

30 years of Frontiers in Drug Discovery and Development

The history of drug discovery and development goes back several thousand years. It started with the use of herbals in China and India. Later, there was evidence of medicinal practice in Egypt. Hippocrates in Greece started to transform medicine from art to science. The foundation of scientific medicine was then developed over two thousand years and many discoveries and achievements came out of Basel. Modern drug discovery started to emerge by the end of the 20th century with the arrival of organic chemistry, the discipline of pharmacology and germ theory. Subsequently, industrial technology made it possible to manufacture high quality medicines. By introducing genomics, the Human Genome Project enabled advances in molecular and genomic medicine in the year 2000.

Tremendous progress occurred in the last 30 years, but we still have a limited understanding of disease pathology and progression.

Cutting-edge technologies emerged, e.g. as humanized models in toxicology or gene sequencing. These help to predict and personalize the clinical success of drug candidates. Algorithms, machine learning, artificial intelligence and other in silico tools assist to study molecules in a dynamic state, even within a single cell. High-throughput technologies and digital devices produce an exponential amount of data. Hence, it is important that such data is transformed to high quality information and subsequently turned into actionable knowledge. In all parts of this process, skills and talents of the individuals along the value chain are key. Our aim is to support research and educate professionals in drug discovery and development, especially at the interface of disciplines.



Prof Dr Thomas D. Szucs
Director



Dr Annette Mollet
Head of Education & Training



Prof Matthias Schwenkglenks
Head of Research

Highlights and Milestones in the history of ECPM

Robert O'Neill, head of biostatistics at CDER, FDA, came to Basel in 1989 with the idea to develop a course in regulatory topics. The focus was to inform European scientists about how the U.S. Food and Drug Administration (FDA) provides advice to sponsors of clinical studies and how FDA evaluates the evidence of the safety and efficacy of new drugs. Since Basel is the European center of pharmaceutical research and development, Fritz R. Bühler had the idea to enhance the university-industry relationships by offering high quality education and training on a neutral, academic ground.

After the big success of the initial course, Fritz R. Bühler and Ruth Amstein started the ECPM in 1991 and developed a two-years curriculum – the ECPM course was born. The course was part of the postgraduate training at the University of Basel within the Medical Faculty and partner of EUCOR, the European campus consisting of the Universities Basel, Freiburg i.Br. and Strasbourg. Until 1999, the successfully passed course led to a EUCOR certificate, which was upgraded to a postgraduate diploma after the introduction of the Bologna system in 2000.

In 1997, Annette Mollet joined ECPM as the new course director. From 2009 to 2014, Fritz R. Bühler, Thomas D. Szucs, Susanne Daniel and Annette Mollet led the IMI, Innovative Medicines Initiative, 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.

In 2003, the research group was established under the leadership of Matthias Schwenkglenks, with a research focus on health economic characteristics, cost-benefit implications and the efficient use of pharmaceuticals and other healthcare interventions in Switzerland and internationally. Long-standing cooperation on outcomes research with the Swiss Group for Clinical Cancer Research (SAKK) and collaborations within the University Basel and Zurich and the pharmaceutical industry were established. One of the most important milestones was the inauguration of the professorship in pharmaceutical medicine and the election of Thomas D. Szucs at the University of Basel in 2009 that paved the way for ECPM to become a full university institute at the Departement of Public Health within the Medical Faculty. The research department evolved over time and consists today of seven research scientists and a number of PhD and master students.

Since then, we are striving to implement teaching in drug development, health economics and policy for the undergraduate students and to continue to offer cutting edge courses by implementing digital course tools and offers. Thanks to our local and international collaboration with partners from the pharmaceutical industry, academia and governmental/regulatory authorities, our research and training remain an important support for modern drug development and informed and transparent health policy decision making.



First ECPM advisory board in 1995



Workshop with the FDA including Robert O'Neill and Carl Peck in 1993



Course auditorium at Pharmcenter Basel



ECPM team event at the chocolate factory



The two course directors Ruth Amstein and Annette Mollet



Handover from Fritz R. Bühler to Thomas D. Szucs in 2009

ECPM Education & Training

Pharmaceutical Medicine

Pharmaceutical Medicine is the medical scientific discipline concerned with the discovery, development, evaluation, registration, monitoring and medical aspects of marketing of medicines for the benefit of patients and the public's health.

IFAPP, International Federation of Associations of Pharmaceutical Physicians and Pharmaceutical Medicine, founded in 1975.

Mission

Our mission 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.

ECPM Course in a Nutshell



Number of students (1991-2023)

2127



Nationalities of students (2021-2023)

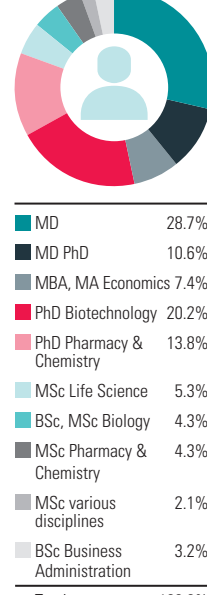
25



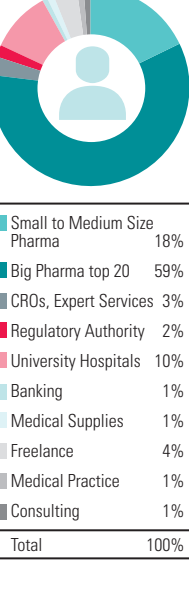
Faculty Members (overall)

150

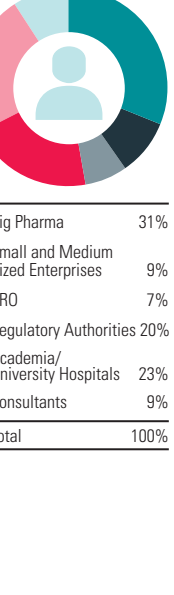
Educational background of students (2021-2023)



Workplace of students (2021-2023)



Teaching Faculty (overall)



Graduates (since 1991)

1271



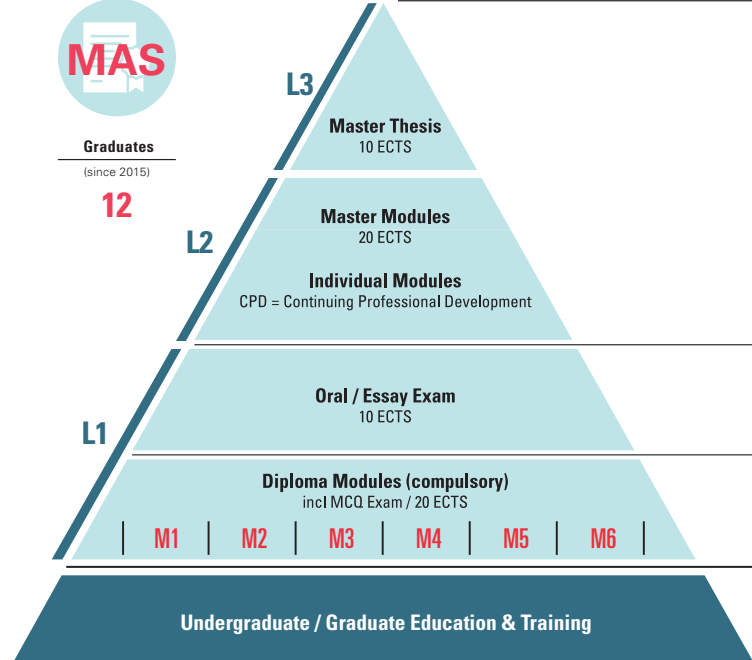
Graduates (since 2001)

660



Graduates (since 2015)

12



MAS
60 ECTS
Master in Medicines Development

DAS
30 ECTS
Diploma in Pharmaceutical Medicine

CAS
20 ECTS
Certificate in Pharmaceutical Medicine

180 ECTS
Bachelor Degree
90-120 ECTS
Master Degree

Bologna title system: The basis of Bachelor or Master Degrees can be supplemented with postgraduate education. The first level [L1] offers a Certificate or Diploma of Advanced Studies in Pharmaceutical Medicine comprising six modules (CAS 20 ECTS / DAS 30 ECTS). The

diploma covers also the theoretical part to apply for the Swiss specialist title in pharmaceutical medicine. In level two [L2], the diploma can be topped up with additional short courses (CPD) and a thesis to achieve a Master of Advanced Studies [L3] (60 ECTS).

ECPM Research

Key Areas of Expertise:

- Pharmacoeconomics and health economics
- Model-based and trial-based cost-effectiveness analysis
- Behavioral economics
- Epidemiology
- Outcomes research
- Clinical and observational study designs
- Biostatistics
- Analysis of real-world data

Example Areas of Activity:

- 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

Cooperation partners:

- Units at University of Basel, University Hospital Basel and Swiss Tropical and Public Health Institute
- Epidemiology, Biostatistics and Prevention Institute, University of Zurich
- Swiss Group for Clinical Cancer Research (SAKK)
- Swiss Medical Board
- Swiss Federal Office of Public Health
- Health Promotion Switzerland
- Health insurance providers & industry

Recent/current key research projects:

- ENDOSCAPE: A technically applicable non-viral gene delivery technology – EU HORIZON 2020
- OPERAM: Optimising PharmacotherAPy in the Multimorbid elderly – EU HORIZON 2020
- SPEARHEAD: SwissPandemic AmR-Health Economy Awareness Detect – Innosuisse Flagship
- INSPIRE: Implementation of an integrated community-based care program for home-dwelling senior citizens – Swiss National Science Foundation, National Research Programme 74
- OPTICA: Optimising Pharmacotherapy In the multimorbid elderly in primary CAre: a cluster randomised controlled trial – Swiss National Science Foundation, National Research Programme 74



Since 30 Years Research & Education is in our DNA

SOWING THE SEEDS FOR TRAINING IN PHARMACEUTICAL MEDICINE

Carl Peck, director CDER, FDA and Robert O'Neill, director biostatistics CDER, FDA, initiated the course "Topics and Issues of Therapy Evaluation and Review" on regulatory topics, scientific advice and review of new drugs.



JOINT TRAINING INITIATIVE OF UNIVERSITY AND INDUSTRY PARTNERS

Working group comprising the ECPM Executive Board, the EUCOR Universities: Basel, Freiburg i. Br., Strasbourg and the Pharmaceutical Industry: Ciba-Geigy, F. Hoffmann-La Roche, Sandoz.

START OF FIRST ECPM COURSE CYCLE

Fritz R. Bühler and Ruth Amstein started the first course cycle awarding the EUCOR Certificate in Pharmaceutical Medicine. First project: Computer based training program on dose finding = RIDO right dose first time.



FOUNDATION OF THE SWISS CHAPTER IN PHARMACEUTICAL MEDICINE

Foundation of the Swiss Association of Pharmaceutical Professionals SwAPP and installation of the Swiss Specialist Title in Pharmaceutical Medicine.

HANDOVER OF COURSE DIRECTOR

Handover of course directorate from Ruth Amstein to Annette Mollet.



IMPLEMENTATION OF THE BOLOGNA SYSTEM

The aim is to promote mobility and to strengthen the competitiveness of Europe as an educational location. This enables the achievement of either a certificate or a diploma in Pharmaceutical Medicine.

LAUNCH OF ECPM RESEARCH DEPARTMENT

Research activities initiated, with a focus on health economic evaluation and clinical epidemiology.



MUTUAL RECOGNITION WITH THE ROYAL COLLEGE OF PHYSICIANS IN LONDON (2005-2015)

Mutual recognition of specialist title and examination in pharmaceutical medicine of the Royal College of Physicians, Faculty of Pharmaceutical Medicine, London and ECPM/SGPM

DIGITAL LEARNING PLATFORM (2006/2021)

Establishment of ECPM website and online learning platform with the learn management system OLAT, new digital platform by Cometas including videos, e-learnings and self-tests in 2021.



INCEPTION OF AMERICAN AND CHINESE COURSE IN PHARMACEUTICAL MEDICINE (2006 & 2008)

Foundation of ACDRS, American Course on Drug Development and Regulatory Sciences in 2006 and CCDRS, Chinese Course in the Peking University, Clinical Research Institut in 2008.

COLLABORATION WITH SAKK

Start of cooperation on outcomes research established with Swiss Group for Clinical Cancer Research (SAKK).



PARTICIPATION IN A EUROPEAN UNION-FUNDED RESEARCH PROJECT (EU FP7, PAIN-OUT)

Benchmarking of patient-reported pain outcomes after surgery, still ongoing today. ECPM co-validated questionnaire and studied drivers of patient satisfaction.

PROFESSORSHIP IN PHARMACEUTICAL MEDICINE AT THE UNIVERSITY OF BASEL

Inauguration of the chair in Pharmaceutical Medicine at the University of Basel and election of Thomas D. Szucs, ECPM becoming a part of the Department Public Health at the Medical Faculty; Implementing Pharmaceutical Medicine in graduate and postgraduate education and training.



PHARMATRAIN CENTER OF EXCELLENCE

ECPM was awarded "PharmaTrain Center of Excellence".

CREATION OF FOUR E-LEARNING PROGRAMS (2013-2021)

2013: Basics in Health Economics
2014: Drug Safety and Pharmacovigilance
2015: Personalized Health Care
2021: The Pathway of Drug Development



START OF MASTER IN MEDICINES DEVELOPMENT

Start of Master program and first Master in Medicines Development (MMD) title awarded.



SUMMER SCHOOL IN COLLABORATION WITH GEORGE WASHINGTON UNIVERSITY (2016-2019)

One week course in Washington "Issues and Trends in Regulatory Sciences" with visits to the FDA and the NIH hospital.

RESEARCH GROUP LEADER

Matthias Schwenkgenks appointed Research Group Leader at the Department of Public Health of the Medical Faculty.

