



University
of Basel

Faculty of
Medicine



ECPM – European Center of Pharmaceutical Medicine

Institute of Pharmaceutical Medicine

Annual Report 2019.

ECPM[®]
European Center of Pharmaceutical Medicine

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The ECPM at a glance

In 2019 the ECPM

- Started the 15th ECPM course cycle with 100 participants (1925 participants since 1991)
 - Collaborated with 150 faculty members from different affiliations
 - Developed and offered special modules and lecture series
 - Conducted a study trip to Canada
 - Was involved in graduate and postgraduate teaching of ten different programs
 - Acquired about 780,000 Swiss Francs in third-party research funding
- Worked on 17 research projects
 - Completed four research projects
 - Authored and co-authored 20 published peer-reviewed articles and multiple conference abstracts
 - Gave multiple scientific presentations to external audiences
 - Employed 12 people

Activities in a nutshell

Research

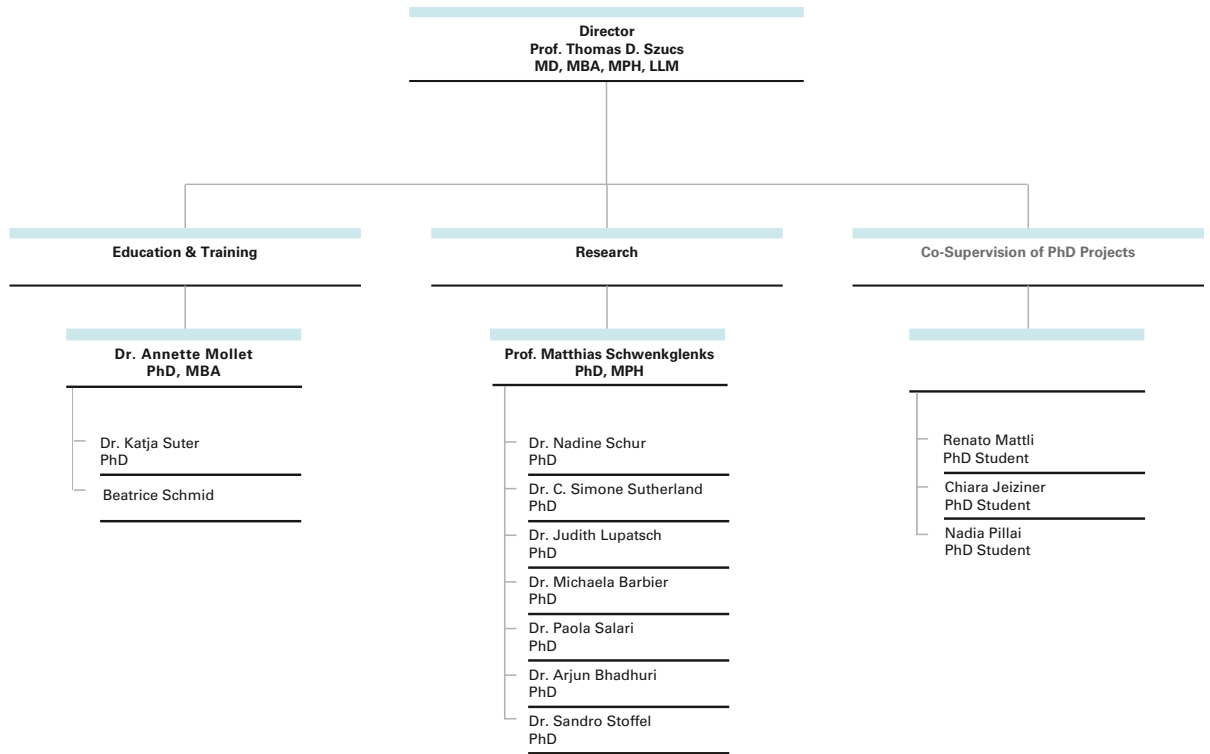
- Health Technology Assessment
- Health Economics and Pharmacoeconomics
- Decision-Analytic Modeling
- Health Services Research
- Epidemiology; Observational Study and Clinical Trial Design
- Biostatistics

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: Six
 - MPH MAS theses: One
 - MMD MAS theses: Six
- 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



Organizational chart



European Center of Pharmaceutical Medicine

Institute of Pharmaceutical Medicine



Director

Thomas D. Szucs, MD MBA MPH LL.M., is Professor in Pharmaceutical Medicine and Director of the European Center of Pharmaceutical Medicine (ECPM)/Institute of Pharmaceutical Medicine at the University of Basel.

Previously he was Chief Medical Officer of Hirslanden Holding, the largest group of private hospitals in Switzerland. From 1998 to 2001 he was Head of the Department of Medical Economics, a joint venture of the University Hospital of Zurich and the Institute of Epidemiology, Biostatistics and Prevention formerly named 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 Ludwig Maximilian 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 (HSG), a Master of Public Health degree from Harvard University, and is board certified in Pharmaceutical Medicine as well as in Prevention and Public Health. He has also received a Master of Laws (LLM) in International Business Law with a specialization in information and technology law from the University of Zurich. He serves as a Member of the Editorial Board of several scientific journals and has published more than 400 scientific articles, book chapters and monographs.

Professor Szucs was appointed Professor in Pharmacology/Pharmacoeconomics at the School of Pharmacy of the University of Milan in 1996 and Associate Professor for Medical Economics at the University of Zurich in 2002. He was appointed for the newly inaugurated professorship in Pharmaceutical Medicine at the University of Basel in 2009.

In 2010 he was appointed Honorary Professor at Peking University. In June 2012 Professor Szucs was elected to direct the faculty assembly of the Medical Faculty of the University of Basel. In addition, he was elected to represent the Swiss Society of Pharmaceutical Medicine (SGPM) in the Senate of the Swiss Academy of Medical Sciences. Currently, Professor Szucs is Chair of the Master of Public Health Program of the Universities of Basel, Berne and Zurich; additionally, he chairs the examination committee of the Swiss Association of Pharmaceutical Medicine.

In the fall academic semester of 2013/2014 Professor Szucs took a sabbatical in order to practice clinical medicine at the Hirslanden Clinic in Zurich. Apart from clinical duties and rotations, he conducted research on drug safety by analyzing in-house prescriptions. He initiated a personalized medicine practice focusing on pharmacogenetics and pharmacogenomics at the Hirslanden Clinic in Zurich.

In October 2014 Professor Szucs received the annual prize of the Swiss Society of Health Economics, in recognition of his service as President to this society as well as his endeavor to broaden and strengthen the field of Health Economics in the Switzerland. In November 2014, Professor Szucs received a lifetime honorary professorship at the Peking University Health Science Center in recognition for his past and ongoing support of the Chinese course on drug development and regulatory sciences.

In July 2019 the World Congress of Health Economics (iHEA) was hosted at the Congress Center of the Messe in Basel and attracted 2'500 participants. Professor Szucs and Professor Felder were members of the local steering committee and represented the Faculties of Medicine and Economics, respectively.

In 2016 Professor Szucs was rated among the 20 most influential economists in Switzerland.

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 with emphasis on non-clinical and clinical development as well as regulatory affairs.

Annette subsequently worked in the clinical R&D department at F. Hoffmann-La Roche Ltd. in Basel, where she conducted clinical trials in the fields of AIDS and anticoagulation therapeutics. In addition she worked as a Medical and Product Manager responsible for oncology products at the Swiss affiliate of Roche.

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.



Course Director

Katja Suter, PhD is Course Director in Training and Education of the European Center of Pharmaceutical Medicine at the University of Basel since 2017.

She received her MSc in Pharmacy in 2003 and her PhD in 2007 from the University of Basel. During her thesis she studied the pharmacokinetics of nasally delivered drugs.

She joined the Basel Institute for Clinical Epidemiology and Biostatistics (Ceb) as a research

scientist and was involved in performing health technology assessments and systematic reviews. From 2009 to 2016 she worked in the hospital pharmacy of the University Hospital of Basel and completed her specialization in Hospital Pharmacy FPH in 2010.

Since 2007 Katja is involved in the undergraduate education at the Faculty of Medicine and since 2016 she teaches the basics of evidence-based pharmacy at the Department of Pharmacy of the University of Basel.



Administrator and Course Organizer

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 division sec-

retariat 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.



The ECPM course module taking place in the Pathology Lecture Hall due to the refurbishment of the Pharmcenter.

Research. Personnel.

The European Center of Pharmaceutical Medicine (ECPM) 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 pharmacoeconomic 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 the ECPM 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, postoperative pain management, 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 also 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.

He 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 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 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 Berne, where she became interested in econometrics and health economics.

Her thesis was on further developing and better modeling of 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 Berne where she had the chance to deepen her modeling and data analyses skills, especially in cancer epidemiology. After the PhD she went for a post-doctoral fellowship to the Institute national de la santé et de la recherche médicale (INSERM) in Paris.

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, epidemiology and health service research.



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 modelling 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 of diseases, and cost-effectiveness analysis.



Senior Research Scientist

C. Simone Sutherland, PhD is a Senior Research Scientist at the European Center of Pharmaceutical Medicine since 2016.

She worked as a Clinical Research Professional for many years in Canada prior to developing an interest in health economics. In 2013, after working as a Research Associate at the Programs for Assessment of Technology in Health (PATH) Research Institute, she pursued a Master in Health Economics and Decision Modeling at the University of Sheffield. Upon graduating with merit, she returned to the PATH Research Institute, where she continued assessing the clinical and cost outcomes of new technologies for projects with Health Quality Ontario (HQO).

In order to expand on her knowledge of diseases and modeling, she came to Switzerland in 2014 to complete a PhD in Epidemiology at the Swiss Tropical and Public Health Institute (Swiss TPH), with a combined focus on dynamical modeling

and economic evaluation for interventions related to eliminating human African trypanosomiasis. Upon completion of her PhD, Simone joined the ECPM as a Research Scientist.

She has been involved in teaching health economics to students at a master’s level since 2015, and during her years of research, has had the opportunity to develop various techniques in health research methodology from systematic reviews to disease modeling. In addition, she has acquired knowledge of a wide range of diseases and interventions including diabetes, cardiovascular disease, COPD, schizophrenia, chronic kidney disease and diagnostic testing.

Her current interests remain in health decision-making methods for ailments that are prevalent in the western hemisphere, but also expand to concerns in developing economies with a focus on neglected tropical diseases.



Research Scientist

Arjun Bhadhuri, PhD is a Research Scientist and Health Economist 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

Paola Salari, PhD is a Research Scientist 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 University of Lugano, where she focused on the functioning of the Swiss health care system and had the chance to deepen her quantitative research and analytics skills.

After her PhD, she joined the Swiss Tropical and Public Health (Swiss TPH) Institute in Basel, as Postdoctoral Scientific Collaborator, where she has been conducting research in the field of global health. In particular, she carried out socio-economic 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 currently working on a cost-effectiveness analysis alongside a cluster randomized clinical trial conducted in a particular category of elderly people.



Research Scientist

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

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. The title of his thesis is “scaling up cost-effective physical activity interventions in a culturally diverse setting”.



PhD Candidate

Nadia Pillai defended her thesis in October 2019 at the Center for Primary Care and Public Health (Unisanté), University of Lausanne, Switzerland and collaborating with the ECPM on economic modelling methods related to her PhD work. After completing a Bachelors in Psychology at the University of St Andrews, UK, Nadia pursued a Master's in Public Health from Imperial College London, UK, where she received training in health economics and decision modelling. Her PhD evaluates the cost and cost-effectiveness of new interventions for inflammatory bowel dis-

ease using patient-level real world data from Switzerland. Prior to starting the PhD, Nadia worked at the Swiss Tropical and Public Health Institute, Basel, Switzerland, on projects related to health care costing in low- and middle-income countries. In addition, she gained consulting experience leading studies using real world data and supporting evidence generation for health technology assessments. Her main research interests lie in the application of economic modelling to chronic and infectious diseases in various health care settings.



PhD Candidate

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

“implementation of pharmacogenotyping in pharmaceutical care”. In collaboration with Katja Suter from 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



Meet the expert lecture during the study trip.

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 Pharmcenter of the University of Basel, as well as at the Medical/Science Faculty of the University of Zurich. Lectures are held in English and German. Please refer to the list with the overview on teaching and training activities.

Postgraduate Training

The largest training offer remains the ECPM Diploma Course with 100 participants running over two years. The current course cycle started in September 2019 and will run until August 2021. The course has been running successfully for 28 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 January 2012 the ECPM received the “Centre of Excellence” accreditation by the Innovative Medicines Initiative (IMI) PharmaTrain. Re-accreditation was received in 2018. 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. Within the lap of PharmaTrain, 12 universities in Europe were recognized as “Centres of Excellence” now allowing a mutual acceptance of trainees and credit points.

The following postgraduate courses were offered in 2019:

Diploma Course (DAS) in Pharmaceutical Medicine

The 15th 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.

Presentation and Communication Skills

In collaboration with Vivion Communication

This two-day course offers an intense interactive, hands-on program designed to build and expand essential presentation skills, persuasive power, and personal presence. The course was offered twice in February and November 2019.

Follow-on Drugs: Generic, Biosimilar & Non-Biological Similar Medicinal Products

In collaboration with Semmelweis University, Budapest

The program provides insights to the scientific and regulatory basis of various types of follow-on drugs: generic, biosimilar and non-biological

similar medicinal products and understand their significance in the life-cycle management of medicines. It was the last time that this module was organized in Budapest by Professor Sandor Kerpel Fronius. In 2020 this program is transferred to Basel and offered by the ECPM.

Fundamentals in Health Economics

This course provides the participants with an understanding of the key principles and methodological concepts of health economics. The role of health-economic thinking in the drug development process is addressed. Two group exercises will complement lectures and discussions.

Study Trip to Canada

In collaboration with the Swiss Society of Health Economics and Health Sciences

Canada is a federally structured country with a public health service (Medicare) available to the entire population. With a share of health care spending of 10.1% of GDP (2015), Canada is among the top OECD countries. The public health service is financed in particular – by about 70% – through non-earmarked taxes at federal and provincial level.



Reception at the Swiss Consulat General in Montréal.

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), by the Swiss Medical Association (www.fmh.ch) and the Swiss Association of Pharmaceutical Professionals (www.swapp.ch) to cover the theoretical training and the examination for specialization and board certification. All accreditations are reviewed on a regular basis and 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 and two candidates finished in 2019. 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 internationally 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 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 has been shifted to 2021.



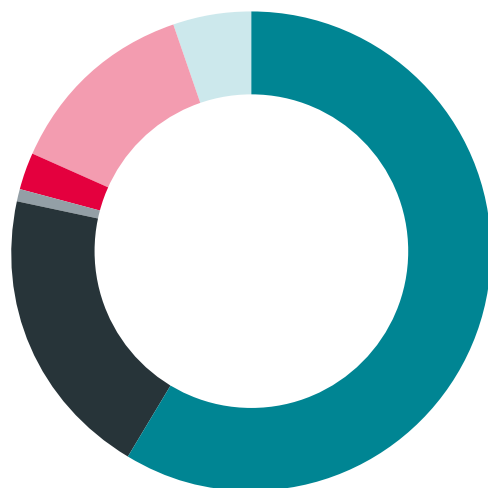
Participants of the 15th ECPM Course Cycle (2019-2021).

Education & Training.

Overview of activities.

Overview of 2019–2021 Figures

Affiliations of Course Participants



Workplace of students

Big Pharma top 20	68
Small to Medium Size Pharma	23
CRO	1
Regulatory Authority	3
University Hospitals	15
Governmental Bodies	6
Total	116

Educational Background



Educational Background of students

(2019 – 2021)

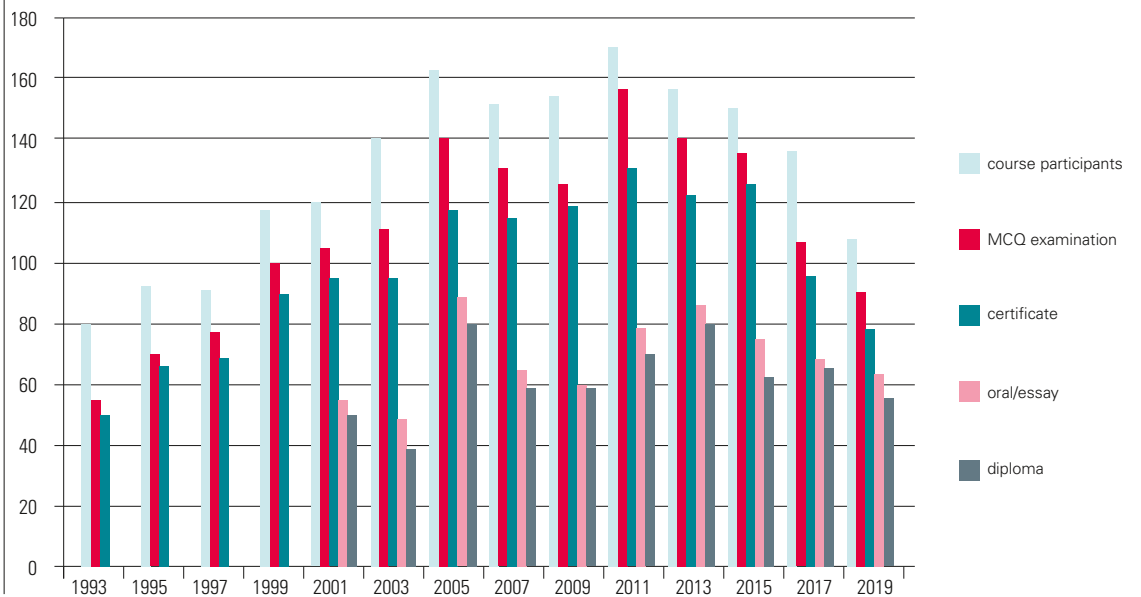
Bachelor, Master of Arts	2
Bachelor of Science	5
MSc Life Science	11
MSc Pharmacy	6
MSc Communication, Business	2
PhD	39
MD	35
MD, PhD	5
MD, MPH	1
Life Science Engineering	2
Business Engineering	2
Economics	2
MBA	9
Total no of students	121

Age groups



2019 – 2021	
≤ 30 years	10
31 – 35 years	22
36 – 40 years	35
41 – 45 years	25
46 – 50 years	16
51 – 55 years	8
Total age groups	116

Examination



ECPM 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.

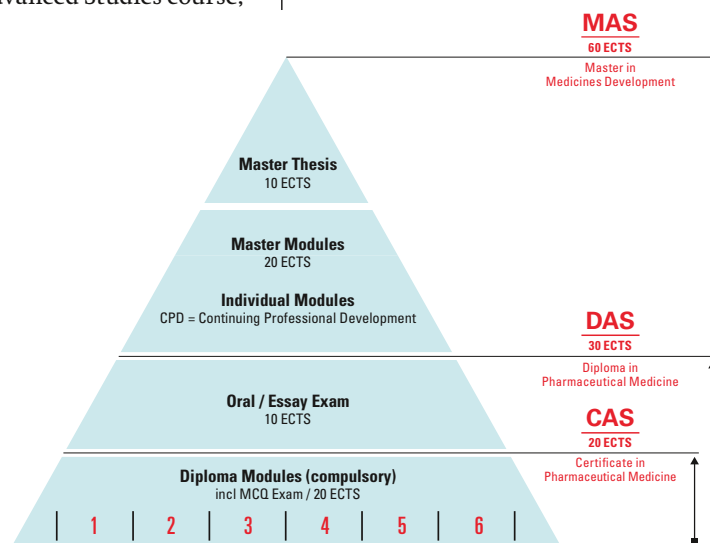
The ECPM training platform offers undergraduate/graduate training for students in medicine, human biology, epidemiology, public health and pharmacy as well as postgraduate training on three different levels in the field of Pharmaceutical Medicine/Drug Development Sciences.

The first 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 CPD short courses and a thesis to achieve the Master of Advanced Studies in Medicines Development (MAS, 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

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

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

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 <https://ecpm.unibas.ch/continuing-education/postgraduate-courses/cpd>.

Examination

On August 20, 2019 and September 10, 2019 the final examination of the ECPM course cycle 14 was offered.

Multiple Choice Questions (MCQ) Examination (August 20, 2019)

For the third time the MCQ examination and the Essay examinations were performed on an i-pad, using the BeAxi tool (developed and maintained by a spin-off company of the Medical Faculty of the University of Basel). The MCQ examination comprises 120 questions covering all 13 topics of the PharmaTrain syllabus. 90 course participants registered for this examination. The Institute for Examination Research (IML) at the University in Berne performed the analysis of the data and the cut-off threshold is defined in a grading conference based on blinded data.

The failure rate was 12.2%, which means that 79 students passed and 11 failed the examination. This result is in the usual range of around 13%.

Oral/Essay Examination (August 20 and September 10, 2019)

62 course participants decided to take the second part of the examination, comprising an oral and three short essay examinations. The oral examination is a discussion based on a peer reviewed scientific paper and the essay questions cover three topics: clinical development, regulatory affairs and safety/pharmacovigilance. The grades are calculated from the mean value of the two examinations. 55 students passed and seven failed (11.2%). 13 candidates were MDs who are striving for a specialist title in pharmaceutical medicine. All candidates passed.

The successful MCQ examination reveals a Certificate of Advanced Studies (CAS) in Pharmaceutical Medicine and passing both the oral and essay examinations provides a Diploma of Advanced Studies (DAS) in Pharmaceutical Medicine. To fulfill the theoretical part of the specialist title in Pharmaceutical Medicine and the SwAPP diploma (equal title for MScs and PhDs), both parts needed to be successful.

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)

A Certificate of Attendance from the University of Basel will be awarded after successful completion of each e-learning program (1 ECTS).

Projects in 2019

- Module on “Medical and Scientific Writing”
- Module on “Fundamentals in Health Economics”
- Summer Institute at George Washington University (fourth edition)
- Four master thesis in medicine’s development supervised and two completed and published
- Scientific program of the joint annual meeting 2019 of the Swiss Association of Pharmaceutical Professionals and Physicians (SwAPP and SGPM)

Planned Projects for 2020

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

- New edition of the course “Project Management in the Life Science Industry”
- Study Trip to China postponed to 2021
- Follow-on Drugs: Generic, Biosimilar & Non-Biological Similar Medicinal Products
- Ethical and Legal Concepts of Clinical Trials
- Scientific program of the joint annual meeting 2020 of the Swiss Association of Pharmaceutical Professionals and Physicians (SwAPP and SGPM)
- Second edition of the “Genetic Counselling course”

Expertise for Approval of Radioactive Diagnostics and Therapeutics

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

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

Postgraduate Training Activities

The ECPM has been provisionally recognized as a training center for the board certification for physicians in Prevention and Public Health. For the Swiss board certification for physicians (FMH) in pharmaceutical medicine, the ECPM is partnering with the SAKK (Swiss Group for Clinical Cancer Research) to create a joint center for continuing education in this field. Currently both positions are open.

Undergraduate Teaching at the University of Basel Medical School

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, 1. Studienjahr, Bachelor BA.
5. Szucs TD, Gesundheitsökonomie, 2. Studienjahr Master MA.
6. Schwenkglens M, Michaela Barbier. 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. Schwenkglens M, Schur N. Kleingruppenseminare im Themenblock Körper, Subjekt, Umwelt, 1. Studienjahr Medizin Bachelor. (Themen: Soll man Statine in der Prävention der koronaren Herzkrankheit einsetzen? Stehen Kosten und Nutzen im Verhältnis bei der Homöopathie?) Wieso so teuer? Die medikamentöse Behandlung der chronischen Hepatitis C).
9. C. Simone Sutherland, JE. Lupatsch, A. Bhadhuri. 41127 Advanced Research Methods - Health Economics. 3. Master and PhD students.
10. Suter K. Tutorate im POEM (Patienten-orientierte evidenzbasierte Medizin), clinical Epidemiology I: critical appraisal (treatment); 3. Studienjahr Medizin (3 × 2 lessons = 6 lessons).

Undergraduate Teaching at the University of Basel, Faculty of Science

11. Mollet A. Lecture forming part of 14435 - Special Topics of Clinical Pharmacology, Master Drug Sciences.
12. Suter K. 44826-01 Evidence Based Pharmacy I- Basics (12 lessons), Master Pharmazie.
13. Suter K. Lectures forming part of 48174-01 Evidence Based Pharmacy II – Research Methods, Master Pharmazie (3 lessons).
14. Schwenkglens M. Lectures forming part of 20458-01 – Essentials in Drug Development & Clinical Trials.

Undergraduate Teaching at the University of Zurich

15. Szucs TD, Mollet A. Mantelstudium Arzneimittelentwicklung. 2.–4. Studienjahr Medizin Bachelor, Universität Zürich.
16. Schwenkglenks M, Szucs TD, Mollet A. BME310 – Research methodology for studies on human health and disease. 3. Studienjahr Biomedicine Master.
17. Szucs TD, Schwenkglenks M, Mollet A. BME329 – Developing New Medicines: An Introduction. 3. Studienjahr Biomedicine Master (responsible PD Dr. Patricia Blank).
18. Schwenkglenks M, Szucs TD. BME18 – Clinical epidemiology and quantitative research in health care. 3. Studienjahr Biomedicine Master.

Undergraduate Teaching at the University of Bern

19. 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

20. Mollet A, Szucs TD, Schwenkglenks M. Lectures forming part of the ECPM Course in Pharmaceutical Medicine.
21. Schwenkglenks M, Mattli M. Gesundheitsökonomische Modellierung – Hands-on. Course forming part of the Postgraduate Master Program in Public Health.
22. Katja Suter. Lecture “Patient Protection in Clinical Trials – The Role of Swiss Regulatory Authorities during ECPM MAS Module Ethical and Legal Aspects of Clinical Trials, (1 lesson).
23. Sutherland CS. Lecture “Priority setting for health management: The role of economic evaluation in decision making”. Module 8 from the MBA in International Health Management, Swiss TPH (responsible Patrick Hanlon, Swiss TPH).
24. Sutherland CS, Szucs TD, Schwenkglenks M. Lecture “Basics in Health Economics” in Essentials in Health Research Methodology course forming part of the PhD Program Health Sciences (PPHS), Department of Clinical Research.
25. Sutherland CS, Lupatsch JE, Bhadhuri A. 41127 Advanced Research Methods - Health Economics. Master and PhD students, Institute of Nursing Sciences.
26. Sutherland CS. CAS Clinical Research II, Module 3 – Health economic aspects of clinical research. Master and PhD students. Department of Clinical Research (Dept Klinische Forschung), Clinical Trial Unit (CTU).
27. Sutherland CS, Bhadhuri A. Essentials in Health Research Methodology, Topic 3 – Basics of Health Economics. PhD students, PhD Program Health Sciences (PPHS).
28. Schwenkglenks M, Continued Education, MAS Spiritual Care, Uni Basel: Lecture “Einführung Gesundheitsökonomie”.

Postgraduate Teaching at the University of Zurich

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

Postgraduate Teaching at the University of Liechtenstein

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

Research.

Current Status.

The European Center of Pharmaceutical Medicine (ECPM) has been active in research since 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 2019, 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 packages. 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 sixth 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

- Pharmacoeconomics
- Health economics
- Decision-analytic modelling
- Epidemiology
- Outcomes research
- Clinical and observational study designs
- Biostatistics

Main Areas of Activity

- Oncology and hematology
- Cardiovascular disease and heart failure
- 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 2019 reflect the 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, most importantly in the context of the S-CORE network.

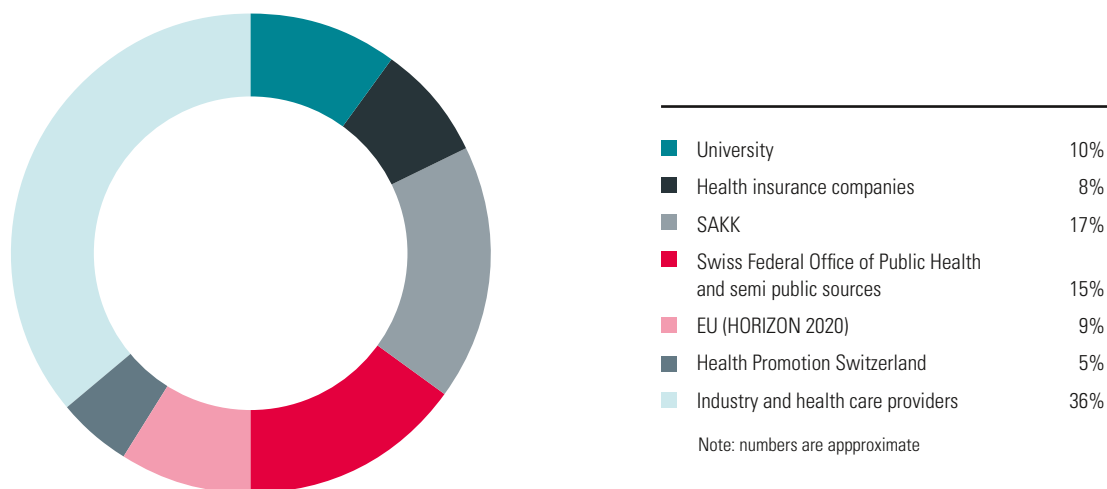
Additional scientific aims are to expand research using administrative datasets provided by health insurance companies, and research on methodological topics in health economic evaluation. Regulatory science and behavioral health economics are additional areas under development.



Research.

Overview of activities.

Sources of project funding in 2019



Local academic collaborations

- Prof. Stefan Felder, Health Economics, Faculty of Business and Economics, University of Basel
- 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
- Swiss Tropical and Public Health Institute
- 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)
- INC-EU Study Group, Switzerland/UK

Collaborations with private entities

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

Research. New Projects.

New

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:	Pending
Source of funding:	Industry

New

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:	Reports; peer-reviewed publications pending
Source of funding:	Health Promotion Switzerland

New

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:	Reports; peer-reviewed publications pending
Source of funding:	Health Promotion Switzerland

New

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 based 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:	Report
Source of funding:	EU (HORIZON 2020, grant agreement 825730)

New

Title:	Cost-effectiveness of novel multiple sclerosis drug
Project lead & contributors:	NSch, AB, MS
Hypothesis / Objectives:	Assessment of cost-effectiveness of a novel multiple sclerosis drug, from the perspective of the Swiss statutory health insurance and Swiss healthcare system.
Start date:	01/2019
Partner(s):	Industry
Output:	Report; peer-reviewed publications pending
Source of funding:	Industry

Research.

Ongoing projects.

Ongoing

Title:	Cost-effectiveness of novel multiple sclerosis drug
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:	Report; peer-reviewed publication pending
Source of funding:	Industry

Ongoing

Title:	Cost-effectiveness of novel ophthalmology drugs
Project lead & contributors:	CSS, MB, PS, MS
Hypothesis / Objectives:	Assessment of health economic characteristics and cost-effectiveness of novel ophthalmology drugs in Switzerland
Start date:	12/2018
Partner(s):	Industry
Output:	Reports; peer-reviewed publication pending
Source of funding:	Industry

Ongoing

Title:	Aktualisierung der PCG-Liste für den Schweizer Risikoausgleich
Project lead & contributors:	CSS, AB, 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
Source of funding:	Swiss Federal Office of Public Health

Ongoing

Title:	Health Technology Assessment (HTA) activities for the Swiss Federal Office of Public Health
Project lead & contributors:	CSS, AB, KS, MS
Hypothesis / Objectives:	HTA activities for the Swiss Federal Office of Public Health
Start date:	01/2018
Partner(s):	Epidemiology, Biostatistics and Prevention Institute, University of Zürich
Output:	Reports
Source of funding:	Swiss Federal Office of Public Health

Ongoing	
Title:	Pill Protect®: health-economic performance characteristics and implications for health care financing
Project lead & contributors:	CSS, ML, NSch, ZA, MS
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
Ongoing	
Title:	Cost-effectiveness of hyperkalemia treatment
Project lead & contributors:	CSS, ZA, MS
Hypothesis / Objectives:	Cost-effectiveness of hyperkalemia treatment
Start date:	05/2016
Partner(s):	Industry
Output:	Abstracts, peer-reviewed publication
Source of funding:	Industry
Ongoing	
Title:	OPERAM: Optimising PharmacothERapy in the Multimorbid elderly
Project lead & contributors:	MS, PS, AB, 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 multicentre 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 ≥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

Title:	Health Technology Assessments (HTAs) for the Swiss Medical Board
Project lead & contributors:	MB, NSch, 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

Title:	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 2014-2019. Peer-reviewed publications of sub-topics
Source of funding:	Health insurance provider

Ongoing

Title:	Health economic analysis of PENELOPE trial
Project lead & contributors:	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

Title:	Co-operative projects in the field of health economics and outcomes research in oncology
Project lead & contributors:	JL, 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

Title:	Health economic analysis alongside SAKK clinical oncology trials
Project lead & contributors:	JL, MB, MS
Hypothesis / Objectives:	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
Start date:	11/2007
Partner(s):	Swiss Group for Clinical Cancer Research (SAKK)
Output:	Abstracts, peer-reviewed publications
Source of funding:	Industry

Research.

Completed projects.

Completed

Title:	Regulierungsfolgenabschätzung zur Einführung eines Referenzpreissystems in der Schweiz
Project lead & contributors:	MS
Hypothesis / Objectives:	Estimation of impact of a possible reference pricing system for pharmaceuticals in Switzerland
Start date:	05/2018
Partner(s):	Polynomics AG, INTERFACE Politikstudien Forschung Beratung GmbH
Output:	Report, publication
Source of funding:	Swiss Federal Office of Public Health

Completed

Title:	Impact of targeted therapy in patients with metastatic lung cancer
Project lead & contributors:	AB, MS
Hypothesis / Objectives:	Assessment of health economic characteristics and cost-effectiveness of targeted therapy in patients with metastatic lung cancer
Start date:	01/2018
Partner(s):	Industry
Output:	Abstract, peer-reviewed publication in preparation
Source of funding:	Industry

Completed

Title:	Effect of the Swiss human research legislation on the costs associated with randomized clinical trials in Switzerland
Project lead & contributors:	NSch, MS
Hypothesis / Objectives:	Assessment of impact of Swiss human research legislation on clinical trial costs and application timelines
Start date:	08/2015
Partner(s):	Clinical Trial Unit at University Hospital Basel
Output:	Reports, peer-reviewed publications
Source of funding:	Swiss Federal Office of Public Health

Completed

Title:	Health economics of bronchitol dry powder
Project lead & contributors:	MS
Hypothesis / Objectives:	Assessment of health economic characteristics and cost-effectiveness of mannitol dry powder in the treatment of cystic fibrosis, for different countries
Start date:	02/2013
Partner(s):	Industry
Output:	Abstract, peer-reviewed publication in preparation
Source of funding:	Industry

Activities of the ECPM collaborators in 2019.

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

Publications

1. **Szucs TD**, El Saadany T. «Learning and Confirming» in Pharmaforschung und -entwicklung. Von Sackgassen und Durchbrüchen. *conexus* 2019; 2: 63-76. doi: 10.24445/conexus.2019.02.006. <https://doi.org/10.24445/conexus.2019.02.006>
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* Shared last authorship.

Scientific Presentations to External Audiences

Presenter (name, function)	Presentation title	Event (title, location, date)
Szucs TD , Director	Pharmacoeconomics	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, November 14, 2019
Szucs TD , Director	Das Biomedizinrecht im digitalen Umbruch Forschung mit Versicherungsdaten – Pflicht oder Kür	Öffentliche Vorlesungsreihe, Universität Zürich, Zürich, 17. Oktober 2019
Szucs TD , Director	Patient-Reported Outcomes and Quality of Life Measurements	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 13-17, 2019
Szucs TD , Director	Health Economic/Outcome Research Trials and their Transferability	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 13-17, 2019
Szucs TD , Director	Systematic Reviews and Meta Analysis: How to Get It Right	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 13-17, 2019
Szucs TD , Director	How to Deal with Missing Data	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 13-17, 2019
Szucs TD , Director	Choice of Endpoints: Continuous, Dichotomous, Composite and Survival	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, August 13-17, 2019
Szucs TD , Director	A History of Drug Discovery and Research	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, June 12, 2019
Szucs TD , Director	Decision for Full Development	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, June 11, 2019
Szucs TD , Director	Koordinierte Rezepte gegen den explodierenden Kochtopf	Schweizerische Stiftung für Klinische Krebsforschung, Bern, 6. Juni 2019
Szucs TD , Director	Funding models for costly innovations	SGAIM Spring Conference, Basel, June 5, 2019
Szucs TD , Director	Künstliche Intelligenz in der klinischen Medizin – Chancen und Grenzen	Österreichische Kardiologische Gesellschaft Jahrestagung 2019, Salzburg, 31. Mai 2019
Szucs TD , Director	Genomische Medizin für Apotheker	Österreichische Apothekenkammer, Wien, 25. Mai 2019
Szucs TD , Director	Interpretation einer Pharmakoökonomischen Studie	Österreichische Apothekenkammer, Wien, 24. Mai 2019
Szucs TD , Director	Einführung in die Pharmakoökonomie	Österreichische Apothekenkammer, Wien, 24. Mai 2019
Szucs TD , Director	The Role of Drug Expenditure within the Health Market and Health Care Insurance / Module 8 Follow-on Drugs: Generic, Biosimilar & Non-Biological Similar Medicinal Products	CEMDC-PharmaTrain, Module 8, Semmelweis University Budapest, May 18, 2019
Szucs TD , Director	Reimbursement Strategies of Follow-on Medicinal Products / Module 8 Follow-on Drugs: Generic, Biosimilar & Non-Biological Similar Medicinal Products	CEMDC-PharmaTrain, Module 8, Semmelweis University Budapest, May 18, 2019
Szucs TD , Director	Pharmakogenetik	Universität Fürstentum Liechtenstein (UFL), Vaduz, 13. April 2019

Szucs TD , Director	Career Development in Life Sciences	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, March 29, 2019
Szucs TD , Director	Ethical Issues in the Context of Genomics/Genetics in Drug Development and Health Care	Chinese Course in Drug Development and Regulatory Sciences (CCDRS), Beijing, March 28, 2019
Szucs TD , Director	Herausforderungen Gesundheitsmarkt Schweiz	KPMG Insurance Market Board, Zürich, 25. März 2019
Szucs TD , Director	IO-ATCG – Wie Gene und Bytes unser Gesundheitswesen verändern werden	Rotary Club Zürich, Hotel Widder, Zürich, 22. März 2019
Szucs TD , Director	Legal Aspects of Genetic Testing	8th International Course for Genetic Counsellors, St.Gallen, March 8, 2019
Szucs TD , Director	Pharmakogenetik perioperativ – Ein Schritt in Richtung personalisierte Medizin	39. Hirslanden Academy Perioperative Medizin, Klinik Hirslanden, Zürich, 24. Januar 2019
Szucs TD , Director	Crashkurs Genetische Medizin	Klinik Hirslanden, Zürich, 16. Januar 2019
Mollet A , Head of Education & Training	The Clinical Development of Biosimilar Products	CEMDC-PharmaTrain, Module 8, Semmelweiss University Budapest, May 17, 2019
Mollet A , Head of Education & Training	The Clinical Development and Regulation of Radiopharmaceuticals	CEMDC-PharmaTrain, Module 8, Semmelweiss University Budapest, May 17, 2019
Schwenkglenks M , Head of Research	Gesundheitsökonomische Evaluation, Outcomes Research, Klinische Epidemiologie – Versuch eines Einblicks	Fortbildungsveranstaltung für die Firma Pfizer, Zürich, 16. Mai 2019
Schwenkglenks M , Head of Research	External expert (rapporteur and examiner) for PhD Thesis by Ms Marguerite KANDEL, entitled « Evaluation médico-économique de la prise en charge du mélanome métastatique en vie réelle à partir de la cohorte MelBase »	Université Paris-Saclay, France
Salari P , Research Scientist	Determinants of health insurance enrolment in Ghana: evidence from three national household surveys	Monthly Seminar, Universidad Federal De Pernambuco, Recife, August 20, 2019



The ECPM course module taking place in the Pathology Lecture Hall due to the refurbishment of the Pharmacenter.

Evaluation of Research Projects and Publications (peer review)

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 including The American Journal of Managed Care, Cardiovascular Drugs and Therapy, European Journal of Cardiovascular Prevention and Rehabilitation, Health Policy, HEART, Infection, Journal of the American Medical Association (JAMA), Journal of Clinical Oncology, Medical Decision Making, Osteoporosis International, Pharmacoeconomics, Swiss Medical Weekly and Value in Health. He serves as a member of the Editorial Board of Medical Decision Making, a renowned health economic journal.

C. Simone Sutherland is a reviewer for a number of journals including International Journal of Technology Assessment in Health Care (IJTAHC), Infectious Diseases of Poverty, Parasites & Vectors, Public Library of Science (PLOS) Neglected Tropical Diseases (NTDs), BioMed Central (BMC) Health Services and Value in Health.

Theses Supervised by the ECPM Collaborators in 2019

PhD Theses

Wenjia Wei, A comprehensive methodology approach for geographic variation analysis of healthcare services use (working title; PhD thesis at University of Zürich)

Ongoing in 2019; supervised by M. Schwenkglens

Agne Ulyte, Clinical practice guidelines and variation of healthcare services utilization (working title; PhD thesis at University of Zürich)

Ongoing in 2019; co-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 2019; 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)

Ongoing in 2019; defense planned for 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

Nadia Pillai, An economic evaluation for the cost-effectiveness of innovative treatment strategies for adults diagnosed with inflammatory bowel disease using real world data in Switzerland (PhD thesis) Defended in 2019

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.

David Spirk, Venous Thromboembolism and Renal Impairment: Insights from the Swiss Venous Thromboembolism Registry (SWIVTER), MMD thesis,
Defended in 2019, supervised by Thomas Szucs and Annette Mollet

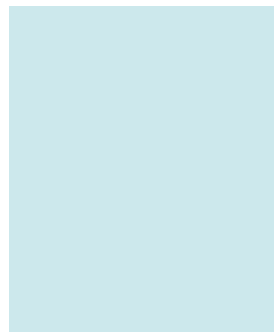
Chandra Leo, Breast cancer drug approvals by the US FDA from 1949 to 2018, MMD thesis,
Defended in 2019; supervised by Thomas Szucs and Annette Mollet

Daniela Fazzotta, The Future of CAR-T Cell Therapy, MMD Thesis, ECPM Basel
Ongoing in 2019; supervised by Thomas Szucs, Annette Mollet

Cristiana Sessa, Patients involvement and EUPATI Switzerland, MMD thesis, ECPM Basel
Ongoing in 2019; supervised by Thomas Szucs, Annette Mollet and David Härrli

Claudine Bommer, Cost-utility analysis of prophylactic risk-reducing strategies to prevent breast and ovarian cancer in BRCA mutation carriers in Switzerland (MPH thesis)
Ongoing in 2019; supervised by Judith Lupatsch and Matthias Schwenkglenks

Barbara Gubler-Gut, Cost-effectiveness of physical activity intervention in cancer survivors: A systematic review (MPH thesis)
Ongoing in 2019; co-supervised by Matthias Schwenkglenks



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