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