

Faculty of Medicine



ECPM – European Center of Pharmaceutical Medicine Institute of Pharmaceutical Medicine Annual Report 2022.



# **Table of Contents**

Foreword.	3
Foreword by the Executive Office	3
30th Anniversary of ECPM.	4
30 Years of Excellence in Continuous Education.	4
Pearl Anniversary – Honoring and Celebrating the 30th Anniversary of ECPM	4
Spotlight on Anniversary Celebration Talks	8
The ECPM at a glance.	14
Facts & Figures – ECPM Course Offer in a Nutshell	14
In 2022 the ECPM	15
Activities in a Nutshell	15
Organizational chart.	16
European Center of Pharmaceutical Medicine.	17
Institute of Pharmaceutical Medicine.	17
Director	17
Education & Training.	18
Personnel.	18
Head of Education & Training, Managing Director	18
Course Manager Administrator and Course Organizer	
Research. Personnel.	21 21
Head of Research	21
Senior Research Scientist	22
PhD Candidate	25
Co-Supervision of PhD/MMD projects.	25
PhD/MMD Candidates.	25
MMD Candidate	25
Education & Training.	26
Current Status.	26
Undergraduate / Graduate Teaching	26
Postgraduate Training	26
The following postgraduate courses were offered in 2022:	27
Education & Training.	28
Objectives for the coming years.	28
Education & Training.	29
ECPM Training Platform	29
ECPM Diploma Course (DAS) in Pharmaceutical Medicine	30
Master Course (MAS) in Medicines Development	30
Frontiers in Drug Development Seminars	30
Examination Multiple choice examination (MCQ):	30
Oral/Essay examination:	30
E-learning	31
Projects in 2022	31
Expertise for Approval of Radioactive Diagnostics and Therapeutics	32
External Examiner	32
Undergraduate Teaching at the University of Basel Medical School	32
Planned Projects for 2023	32
Undergraduate Teaching at the University of Basel, Faculty of Science	33
Undergraduate Teaching at the University of Zurich	33
Undergraduate Teaching at the University of Bern	33
Postgraduate Teaching at the University of Basel	33
Postgraduate Teaching at the University of Zurich	33
Research.	34
Current Status.	34
Key Areas of Expertise	35
Research.	35
Objectives for the coming years.	35
Overview of activities. New Projects.	36 37
Ongoing projects.	39
Completed projects.	43
Activities of the ECPM collaborators in 2022.	
Publications, Scientific Presentations, Evaluation of Research Projects and Thesis Supervision.	45
Scientific Presentations to External Audiences	50
Evaluation of Research Projects and Publications (peer review)	52
Theses Supervised by the ECPM Collaborators in 2022	52
Master Theses: MBA, MMD and MPH	53

### **Foreword.** ECPM Academic and Research Pursuit at its Best.



"As ECPM continues to grow, we have committed to developing well-trained healthcare professionals in low- and middle-income countries."

Prof Thomas D. Szucs Director



"I have been committed to the development of innovative educational models and course programs over the past 25 vears"

Dr Annette Mollet Head of Education & Training



"In 2022, the ECPM Research Unit reached a new landmark with the endorsement of the Health Economics Facility".

Prof Matthias Schwenkglenks Head of Research

#### Foreword by the Executive Office

At the European Center of Pharmaceutical Medicine (ECPM), we are driven to provide Swiss excellence combined with a global perspective. Our core competency and passion are to train and further develop students and postgraduate specialists in pharmaceutical medicine/drug development. In 2022, our most eminent highlight was the 30th anniversary of ECPM, commemorated one year later due to COVID restrictions. In celebration of this historic moment, we were delighted to hold a special program with several distinguished lectures, guests, and high-end representatives from the industry, regulatory and governmental bodies, culminating in a final ceremony with a classical concert I had the privilege of conducting in the wonderful concert hall of the Stadtcasino Basel City. From a position of strength, over the past 30 years, we have established qualified partner universities to deliver our academic content throughout Europe, the U.S., and China. As ECPM continues to grow, we have committed to expanding our offer to India. And I take special pride in announcing the admission of our new partner university: The Prasanna School of Public Health, Manipal Academy of Higher Education.

Our offer to impart the knowledge, expertise, and skills required to perform modern discovery, development, regulation, and marketing of medical products across the globe, has remained central to the ethos and values of ECPM since its foundation more than 30 years ago.

With delight I join Thomas in looking back on a successful 2022 and the 30th anniversary of ECPM. This year I was honored to be recognized for my 25 years tenure at ECPM. I have been committed to the development of innovative educational models and course programs. Equipping our current and future students with cutting-edge knowledge to meet the current dynamics and emerging needs in the entire drug development process. This year, we have implemented a brandnew digital learning platform containing the course materials and videos of the ECPM diploma course to enhance the learning experience of our post-graduate students. We also announce the

The year 2022 was likewise a fruitful year for me, marked by significant advances in the research department. Over the past 19 years, the ECPM research group has maintained its position as one of the most active health economic groups in Switzerland, in terms of publication activity, project scope, and scale. In 2022, the ECPM Research Unit reached a new landmark with the endorsement of the Health Economics Facility (HEF), which is part of the Department of Public Health and Department of the Medical Faculty of the completion and launch of an e-learning programme in collaboration with Novartis on the "Pathway of Drug Development". On a global scale, we established a new partnership with the university of Manipal in India – supported by Roche's Healthcare Institute India. We will jointly offer the first Executive Training Program on Drug Development and Regulatory Science online, starting in spring 2023 . In 2022, we initiated the development and implementation of a social media campaign to engage with our followers and inspire them to grow professionally, alongside the realization of our first testimonial video series, which was well received by our audience.

University of Basel. Having been appointed Head of the HEF, I plan to build on the existing ECPM research foundation to amplify the scope of research in conjunction with two academic institutions: Health Economics at the Faculty of Business & Economics, and the Household Economics & Health Systems Research Unit at the Swiss TPH. I look forward to enabling further collaborations in 2023 between our research institute at ECPM and other prestigious departments in the research area of health economics.

# **30th Anniversary of ECPM.** 30 Years of Excellence in Continuous Education.

#### Pearl Anniversary – Honoring and Celebrating the 30th Anniversary of ECPM

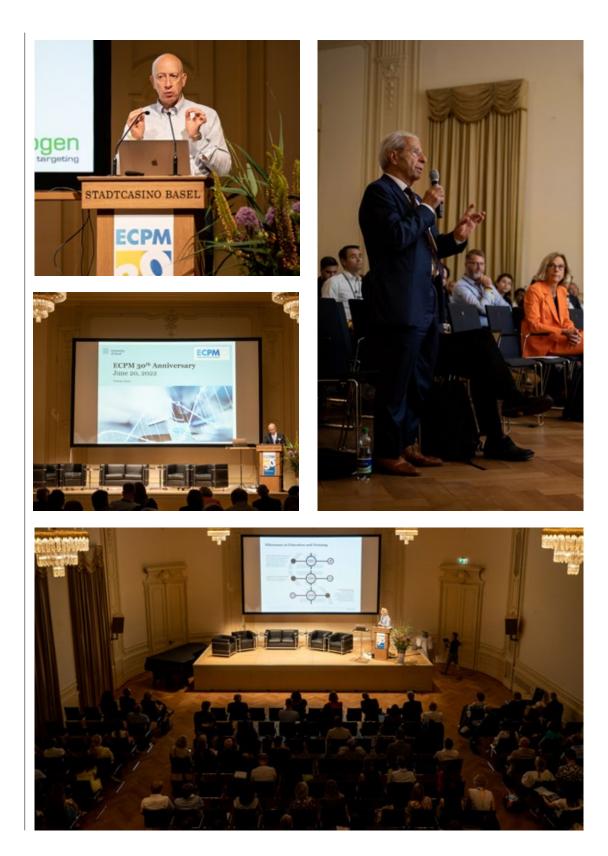
ECPM was pleased to honor 30 years of excellence in continuous education. Founded in 1991 – as the first provider of postgraduate academic programs in pharmaceutical medicine – over the past 30 years the European Center of Pharmaceutical Medicines (ECPM) has established itself as one of the world's leading university institutes for medicine and drug development, providing high-level education and training to more than 2,100 health professionals.

On June 20, 2022 – one year later than foreseen due to COVID restrictions – the time had come for ECPM to celebrate its 30th anniversary with a formal ceremony and an exclusive anniversary seminar that spotlighted learnings and challenges in medicines development, followed by a look back on the highlights over the past 30 years of ECPM.

To this end, we paid tribute to the legacy and landmark achievements of ECPM founder Prof. Fritz Bühler, who passed away in 2017. ECPM Co-founders Carl Peck and Robert O'Neill, formerly with the FDA, gave very personal memorial speech.

Several ECPM founding members and current board members honored ECPM's accomplishments and milestones reached, with a number of distinguished representatives from the Pharmaceutical Industry, the Swiss Regulatory Authority, the Swiss Government, and the University of Basel.

















#### Spotlight on Anniversary Celebration Talks

At the core of the anniversary seminar was the presentation on the veritable DNA of ECPM by Thomas Szucs, current Managing Director of ECPM. Further, Ruth Amstein and the current Head of Education and Training, Annette Mollet, showed the development of ECPM marked by an impressive growth from a small associated institute to a full-fledged university institute of the Medical Faculty of the University of Basel.

Another great highlight was the contribution of the directors of the partner universities San Francisco and Beijing who sent a highly inspiring video with a congratulatory message on the occasion of ECPM's pearl anniversary. The two universities provide sister courses founded in the wake of ECPM, namely the ACDRS in the USA and the CCDRS in China. The attendees enjoyed a panel discussion of experts and alumni on the topic of "How to develop talents and competencies" – a highly informative and entertaining highlight that enriched the ECPM anniversary seminar. The discussion focused on the importance of the content taught in the ECPM training programs and the value of transferring it to the workplace and workday.

The 30th anniversary was concluded with an evening ceremony, which started with a highly memorable and delightful event, followed by an exclusive classical concert with the Academic Orchestra Basel conducted by ECPM's Director Professor Thomas Szucs. The historic ceremony ended with an exquisite dinner and ample networking opportunities for course participants, guests, speakers, faculty, and members of the ECPM Advisory Board.





























ECPM – Annual Report 2022















# The ECPM at a glance.





Nationalities of students (2021–2023) 25



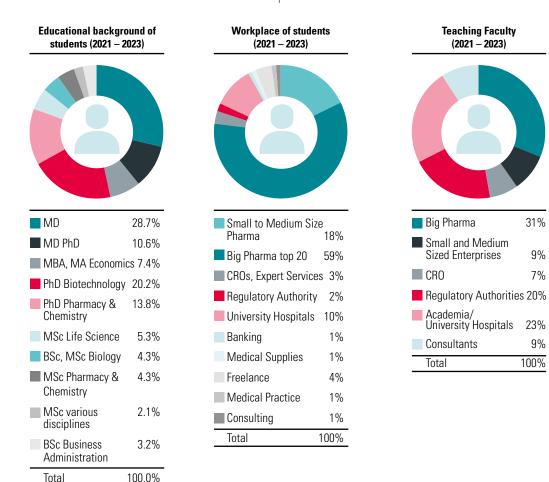
Vembers (overall) 150

#### Facts & Figures – ECPM Course Offer

Our mission at ECPM is to establish the best international training platform that provides and enhances the knowledge, expertise and skills required to perform modern discovery, development, regulation and marketing of medical products.

Since our foundation in 1991, we have trained over 2,000 students holding MDs, PhDs or an MSc, and recruited 150 members of faculty. Furthermore, since the introduction of the Bologna system in 2000, ECPM was proud to upgrade from awarding a certificate to the possibility of awarding a postgraduate diploma. From 2009 to 2014, Fritz R. Bühler, Thomas D. Szucs, Susanne Daniel and Annette Mollet led the Innovative Medicines Initiative (IMI) project – a public/private partnership called PharmaTrain. Through this European academic network the ECPM training platform was taken to the next level to offer a postgraduate Master title. In 2006 and 2008, the University of Beijing and the subsidiary of the University of San Francisco in Washington adopted the course concept.

With excitement ECPM continues to expand its global footprint by establishing the Executive Training Program on Drug Development and Regulatory Science in 2022 with the Prasanna School of Public Health in India and in partnership with the Roche Healthcare Institute in India.



#### In 2022 the ECPM

- Honored and celebrated its 30th anniversary on June 20, 2022 (one year late due to COVID restrictions)
- Expanded its international reach by enlisting a new partner university in India: The Prasanna School of Public Health, Manipal Academy of Higher Education, Manipal, India
- Held the inauguration of the Basel Center of Health Economics and approval of Health Economics Facility at the Department of Public Health (M. Schwenkglenks founding member/lead)
- Continued the 16th ECPM diploma course cycle with 101 participants (overall >2,100)
- Collaborated with 150 faculty members from different affiliations
- Developed and offered special modules and lecture series
- Recorded 10 years of training delivery and collaboration with the University Hospital Basel
- Was involved in graduate and postgraduate teaching of 10 different programs

#### 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**

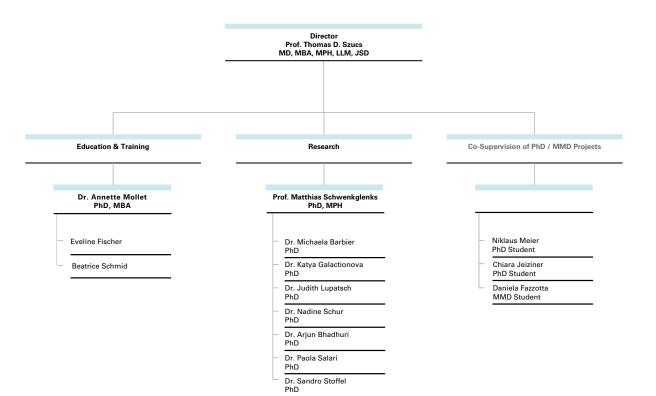
- Undergraduate and graduate training of medical, pharmacy, human biology, public health, and nursing students at the University of Basel
- Supervision of PhD, Master and Master of Advanced Study theses
  - PhD thesis: 6
  - MMD MAS thesis: 3
  - MD thesis: 1
- MBA Int Health: 1

• Acquired about 680,000 Swiss Francs in third-party research funding

#### The ECPM Research Unit

- Maintained its position as of one of the most active health economic groups in Switzerland
- Achieved a high level of publication activity
- Recorded a broad range of research activities, including
  - Projects with industrial partners
  - EU HORIZON 2020 / SERI-funded international projects
  - Health economic evaluation components in University Hospital Basel clinical trials
  - Health Technology Assessments for the Swiss Federal Office of Public Health
  - Involvement in HTA activities abroad, e.g.
     Single Technology Assessments at National Institute for Health and Care Excellence (NICE, England)
- Executed projects of significant scope and scale, with approximately 6.5 full-time equivalent scientific staff involved
- Two MAS in Medicines Development defenses
  Worked on 18 research projects
  - Authored and co-authored 35 published peer-reviewed articles and multiple conference abstracts, a 75% increase over the previous year.
  - Gave multiple scientific presentations to external audiences
  - Supervised or co-supervised 6 PhD and 3 MMD theses and 1 MBA Int. Health Thesis
  - Employed 12 people in education/research plus 1 PhD student
  - 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

# 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. So far, he has published more than 400 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 2010, he was appointed Chairman of Helsana Insurance, Ltd, the largest health insurer in Switzerland. Since then, Thomas Szucs has been in charge of the overall supervision of the Executive Board. In 2016, Professor Szucs was rated among the 20 most influential economists in Switzerland. In 2020, he was recognized as a 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. In 2020, he was appointed as Co-Director Genomic Medicine at the Hirslanden Private Hospital Group, which consists of 17 hospitals.

# **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 off 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 Kings College London, United Kingdom, and internationally with the Peking University Clinical Research Institute at the University of Beijing 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 ECPM at the University of Basel since 1997.

Annette holds a Master in Pharmacy from the University of Basel and a PhD in Neurobiology from the Swiss Federal Institute of Technology in Zurichand an MBA in International Health from the Swiss Tropical and Public Health Institute (Swiss TPH). She teaches drug development both at the Universities of Basel and Zurich. In 1997 Annette joined the clinical R&D department at F. Hoffmann-La Roche in Basel. She was responsi- ble for the conduct of Phase II and Phase III tri- als and later worked as a Medical and Product Manager for oncology products at Roche Pharma Schweiz.

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.

From 2016–2021, Annette was member of Board 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. In June 2021, Annette was elected Board Member of IFAP (International Federation of Association of Pharmaceutical Physicians and Pharmaceutical Medicine) where she chairs the "Young Professionals" working group. Its objective is to raise awareness in young people at the beginning of their career of the discipline, training possibilities and job offerings in the field of Pharmaceutical Medicine.

In 2022, Annette received special honors for her 25 years of outstanding service to the ECPM medical faculty. She has been instrumental in taking ECPM to the next level. Most notable was her leadership role in the IMI PharmaTrain (Pharmaceutical Training) initiative, which paved the way for the establishment of an international federation that drives the adoption of globally, recognized high-level standards for postgraduate academic programs. Further, she has been instrumental in the provision of high-quality training and education academic programs, which earned the ECPM faculty accreditation as a Center of Excellence. She was also a decisive contributor to the establishment of the first Master in Medicines Development (MMD) degree, an accredited and awarded postgraduate Master's program for post-graduate professionals.



#### **Course Manager**

**Eveline Fischer** has been Course Manager Education and Training at ECPM since May 2022. She received her BSc in Biomedical Sciences in 2010 from the University of Fribourg, Switzerland, and her MSc in Biomedical Sciences in 2012 from the University of Berne in Switzerland. She worked on her master thesis at Karolinska Institute in Stockholm, Sweden. In 2012, Evelyn was joined the Swiss Tropical and Public Health Institute where she did research in Epidemiology. At the end of 2016, she switched to a more clinical setting as Study Coordinator and Study Nurse at the University Hospital Basel until 2018. Then, she spent 3 years in Thailand, working in a German company before joining the Institute of Pharmaceutical Medicine, University of Basel, Switzerland.



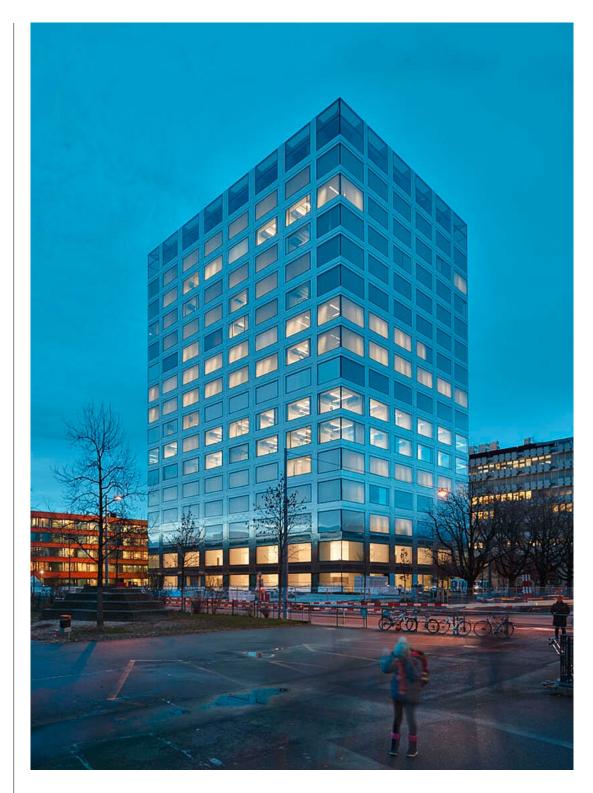
#### Administrator and Course Organizer

**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 in charge of the human resource matters of more than 300 employees.

In 2000, she joined Novartis where she held diffent positions such as Head of the IT secretariat of Switzerland and management of the division 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.



The Biozentrum of the University of Basel is the training venue for the ECPM post-graduate course program Picture: © Atelier Fontana, Basel)

## **Research.** Personnel.

The 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 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 fi such as health systems research, health services research including work with large realworld datasets, 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 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, neurology, ophthalmology, infectious diseases, and vaccinations.



#### Head of Research

**Matthias Schwenkglenks, PhD, MPH** has been ECPM's Head of Research since 2003. In 2022, Matthias was appointed as Head of the Health Economics Faculty (HEF), which has been endorsed in 2022 as an integrated part of the Faculty of Medicine's research infrastructure. The HEF collaborates with the Swiss TPH Basel and the Faculty of Business and Economics of the University of Basel.

In 2021, he was appointed Research Group Leader at the Department of Public Health of the Medical Faculty. Since 2010, he also leads the Medical Economics Unit at the Epidemiology, Biostatistics and Prevention Institute of the University of Zurich. Among other commitments, he acts as a health economics expert for the Cancer Screening Committee set up within the framework of the Swiss National Strategy against Cancer, and as an advisor for the Swiss Healthcare Atlas project led by the OBSAN. Matthias obtained a Master of Arts in Sociology and Political Sciences from the University of Tübingen, a Master of Public Health from the Uni versities 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 with large real-world datasets, epidemiology, observational study and trial design, and biostatistics.



#### **Senior Research Scientist**

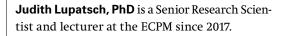
**Michaela Barbier, PhD** is a Senior Research Scientist and lecturer at the ECPM since 2018.

She holds a Master in Mathematics and Economics ("Wirtschaftsmathematik") and a PhD in Bio-statistics, both from the University of Ulm. Alongside her PhD, she already worked on indus- try-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, biostatistics 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 oncology, cardiovascular, respiratory and ophthalmology.

Her current research interests remain in health economic decision modeling, biostatistical modeling, health service research and value-based health care.

#### **Senior Research Scientist**



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 undertook 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 analysis 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 ECPM 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 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 areas of epidemiology, health economic evaluations and biostatistics focused on multi-variable regression analysis, epidemiological and decision-analytic modeling, and real-world database analyses.



#### **Senior Research Scientist**

**Katya Galactionova, PhD** is a Senior Research Scientist at the ECPM 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 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.



#### **Senior Research Scientist**

**Arjun Bhadhuri, PhD** is a Senior Research Scientist, Health Economist and lecturer at the ECPM 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 is he 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.



#### Senior Research Scientist

**Paola Salari, PhD** is a Senior Research Scientist and lecturer at the ECPM 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 inequalities and inequities aspects 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. She carried out socioeconomic analyses of the health care systems of Ghana and Tanzania and she 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, multi-variable regression analysis and program evaluation. At the ECPM she has been working on cost-effectiveness analyses alongside cluster randomized clinical trials, statistical analyses of health insurance claims data and of other epidemiological data to inform health economic models.



#### **Senior Research Scientist**

**Sandro Stoffel, PhD** is a Senior Research Scientist at the ECPM 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/MMD projects.** PhD/MMD Candidates.



#### PhD Candidate

**Niklaus Meier, MSc, BSc**, studied economics and applied economic analysis at the University of Bern with a specialization in applied empirical methods in the fields of health and public policy. Through his subsequent work as a research associate for health economics at the Bern University of Applied Sciences, he became familiar with health technology assessment and cost-effectiveness analysis. This experience enabled him to start his PhD at the ECPM, under the principal supervision of Matthias Schwenkglenks, in 2021. His PhD focuses on cost-effectiveness analyses of medical interventions for haemophilia with a particular emphasis on treating haemophilia via gene therapies. For this, he is developing a microsimulation model to compare potential gene therapies with the current standard of care. Niklaus further plans to conduct a systematic literature review for cost-effectiveness analyses of haemophilia interventions with a focus on reviewing the clinical effectiveness evidence that was used to inform the models. For his final project, he plans to draw on the insights from the previous research to develop or refine methods for cost-effectiveness analyses and specific techniques fo quantifying uncertainty and the expected value of information.



#### **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, a former staff member of the ECPM, Chiara has been analyzing pharmacogenetic relevant information and instructions about pharmacogenetic management in all summaries of product characteristics of drugs registered in Switzerland.



#### MMD Candidate

**Daniela Fazzotta**, **MBA**, **BSc** earned an Executive MBA from the University of Lausanne and the SDA Bocconi University. She is a trained economist. As a Senior Health Executive with previous cross-industry experience, within the life science industry, Daniela has been leading projects on Precision Medicine, Gender Medicine, Women's Health, and Health Equity. Her passion for advanced technologies drove her to choose Cell and Gene Therapies (CGTs) as her thesis topic. In mid-2020, she conducted research on "The Future of CAR-T Cell Therapy" focusing on allogeneic technologies.

She then changed her subject to "Value Creation in Cell and Gene Therapies from the Perspective of Health Economics" to maximize outcomes. She has conducted extensive research on the impact of CGTs on costs and health outcomes over conventional care. By investigating 17 interventions on three rare diseases in seven healthcare systems (the USA, Australia, and the top-5 European countries), she has demonstrated the significance and magnitude of CGTs in contributing to the current high unmet need in life-shortening, and devastating rare diseases by delivering health gains and unprecedented cost savings.

## **Education & Training.** Current Status.

The European Center of Pharmaceutical Medicine (ECPM) has established a reputation as one of the premier European training centers in Pharmaceutical Medicine. Training is offered at 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 graduatetargeted 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 101 participants running over two years. The current course cycle started in September 2021 and will be finished in August 2023. The course has been offered successfully for 31 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. So far 12 candidates have obtained the Master's degree.

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 2022:

# Diploma Course (DAS) in Pharmaceutical Medicine

The 16th cycle started in September 2021 and ends with the examination in August 2023.

#### **Fundamentals in Health Economics**

This course addresses the role of health-economic thinking in the drug development process. Participates are provided with an understanding of the key principles and methodological concepts of health economics. This course enables them to assess and appraise published health economic analyses according to guidelines

#### Scientific Medical Writing

In collaboration with Mediwrite

This course provides a comprehensive overview of the strategic scientific and medical writing field and offers hands-on training in writing and analyzing scientific texts. In particular, it conveys key elements principles for proficient scientific writing.

# Project Management in the Life Sciences Industry

This intensive 6-day course module focuses on projects in the life sciences industry and the clin-

ical trial setting ranging from pre-clinical to phase III studies and post-marketing studies. It teaches all the relevant steps and techniques to accurately plan, conduct, and evaluate life sciences projects.

Participants benefit from instructor-led training and group work on real case studies. They work on projects characterized by a high degree of complexity requiring professional management at all stages and levels.

#### Ethical and Legal Aspects of Clinical Trials

This course addresses the importance of ethics for research and overall drug development. It conveys key principles of ethical considerations during clinical research and development. It tackles ethical concerns in the clinical trial design, conduct, and reporting to reach research integrity and prevent misconduct and fraud. It enables participants to meet the requirements of the ethical review systems in Europe and European legislation.



The ECPM Team during the online Module 2. From left to right Annette Mollet, Beatrice Schmidt and Thomas Szucs

# **Education & Training.** Objectives for the coming years.

The objectives of the 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. In addition, the courses are accredited by the Swiss Association of Pharmacists (FPH, 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 graduated in 2015, further three candidates in 2018, two candidates in 2019 and one in 2020. Another three candidates completed their master's degree in 2021, and two more candidates in 2022. 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.

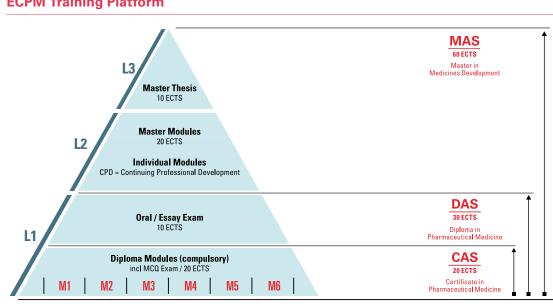
Namely the Peking University Clinical Research Institute (PUCRI) at the University of Beijing and the University of California San Francisco to exchange knowledge and enhance training competencies and standards. A number of faculty members teach on all three courses and several students have already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

A study trip to Estonia, together with the Swiss Association for Health Economics and Health Sciences, to learn how they organize their health system was planned for 2022, but had to be postponed due to the pandemic.



Welcome Aperitif with the ECPM students of the 16th cycle

### **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-todate 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 Pharmacutcial 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 lifecycle 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 fullor 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: http://www.ecpm.ch/ frontiers-in-drug-development.

#### Examination

The examination was offered onsite at the University of Basel on August 24 and September 14, 2021. Due to the difficult travelling situation both the multiple choice and the oral/essay examination were held twice. Those students who were not able to travel will take the examination in summer 2021.

#### Multiple choice examination (MCQ):

In August, 60 out of 68 candidates passed (i.e. failure rate of 11.8 %) and in September, 4 out of 7 candidates passed the examination. The questionnaire existed of 120 MC questions which included two types of questions. 70 questions were of the "single best answer" type (one out of five possible answers is correct) and 50 questions of the "multiple true false" type (each of the four possible answers has to be rated correct or false. Three questions had to be eliminated due to ambiguity which makes a total of 117 possible points.

#### **Oral/Essay examination:**

The oral/essay examination was off in the afternoon of August 24, after the MCQ and on September 14, the whole, day. This part of the examination is mandatory to achieve the diploma title (DAS). The oral examination is a discussion based on a scientifi paper and the essay examination comprises three one page summaries on topics covering clinical development, regulatory aff or safety/pharmacovigilance. Both the MCQ and the Essay examination were performed on an iPad. One candidate failed the oral/essay in August and none failed in September.

We were able to award 21 CAS, 42 DAS and 1 MAS titles in 2021.

#### 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. Firstly they can be used as a self-learning tool for preparation or repetition of the course material, secondly they can replace selected face-to-face modules required to achieve the Master in Medicines Development, and thirdly 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).

In 2021 we produced an e-learning program introducing the basics of drug development, called the "On the Pathway of Drug Development". It includes three chapters (of 90 minutes each):

- Global Drug Research & Development and the Pharmaceutical Business Environment
- The Life Cycle of a Drug: Taking a Molecule into Humans
- Global Registration and Market Access

The chapters comprise short lectures with animated slides and quizzes to check the learning outcomes.

In 2022, a new electronic training platform containing course documents, videos, books, self-assessments and e-learnings hosted by Cometas was introduced.

Also in 2022, a joint ECPM/Novartis e-learning platform with e-learning program for Novartis employees was successfully launched.

#### Projects in 2022

- Celebration of the 30th anniversary celebration (originally planned for June 2021): ECPM commemorated its 30th anniversary on June 20, 2022 with a jubilee event featuring a classical concert in the renowned concert hall of the Stadtcasino in Basel.
- Launch of a campaign to announce ECPM its first joint course program with the new Partner University Prasanna School of Public Health, Manipal Academy of Higher Education
- Realization of an increased ECPM's presence on LinkedIn with a higher frequency of informational posts to engage new followers
- Launch of the first Testimonial Video edition with ECPM 9 Testimonials out of the ECPM Master, Diploma, and Certificate program.
- Three master thesis in medicine's development supervised and one completed and published
- Scientific program of the joint annual meeting 2022 of the Swiss Association of Pharmaceutical Professionals and Physicians (SwAPP and SGPM).
- Realization of a new edition of the course "Project Management in the Life Science Industry

#### Planned Projects for 2023

The ECPM will roll out and inaugurate its very first ECPM "Executive Training Program on Drug Development and Regulatory Science" with the new Partner University Prasanna School of Public Health (PSPH) Manipal, India, Manipal Academy of Higher Education, and the support of Roche Healthcare Institute India. To this end, a delegation from ECPM and PSPH will be sent to India to hold high-level meetings with the Indian governmental and regulatory bodies, such as the

- FDA BEHAVAN/CDSCO Medicines Agency India
- Medical Research Council (ICMR)
- Other ECPM projects involve:
- Launch the 17th ECPM Diploma Course Cycle
- Realization of the first Study Trip to Estonia, after 2-year hold due to COVID restrictions

• Launch of Networking events jointly offered by ECPM and the INSEAD Alumni Association / Swiss Healthcare Club Fireside Chat with distinguished senior Executives.

The ECPM will be working on several new training and teaching programs:

- Follow-on Drugs
- Genomics in Drug Development
- Pricing and Reimbursement
- Frontiers in Drug Development seminars, in particular "Pharmaceutical Pricing and Reimbursement"
- Scientific program of the joint annual meeting 2023 of the Swiss Association of Pharmaceutical Professionals and Physicians (SwAPP and SGPM)

#### **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.

#### 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 (Vorlesung). Major Clinical Medicine, 1. Studienjahr Medizin Bachelor.
- 5. Szucs TD. Gesundheitsökonomie (Vorlesung), 2. Studienjahr Medizin Master.
- 6. Schwenkglenks M, Lupatsch JE. Interprofessionelles Modul Medizinische Ökonomie. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.
- 7. Schwenkglenks M. Interprofessionelles Modul Gesundheitspolitik. Major Clinical Medicine,
- 8. Studienjahr Medizin Bachelor.
- 9. Szucs TD. Grundlagen und Übersicht. Einführung in die Medikamentenentwicklung. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.

- 10. Szucs TD. Phasen 2 und 3 Prüfungen. Einführung in die Medikamentenentwicklung. Major Clinical Medicine, 3. Studienjahr Medizin Bachelor.
- 11. Schwenkglenks M, Lupatsch JE. Kleingruppenseminare im Themenblock Körper, Subjekt, Umwelt, 1. Studienjahr Medizin Bachelor.

Undergraduate Teaching at the University of Basel, Faculty of Science

- 1. Mollet A, Schwenkglenks M. Lectures forming part of 12527-02 Epidemiologische Konzepte in der Arzneimittelforschung
- Schwenkglenks M. Lectures forming part of 20458-01 Essentials in Drug Development & Clinical Trials.

#### Undergraduate Teaching at the University of Zurich

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

#### Undergraduate Teaching at the University of Bern

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

- 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 ST. 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

- 1. Schwenkglenks M. Gesundheitsökonomie. Course forming part of the Postgraduate Master Program in Public Health, Universities Basel, Bern, Zürich.
- 2. Schwenkglenks M, Szucs TD. Gesundheitsökonomische Evaluation. Course forming part of the Postgraduate Master Program in Public Health, Universities Basel, Bern, Zürich.
- 3. Szucs TD. Gesundheitsrecht. Course forming part of Postgraduate Master Program in Public Health, Universities Basel, Bern, Zürich.

# **Research.** Current Status.

The ECPM Research Unit has maintained its position as one of the most active health economic groups in Switzerland, in terms of publication activity, project scope, and scale, with about 6.5 full-time equivalents of scientific staff.

In 2022, the ECPM Research Unit ECPM Research Unit reached a new landmark in the history of ECPM with the Inauguration of the Basel Center of Health Economics (BCHE) and approval of the Health Economics Facility (HEF) at the Department of Public Health of the Medical Faculty of the University of Basel. Matthias Schwenkglenks is a founding member and has been appointed as Head of HEF.

ECPM's research activities started in 2003. Initially, a majority of studies were run with industrial partners, as there was (and is) only limited public funding for pharmaceuticalrelated 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 2021, 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, 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 nonacademic 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 for the Swiss Federal Office of Public Health.

Projects with industrial partners continue to play a relevant role, which gives us opportunities to work with raw data from large, multinational randomized controlled trials and to be involved in HTA 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 eighth 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. We pursue and intensify our cooperation with other units at the University of Basel pursuing related research activities, e.g. the Chair of Health Economics at the Faculty of Business and Economics (DHE), Swiss Tropical and Public Health Institute, Institute of Nursing Sciences, Basel Pharmacoepidemiology Unit, and Basel Institute for Clinical Epidemiology & Biostatistics. The aforementioned units and ECPM have joined forces several years ago 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. Currently, a new format for intensified cooperation in the field of health economics is being developed across faculties. Research staff is also involved in university teaching at different levels.

#### **Key Areas of Expertise**

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

# **Research.** Objectives for the coming years.

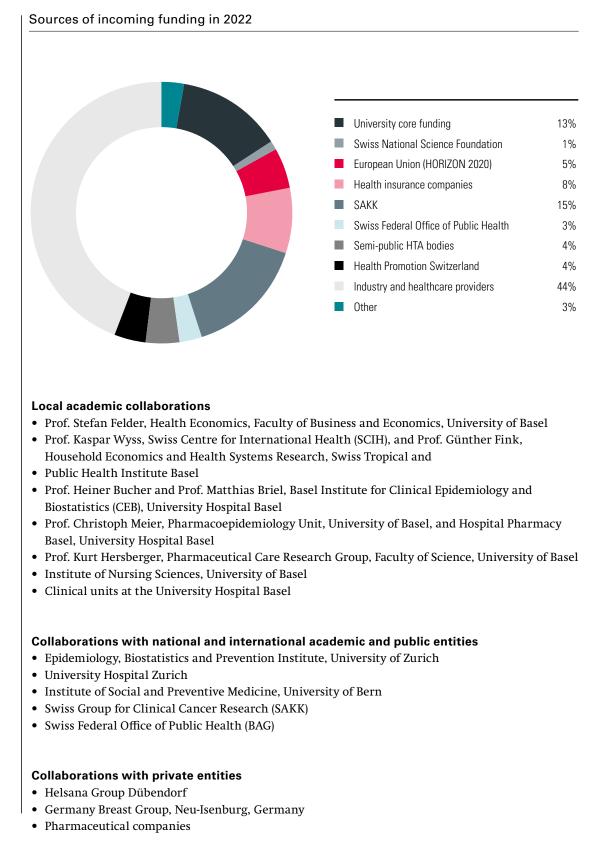
The situation and achievements of the ECPM in 2021 reflect the continued, successful development of a small research unit. In the coming years, we will seek to maintain a sensible balance of competitively (EU, potentially SNSF), publicly and privately funded research projects. As thirdparty funding of Health Technology Assessmentrelated 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. Towards this end, we aim to further strengthen and formalize collaboration with local partners from the Department of Public Health of the Medical Faculty, Faculty of Science and Faculty of Business and Economics.

Additional scientific aims are to expand research using administrative datasets provided by health insurance companies, and research on methodological topics in health economic evaluation, including causal inference methods. Regulatory science and behavioral health economics are additional areas of activity.



ECPM newly training at the Biozentrum of the University of Base © ECPM, Basell

# **Research.** Overview of activities.



## **Research.** New Projects.

### New

PsyYoung economic analysis
AB, MS
Estimate the cost in Switzerland of facilitating access to care for young people at risk for psychotic disorders
01/2022
Prof. Dr. Christina Andreou, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne
Pending
CHUV

#### New Title:

Cost-utility analyses of immunotherapy drug for different cancers

Project lead & contributors:	AB
Hypothesis / Objectives:	To estimate the cost-effectiveness of an immunotherapy drug for different types of cancer
Start date:	06/2022
Partner(s):	Industry
Output:	Pending
Source of funding:	Industry

#### New

Title:	Cost-effectiveness and budget impact analysis for patients with mesothelioma
Project lead & contributors:	MB
Hypothesis / Objectives:	Investigate cost-effectiveness and budget impact within the current treatment landscape
Start date:	06/2021
Partner(s):	Swiss National Accident Insurance Fund (SUVA), Cantonal Hospital Lucerne
Output:	Pending
Source of funding:	SUVA

#### New

Title:	Spearhead: Fighting Antimicrobial resistance through rapid digital pandemic response
Project lead & contributors:	KG, JL,MS
Hypothesis / Objectives:	To contribute to optimised practices in managing antimicrobial resistance (AMR) that may easily be harnessed to address future emerging infections. ECPM is responsible for developing a conceptual model including the reasons and consequences of AMR and for performing the cost-effectiveness of a software and a virtual platform that the project aims to develop.
Start date:	01/2022
Partner(s):	Consortium of 8 public and 4 private Swiss institutions
Output:	Pending
Source of funding:	Innosuisse

#### New

Herding-like behaviour
SS
The experimental study will investigate to what extent do primary care physicians follow prescription recommendations of their peers.
09/2022
University of Warwick (UK)
Pending
Biäsch Stiftung

#### New

Title:	DepRescribing inapprOpriate Proton Pump InibiTors trial
Project lead & contributors:	MB, MS
Hypothesis / Objectives:	To evaluate the cost-effectiveness of the trial intervention through health economic analyses.
Start date:	09/2022
Partner(s):	BIHAM (Institute of Primary Health Care) team in Bern
Output:	Pending
Source of funding:	Swiss National Science Foundation

#### New

Title:	MultiSCRIPT - Treatment Optimization in Multiple Sclerosis
Project lead & contributors:	MS, KG
Hypothesis / Objectives:	This study investigates how intensive monitoring of biomarkers can improve patient-relevant outcomes as well as the care of MS patients.
Start date:	11//2022
Partner(s):	Universitätsspital Basel, Departement Klinische Forschung, Inselspital, L'Ente Ospedaliero Cantonale
Output:	Pending
Source of funding:	Schweizerische Nationalfonds Investigator initiated clinical trials

## **Research.** Ongoing projects.

#### Ongoing

Title:	Value-based Health Care Data analysis on lung cancer costs and patient-reported outcomes
Project lead & contributors:	MB, KG, MS
Hypothesis / Objectives:	Develop an algorithm to merge administrative datasets from the University of Basel Hos- pital covering services and billings with PROMs/CROMs for lung cancer patients treated at the Hospital; analyze the linked datasets to identify treatment patterns and relate these to patient outcomes and costs toward optimal care pathways.
Start date:	10/2021
Partner(s):	University of Basel Hospital, Industry
Output:	Pending
Source of funding:	University of Basel Hospital, Industry

#### Ongoing

Title:	Survey to identify drivers and barriers towards pneumococcal vaccination
Project lead & contributors:	STS, MS
Hypothesis / Objectives:	To identify drivers and barriers towards pneumococcal vaccination in adult risk groups in Switzerland
Start date:	01/2021
Partner(s):	Industry
Output:	https://pubmed.ncbi.nlm.nih.gov/36175212/
Source of funding:	Industry

#### Ongoing

The indirect costs of oesophageal cancer in Switzerland
STS, PS, AB, MS
To identify the indirect costs (i.e. productivity loss, informal care) of oesophageal cancer in Switzerland.
10/2021
Industry
Pending
Industry

Health economic aspects of atrial fibrillation: analysis based on the Swiss-AF cohort study
MS
Study of health economic implications of atrial fibrillation and health economic properties of related treatments
04/2019
Prof. Stefan Osswald, Kardiologie, Universitätsspital Basel; Epidemiology, Biostatistics and Prevention Institute, University of Zürich
https://pubmed.ncbi.nlm.nih.gov/36332981/
Swiss National Science Foundation

#### Ongoing

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 Allgemeinchirurgie, Universitätsspital Basel
Output:	Pending
Source of funding:	Swiss National Science Foundation

#### Ongoing

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:	https://www.medrxiv.org/content/medrxiv/early/2022/10/10/2022.10.07.22280500.full.pdf
Source of funding:	Industry

#### Ongoing

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 Belas- tungsfolgen in der Somatik: ein Modellprojekt zur kollaborativen Versorgung (SomPsyNet)»
Start date:	03/2019
Partner(s):	University Hospital Basel, Swiss Tropical and Public Health Institute
Output:	Internal reports; https://pubmed.ncbi.nlm.nih.gov/35592378/; https://doi.org/10.1186/ s12888-021-03353-5
Source of funding:	Health Promotion Switzerland

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:	STS, KG, NM, MS
Hypothesis / Objectives:	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.
	In the last 15 years, a class of secondary plant metabolites has been discovered that se- lectively 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 therapeu- tic product, however, do not ensure that both compounds are at the same time at the site of interaction.
	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.
	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.
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, Universita degli Studi di Roma Tor Vergata, Italy, Extrasynthese SAS, France, Universita degli Studi di Ferrara, Italy, Universität Schweiz, Switzerland, TP21 GmbH, Germany.
Output:	Internal reports
Source of funding:	EU (HORIZON 2020, grant agreement 825730)

Title:	Drug utilization 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:	https://reports.helsana.ch/arzneimittel2022/
Source of funding:	Health insurance provider

### Ongoing

Title:	Co-operative projects with the SAKK in the field of health economics and outcomes research in oncology
Project lead & contributors:	JL, STS, 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. https://doi.org/10.4414/smw.2021.20464
Source of funding:	SAKK

Title:	Health economic analysis alongside SAKK clinical oncology trials
Project lead & contributors:	JL, STS, 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:	Health economic analysis of PENELOPE trial
Project lead & contributors:	KG, PS, MS
Hypothesis / Objectives:	Health economic evaluation alongside the randomised controlled PENELOPE trial. PE- NELO-PE is a phase III trial of palbociclib (PD-0332991) in patients with hormon 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:	https://doi.org/10.3389/fonc.2022.886831
Source of funding:	Private entity, non-industry

#### Completed

Title:	Estimation of influenza hospitalisations from Medical Statistics of Hospitals
Project lead & contributors:	NSch, KG, MS
Hypothesis / Objectives:	Assess if Hospital Statistics can validly identify influenza hospitalisations
Start date:	03/2020
Partner(s):	Epidemiology, Biostatistics and Prevention Institute, University of Zürich
Output:	Internal report
Source of funding:	Swiss Federal Office of Public Health

#### Completed

Title:	Cost-effectiveness analysis of treatments for newly diagnosed prostate cancer
Project lead & contributors:	MB, MS
Hypothesis / Objectives:	Survival modelling and cost-effectiveness analysis
Start date:	03/2020
Partner(s):	Epidemiology, Biostatistics and Prevention Institute, University of Zürich
Output:	https://pubmed.ncbi.nlm.nih.gov/36327294/
Source of funding:	Swiss Medical Board

#### Completed

Title:	Cost-effectiveness of novel ophthalmology drugs
Project lead & contributors:	MB, PS, MS, AB
Hypothesis / Objectives:	Assessment of health economic characteristics and cost-effectiveness of novel ophthalmology drugs in Switzerland
Start date:	12/2018
Partner(s):	Industry
Output:	https://pubmed.ncbi.nlm.nih.gov/35765055/
Source of funding:	Industry

#### Completed

Impact and economics of PCSK9 inhibitor treatment in Switzerland
PS, KG, MS
Burden of disease, budget impact and cost-effectiveness modelling for a small molecule PCSK9 inhibitor, for Switzerland
09/2020
Industry
https://pubmed.ncbi.nlm.nih.gov/35723806/
Industry

#### Completed

Cost-effectiveness and budget impact of a new treatment of Alzheimer's disease		
AB, MS		
To evaluate the cost-effectiveness of a drug for early Alzheimer's disease		
12/2020		
Industry		
Internal report		
Industry		

#### Completed

Title:	HTA of low-dose CT screening for lung cancer	
Project lead & contributors:	AB	
Hypothesis / Objectives:	Update to systematic review of clinical and economic studies	
Start date:	06/2021	
Partner(s):	Basel Institute for Clinical Epidemiology and Biostatistics	
Output:	https://cancerscreeningcommittee.ch/themen/lungenkrebs-screening-mittels-ldct/	
Source of funding:	Krebsliga Schweiz	

## **Activities of the ECPM collaborators in 2022.** Publications, Scientific Presentations, Evaluation of Research Projects and Thesis Supervision.

- Bhadhuri A, Dröschel D, Guldimann M, Jetschgo C, Banhazi J, Schwenkglenks M, Sutherland CS. Cost-effectivenessof voretigene neparvovec in the treatment of patients with inherited retinal disease with RPE65 mutation in Switzerland. BMC Health Serv Res. 2022 Jun 28;22(1):837. doi: 10.1186/s12913-022-08211-y. PMID: 35765055; PMCID: PMC9241179. https://pubmed.ncbi.nlm.nih.gov/35765055/
- 2. Galactionova K, Salari P, Mattli R, Rachamin Y, Meier R, Schwenkglenks M. Cost-effectiveness, burden of disease and budget impact of inclisiran: dynamic cohort modelling of a real-world population with cardiovascular disease. Pharmacoeconomics 2022;40:791-806. https://pubmed.ncbi.nlm.nih.gov/35723806/
- 3. Gryaznov D, von Niederhäusern B, Speich B, Kasenda B, Ojeda-Ruiz E, Blümle A, Schandelmaier S, Mertz D, Odutayo A, Tomonaga Y, Amstutz A, Pauli-Magnus C, Gloy V, Lohner S, Bischoff K, Wollmann K, Rehner L, Meerpohl JJ, Nordmann A, Klatte K, Ghosh N, Taji Heravi A, Wong J, Chow N, Hong P, McCord-De Iaco KA, Sricharoenchai S, Busse JW, Agarwal A, Saccilotto R, Schwenkglenks M, Moffa G, Hemkens L, Hopewell S, Von Elm E, Briel M. Reporting quality of clinical trial protocols: a repeated cross-sectional study about the Adherence to SPIrit Recommendations in Switzerland, CAnada and GErmany (ASPIRE-SCAGE). BMJ Open 2022;12:e053417.

https://pubmed.ncbi.nlm.nih.gov/35613804/

- 4. Menges D, Yebyo HG, Sivec-Muniz S, Haile SR, Barbier MC, Tomonaga Y, Schwenkglenks M, Puhan MA. Treatments for metastatic hormone-sensitive prostate cancer: systematic review, network meta-analysis and benefit-harm assessment. European Urology Oncology 2022;in press. https://pubmed.ncbi.nlm.nih.gov/35599144/
- Aebi NJ, Fink G, Wyss K, Schwenkglenks M, Baenteli I, Caviezel S, Studer A, Trost S, Tschudin S, Schaefert R, Meinlschmidt G; SomPsyNet Consortium. Association of Different Restriction Levels With COVID-19-Related Distress and Mental Health in Somatic Inpatients: A Secondary Analysis of Swiss General Hospital Data. Front Psychiatry 2022;13:872116. https://pubmed.ncbi.nlm.nih.gov/35592378/
- 6. Gruebner O, Wei W, Ulyte A, von Wyl V, Dressel H, Brüngger B, Bähler C, Blozik E, Schwenkglenks M. Small Area Variation of Adherence to Clinical Recommendations: An Example from Switzerland. Health Serv Res Manag Epidemiol 2022;9:23333928221097741. https://pubmed.ncbi.nlm.nih.gov/35573484/
- 7. Speich B, Gryaznov D, Busse JW, Gloy VL, Lohner S, Klatte K, Taji Heravi A, Ghosh N, Lee H, Mansouri A, Marian IR, Saccilotto R, Nury E, Kasenda B, Ojeda-Ruiz E, Schandelmaier S, Tomonaga Y, Amstutz A, Pauli-Magnus C, Bischoff K, Wollmann K, Rehner L, Meerpohl JJ, Nordmann A, Wong J, Chow N, Hong PJ, Mc Cord-De Iaco K, Sricharoenchai S, Agarwal A, Schwenkglenks M, Hemkens LG, von Elm E, Copsey B, Griessbach AN, Schönenberger C, Mertz D, Blümle A, von Niederhäusern B, Hopewell S, Odutayo A, Briel M. Nonregistration, discontinuation, and nonpublication of randomized trials: A repeated metaresearch analysis. PLoS Med 2022;19:e1003980.

https://pubmed.ncbi.nlm.nih.gov/35476675/

- Salari P, O'Mahony C, Henrard S, Welsing P, Bhadhuri A, Schur N, Roumet M, Beglinger S, Beck T, Jungo KT, Byrne S, Hossmann S, Knol W, O'Mahony D, Spinewine A, Rodondi N, Schwenkglenks M. Cost-effectiveness of a structured medication review approach for multimorbid older adults: Within-trial analysis of the OPERAM study. PLoS One 2022;17:e0265507. https://pubmed.ncbi.nlm.nih.gov/35404990/
- 9. Girod M, Coslovsky M, Aeschbacher S, Sticherling C, Reichlin T, Roten L, Rodondi N, Ammann P, Auricchio A, Moschovitis G, Kobza R, Badertscher P, Knecht S, Krisai P, Marugg A, Aebersold H, Hennings E, Serra-Burriel M, Schwenkglenks M, Zuern CS, Bonati LH, Conen D, Osswald S, Kühne M. Association of pulmonary vein isolation and major cardiovascular events in patients with atrial fibrillation. Clin Res Cardiol. 2022. https://pubmed.ncbi.nlm.nih.gov/35403852/
- Cavalli L, Angehrn L, Schindler C, Orsini N, Grob C, Kaufmann M, Steiner LA, Schwenkglenks M, Dell-Kuster S. Number of comorbidities and their impact on perioperative outcome and costs - a single centre cohort study. Swiss Med Wkly 2022;152:w30135. https://pubmed.ncbi.nlm.nih.gov/35380180/
- 11. Kühne M, Krisai P, Coslovsky M, Rodondi N, Müller A, Beer JH, Ammann P, Auricchio A, Moschovitis G, Hayoz D, Kobza R, Shah D, Stephan FP, Schläpfer J, Di Valentino M, Aeschbacher S, Ehret G, Eken C, Monsch A, Roten L, Schwenkglenks M, Springer A, Sticherling C, Reichlin T, Zuern CS, Meyre PB, Blum S, Sinnecker T, Würfel J, Bonati LH, Conen D, Osswald S; Swiss-AF Investigators. Silent brain infarcts impact on cognitive function in atrial fibrillation. Eur Heart J 2022:ehac020. doi: 10.1093/eurheartj/ehac020. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/35171989/
- 12. Early mobilisation and rehabilitation in Swiss intensive care units: a cross-sectional survey. Tomonaga Y, Menges D, Yebyo HG, Fumeaux T, Heise A, Wesch C, Schwenkglenks M\*, Puhan MA\*. Swiss Med Wkly. 2022 Jan 28;152:w30125. doi: 10.4414/smw.2022.w30125. eCollection 2022 Jan 17. PMID: 35096632 Free article. https://pubmed.ncbi.nlm.nih.gov/35096632/ \* Shared last authorship.
- Scope A, Bhadhuri A, Pennington B. Systematic Review of Cost-Utility Analyses That Have Included Carer and Family Member Health-Related Quality of Life. Value Health. 2022 Mar 23:S1098-3015(22)00110-3. doi: 10.1016/j.jval.2022.02.008. Epub ahead of print. PMID: 35339379. https://pubmed.ncbi.nlm.nih.gov/35339379/
- 14. Morozoff C, Avokpaho E, Puthupalayam Kaliappan S, Simwanza J, Gideon SP, Lungu W, Houngbegnon P, Galactionova K, Sahu M, Kalua K, Luty AJF, Ibikounlé M, Bailey R, Pullan R, Ajjampur SSR, Walson J, Means AR. Costs of community-wide mass drug administration and school-based deworming for soil-transmitted helminths: evidence from a randomised controlled trial in Benin, India and Malawi. BMJ Open. **2022** Jul 8;12(7):e059565. doi: 10.1136/ bmjopen-2021-059565. PMID: 35803632; PMCID: PMC9272108. https://pubmed.ncbi.nlm.nih.gov/35803632/
- 15. Akweongo P, Voetagbe E, Tediosi F, Gadeka DD, Salari P, Aikins M. Community perceptions of enrolment of indigents into the National Health Insurance Scheme in Ghana: a case study of the Livelihood Empowerment against Poverty Programme. Glob Health Res Policy. 2022 Jan 28;7(1):4. doi: 10.1186/s41256-022-00238-2. PMID: 35090567; PMCID: PMC8796334. https://pubmed.ncbi.nlm.nih.gov/35090567/

- 16. Lucas ADP, de Oliveira Ferreira M, Lucas TDP, Salari P. The intergenerational relationship between conditional cash transfers and newborn health. BMC Public Health. 2022 Jan 30;22(1):201. doi: 10.1186/s12889-022-12565-7. PMID: 35094683; PMCID: PMC8801108. https://pubmed.ncbi.nlm.nih.gov/35094683/
- Ballouz, Tala; Yebyo, Henock; Raineri, Alessia; Puhan, Milo; Bhadhuri, Arjun; Tomonaga, Yuki; Schwenkglenks, Matthias; Antidepressants and cognitive behavioural therapy interventions for major depressive disorder. 2022. https://www.swissmedicalboard.ch/fileadmin/public/news/2022/SMB\_Assessment\_Rep\_ Antidepressiva\_2022.pdf
- 18. Zgraggen A, Stoffel ST, Barbier MC, Marbet UA. Colorectal cancer surveillance by colonoscopy in a prospective, population-based long-term Swiss screening study - outcomes, adherence, and costs. Z Gastroenterol. 2022 May;60(5):761-778. doi: 10.1055/a-1796-2471. Epub 2022 May 11. PMID: 35545112; PMCID: PMC9179214. https://pubmed.ncbi.nlm.nih.gov/35545112/
- Stoffel ST, Hvalica Coldwell A, von Wagner C, Herrmann B. Testing temporal frames of colorectal cancer risks: evidence from randomized online experiments. Psychol Health Med. 2022 May 29:1-15. doi: 10.1080/13548506.2022.2061716. Epub ahead of print. PMID: 35635266. https://pubmed.ncbi.nlm.nih.gov/35635266/
- 20. Mark M, von Moos R, Cathomas R, **Stoffel S**, Gillessen S. RE: Real-World Use of Bone Modifying Agents in Metastatic Castration-Sensitive Prostate Cancer. J Natl Cancer Inst. **2022** Apr 11;114(4):635-636. doi: 10.1093/jnci/djab216. PMID: 34850058; PMCID: PMC9002272. https://pubmed.ncbi.nlm.nih.gov/34850058/
- 21. Taylor LC, Kerrison RS, Herrmann B, **Stoffel ST**. Effectiveness of behavioural economics-based interventions to improve colorectal cancer screening participation: A rapid systematic review of randomised controlled trials. Prev Med Rep. **2022** Mar 3;26:101747. doi: 10.1016/j. pmedr.**2022**.101747. PMID: 35284211; PMCID: PMC8914541. https://pubmed.ncbi.nlm.nih.gov/35284211/
- Stoffel ST, McGregor L, Hirst Y, Hanif S, Morris L, von Wagner C. Evaluation of the Call for a Kit intervention to increase bowel cancer screening uptake in Lancashire, England. J Med Screen.
   2022 Apr 12:9691413221089184. doi: 10.1177/09691413221089184. Epub ahead of print. PMID: 35410541.

https://pubmed.ncbi.nlm.nih.gov/35410541/

- 23. Stoffel ST, Bombagi M, Kerrison RS, von Wagner C, Herrmann B. Testing Enhanced Active Choice to Optimize Acceptance and Participation in a Population-Based Colorectal Cancer Screening Program in Malta. Behav Med. 2022 Jul-Sep;48(3):141-146. doi: 10.1080/08964289.2020.1828254. Epub 2021 Mar 12. PMID: 33710942. https://pubmed.ncbi.nlm.nih.gov/33710942/
- 24. Sendi P, **Schwenkglenks M**. Risk-Adjusted Performance Measures: A Comment on Elbasha. Pharmacoeconomics **2022**;40:739-740. doi: 10.1007/s40273-022-01153-7. https://pubmed.ncbi.nlm.nih.gov/35713875/

- 25. Durizzo K, Harttgen K, Tediosi F, Sahu M, Kuwawenaruwa A, Salari P, Günther I. Toward mandatory health insurance in low-income countries? An analysis of claims data in Tanzania. Health Econ. 2022 Aug 7. doi: 10.1002/hec.4568. Epub ahead of print. PMID: 35933731. https://pubmed.ncbi.nlm.nih.gov/35933731/
- 26. Stoffel ST, Law JH, Kerrison R, Brewer HR, Flanagan JM, Hirst Y. Testing the Effectiveness of an Animated Decision Aid to Improve Recruitment of Control Participants in a Case-Control Study: Web-Based Experiment. J Med Internet Res. 2022 Aug 26;24(8):e40015. doi: 10.2196/40015. PMID: 36018628; PMCID: PMC9463615. https://pubmed.ncbi.nlm.nih.gov/36018628/
- 27. Galactionova K, Loibl S, Salari P, Marmé F, Martin M, Untch M, Bonnefoi HR, Kim SB, Bear HD, McCarthy N, Gelmon KA, García-Sáenz JA, Kelly CM, Reimer T, Toi M, Rugo HS, Gnant M, Makris A, Burchardi N, Schwenkglenks M. Cost-effectiveness of palbociclib in early breast cancer patients with a high risk of relapse: Results from the PENELOPE-B trial. Front Oncol. 2022 Sep 5;12:886831. doi: 10.3389/fonc.2022.886831. PMID: 36132153; PMCID: PMC9484462. https://pubmed.ncbi.nlm.nih.gov/36132153/
- 28. Stoffel ST, Colaninno A, Bräm R, Schwenkglenks M. Pneumococcal vaccination among adult risk patient with axial spondyloarthritis in Switzerland: Data from the survey of the ankylosing spondylitis association of Switzerland (SVMB). Vaccine. 2022 Oct 12;40(43):6206-6210. doi: 10.1016/j. vaccine.2022.09.056. Epub 2022 Sep 26. PMID: 36175212. https://pubmed.ncbi.nlm.nih.gov/36175212/
- 29. Stoffel ST, Kaushal A, Grimani A, von Wagner C, Sniehotta FF, Vlaev I. Effect of communicating community immunity on COVID-19 vaccine-hesitant people from ethnically diverse backgrounds: an experimental vignette study in the UK. BMJ Open. 2022 Nov 3;12(11):e065804. doi: 10.1136/ bmjopen-2022-065804. PMID: 36328392; PMCID: PMC9638751. https://pubmed.ncbi.nlm.nih.gov/36328392/
- 30. Meyre PB, Blum S, Hennings E, Aeschbacher S, Reichlin T, Rodondi N, Beer JH, Stauber A, Müller A, Sinnecker T, Moutzouri E, Paladini RE, Moschovitis G, Conte G, Auricchio A, Ramadani A, **Schwenkglenks M**, Bonati LH, Kühne M, Osswald S, Conen D. Bleeding and ischaemic events after first bleed in anticoagulated atrial fibrillation patients: risk and timing. Eur Heart J. **2022** Oct 26:ehac587. doi: 10.1093/eurheartj/ehac587. Epub ahead of print. PMID: 36285887. https://pubmed.ncbi.nlm.nih.gov/36285887/
- 31. Barbier MC, Tomonaga Y, Menges D, Yebyo HG, Haile SR, Puhan MA, Schwenkglenks M. Survival modelling and cost-effectiveness analysis of treatments for newly diagnosed metastatic hormone-sensitive prostate cancer. PLoS One. 2022 Nov 3;17(11):e0277282. doi: 10.1371/journal. pone.0277282. PMID: 36327294; PMCID: PMC9632884. https://pubmed.ncbi.nlm.nih.gov/36327294/
- 32. Aebersold H, Serra-Burriel M, Foster-Wittassek F, Moschovitis G, Aeschbacher S, Auricchio A, Beer JH, Blozik E, Bonati LH, Conen D, Felder S, Huber CA, Kuehne M, Mueller A, Oberle J, Paladini RE, Reichlin T, Rodondi N, Springer A, Stauber A, Sticherling C, Szucs TD, Osswald S, Schwenkglenks M. Patient clusters and cost trajectories in the Swiss Atrial Fibrillation cohort. Heart. 2022 Nov 4:heartjnl-2022-321520. doi: 10.1136/heartjnl-2022-321520. Epub ahead of print. PMID: 36332981. https://pubmed.ncbi.nlm.nih.gov/36332981/

- 33. Dr. Soheila Aghlmandi PhD; Dr. Arjun Bhadhuri, PhD; Prof. Heiner C. Bucher, MD, MPH; Koen de Nijs, MSc; Dr. Hannah Ewald PhD; Dr. sc. Dominik Glinz, PhD, MSc; Dr. Viktoria Gloy, PhD; Alexandra Griessbach, MSc; Dr. David Shaw, PhD, MA, MSc, MML; Ala Taji Heravi, MSc; Dr. Kevin ten Haaf, PhD, MSc; Dr. Yuki Tomonaga, PhD, MSc. Low-dose CT screening for lung cancer. 2022. https://cancerscreeningcommittee.ch/themen/lungenkrebs-screening-mittels-ldct/
- 34. Twerenbold S, **Schur N**, Wittwer N, Schneider C, Marxer C, Spondlin J, **Schwenkglenks M**, Meier C. Helsana-Arzneimittelreport für die Schweiz **2022**. https://reports.helsana.ch/en/drugs**2022**/
- 35. Marbet, U.A., Stoffel, S.T. & Brunner-Schaub, N. Dickdarmkrebsscreening in der Schweiz: Sind unsere Patienten genügend motiviert?. Schweiz. Gastroenterol. 3, 110–120 (2022). https://doi.org/10.1007/s43472-022-00076-0
- 36. Siqeca F, Yip O, Mendieta MJ, Schwenkglenks M, Zeller A, De Geest S, Zúñiga F, Stenz S, Briel M, Quinto C, Blozik E, Deschodt M, Obas K, Dhaini S. Factors associated with health-related quality of life among home-dwelling older adults aged 75 or older in Switzerland: a cross-sectional study. Health Qual Life Outcomes. 2022 Dec 21;20(1):166. doi: 10.1186/s12955-022-02080-z. PMID: 36544173. https://pubmed.ncbi.nlm.nih.gov/36544173/
- 37. Yip O, Mendieta MJ, Zullig LL, Zeller A, De Geest S, Deschodt M, Siqeca F, Zúñiga F, Briel M, Schwenkglenks M, Quinto C, Dhaini S. Protocol for a mixed methods feasibility and implementation study of a community-based integrated care model for home-dwelling older adults: The INSPIRE project. PLoS One. 2022 Dec 21;17(12):e0278767. doi: 10.1371/journal.pone.0278767. PMID: 36542596.

https://pubmed.ncbi.nlm.nih.gov/36542596/

38. Lambiris MJ, Venga GN, Ssempala R, Balogun V, **Galactionova K**, Musiitwa M, et al. Health system readiness and the implementation of rectal artesunate for severe malaria in sub-Saharan Africa: an analysis of real-world costs and constraints. The Lancet Global Health. https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(22)00507-1/fulltext

### **Scientific Presentations to External Audiences**

Presenter (name, function)	Presentation title	Event (title, location)	Date
Szucs TD, Director	Asim Assiocation Suisse Insurance Medicine	Vortrag Stettbach	27.01.23
Szucs TD, Director	Mantelstudium Einführung in die Medikamentenentwicklung / Einführung in die Pharmakologie Teil I	Vorlesung UZH	21.02.23
Szucs TD, Director	Gene und Geschlecht	Vortrag Hofwiessbad	24.02.23
Szucs TD, Director	MPH - Grundlagen Recht I	Vorlesung UZH	06.03.23
Szucs TD, Director	MPH - Grundlagen Recht II	Vorlesung UZH	06.03.23
Szucs TD, Director	Mantelstudium (Grundlagen / Einführung in das Recht)	Vorlesung UZH	07.03.23
Szucs TD, Director	MPH - Arzneimittelrecht	Vorlesung UZH	07.03.23
Szucs TD, Director	MPH - Genrecht	Vorlesung UZH	07.03.23
Szucs TD, Director	MPH - Medizinprodukterecht	Vorlesung UZH	08.03.23
Szucs TD, Director	Mantelstudium (Versicherungsrecht)	Vorlesung	14.03.23
Szucs TD, Director	BME329 - Intro to drug development / Medicines and society	UZH Vorlesung	16.03.23
Szucs TD, Director	BME329 - Pharmacology – a crash introductory course I&II	Vorlesung UZH	16.03.23
Szucs TD, Director	Hirslanden Academy Ist Langlebigkeit eine Frage der Gene?	Vorlesung Hirslanden ??	16.03.23
Szucs TD, Director	BME318 - Diagnosis	Vorlesung UZH	20.03.23
Szucs TD, Director	CCDRS_2023 (Modul 1)	Health care systems in transition	21.03.23
Szucs TD, Director	Healthcare Systems in the World and the Trends for Reform	Indian Course Pharmaceuti- cal and Regulatory Science online	21.03.23
Szucs TD, Director	BME329 - Clinical drug development (Phase 1, 2 and 3) Why do clinical trials fail?	Vorlesung UZH	22.03.23
Szucs TD, Director	BME329 - Pharmaco-economics Medicines and IP law & Fundamentals of drug safety and pharmacovigilance	Vorlesung UZH	22.03.23

Szucs TD, Director	Forum Altersmedizin2023 - Digitalisierung in der Prävention: Chancen und Risiken	Referat Waidspital	24.03.23
Szucs TD, Director	Mantelstudium (Informationsrecht und Datenschutz)	Vorlesung UZH	28.04.23
Szucs TD, Director	BME329 - Student presentations & Protocol Q&A	Vorlesung UZH	29.04.23
Szucs TD, Director	Genomics and the Future of Cancer Care	Vortrag iFHP Int Federation of Health Plans, CEO Forum, Athen	05.04.23
Szucs TD, Director	BME318 - Screening	Vorlesung UZH	24.04.23
Szucs TD, Director	Von Idee zum Projekt	Vorlesung Unibas	03.05.23
Szucs TD, Director	MedTalks	Health Science Club, ETH Zürich UZH	12.05.23
Szucs TD, Director	Mantelstudium - Phase 2 Prüfungen / Genomik und Genetik in der Pharmaforschung	Vorlesung UZH	16.05.23
Szucs TD, Director	Personalisierte Medizin	Referat, Vereinigung Den- talhygienikerinnen Zürich UZH	16.05.23
Szucs TD, Director	Einführung in die genetischen Grundlagen von Schmerzen	Vorlesung Balgrist	23.05.23
Szucs TD, Director	Mantelstudium: Öffentliches Gesundheits- recht	Vorlesung UZH	30.05.23
Szucs TD, Director	Bench-to-Bed-to-do-Policy - Rolle von Real World Evidence in der Kardiologie"	Vortrag Salzburg, Jahreskongress Österreichische Kardiolo- gische Gesellschaft	01.06.23
Szucs TD, Director	Impulsreferat bei Vertrauensärzten	Referat Altdorf	09.06.23
Daniela Fazzotta, Scientific Researcher	Value Creation in Cell and Gene Theries from a Health-Economic Perspective	20th International Confer- ence on Medicine (ICPM) Stavros Niarchos Founda- tion Cultural Center, Athens Greece	21.10.23

#### **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 Schwenkglenks** 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, Health Economics Review, JNCI Cancer Spectrum, Medical Decision Making, Osteoporosis International, Pharmacoeconomics, PLOS Medicine, PLOS One, Swiss Medical Weekly

**Paola Salari** is a reviewer for several health economic journals including Health Policy, PLOS ONE, International Journal of Public Health, Swiss Journal of Economics and Statistics, BMC Health Services Research, Swiss Medical Weekly, Swiss Journal of Economics and Statistics, International Journal of Health Policy and Management.

#### Theses Supervised by the ECPM Collaborators in 2022

#### **PhD Theses**

**Helena Aebersold**, Health economic aspects of atrial fibrillation: analyses based on the Swiss AF cohort study (working title; PhD thesis at University of Zürich) Supervised by Matthias Schwenkglenks

**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)

Co-supervised by Matthias Schwenkglenks

**Flurina Meier**, Predictors of health care utilization and costs as well as influence of the COVID-19 lockdown on loneliness and social isolation in community-dwelling elderly persons (PhD thesis in cooperation with ZHAW)

Supervised by Nicole Probst (primary advisor) and Matthias Schwenkglenks (secondary advisor).

Alexandra Griessbach, Making clinical trials more affordable – trial costs, budget planning, and platform trials (PhD thesis). Supervised by Matthias Briel (primary advisor), Thomas Szucs (secondary advisor) and Matthias Schwenkglenks (tertiary advisor)

**Niklaus Meier**, Cost-effectiveness analyses of medical interventions including gene therapies for haemophilia (PhD thesis in cooperation with Berner Fachhochschule) Primary supervisor is Matthias Schwenkglenks.

**Chiara Jeiziner**, Analysis of Pharmacogenetic Information in Summaries of Product Characteristics by Natural Language Processing (PhD thesis) 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**, Value Creation in Cell and Gene Therapies from the Perspective of Health Economics, MMD Thesis, ECPM Basel. Defended in 2022; supervised by Thomas Szucs, Annette Mollet and Emanuele Ostuni.

**Virgilia Rumetsch**, Die Bestimmungen der Weiterverwendungsforschung im scheizerischen Humanforschungsrecht mit Blick auf den Generalkonsent, seine Schwächen und Ansätze zu deren Lösung, MMD Thesis, ECPM Basel. Defended in 2022; supervised by Thomas Szucs, Annette Mollet and Claudia Seitz, University of Basel, Bonn and Ghent, Attorney.

**Perparim Limani**, Conduct of translational oncological clinical trials in academia Myoinositoltrispyrophophate as model, MMD Thesis, ECPM Basel. Defended in 2022; supervised by Thomas Szucs, Annette Mollet and Christoph Renner, MD at Hirslanden Clinic Zurich and University of Basel.

#### **MD** Thesis

**Armin Zgraggen**, Colorectal cancer surveillance by colonoscopy in a prospective, population-based long-term Swiss screening study – outcomes, adherence, and costs Informal supervision by Sandro Stoffel, Michaela Barbier

### **Educating Talents** since 1460.

University of Basel ECPM Institute of Pharmaceutical Medicine Klingelbergstrasse 61 4056 Basel Switzerland

www.ecpm.ch

