WINTER EDITION

LEARNING BY DOING

TWO WEEK COURSE

SUMMER SCHOOL PROGRAM

OF THE TRANSLATIONAL EDUCATION PROGRAMS

Join our high quality educational program to learn the methods of translational medicine.

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SEMMELWEIS UNIVERSITY
CENTRE FOR TRANSLATIONAL MEDICINE

PROGRAM SUMMARY

BASIC INFORMATION ABOUT THE PROGRAM

AT THE END OF THIS SUMMER SCHOOL, THE PARTICIPANTS WILL BE ABLE TO

- Acquire knowledge in translational medicine
- Critically appraise the scientific literature
- Understand the main modern clinical scientific methodologies
- Perform healthcare delivery science
- Conduct independent research work

ONE SCHOOL
FOUR COURSES

DEC 31	JAN 22	FEB 2
Application deadline	Start of the course	End of the course

COURSE DIRECTOR

Péter Hegyi, MD, PhD, DSc, MAE

ORGANISERS

The **SUMMER SCHOOL** is organized jointly by the **Centre for Translational Medicine**, Semmelweis University and the Translational Medicine Foundation.

APPLY BY SCANNING THE QR CODE

WHO WE ARE

ABOUT OUR INSTITUTE

SEMMELWEIS UNIVERSITY

Semmelweis University's history started more than 250 years ago in 1769. Today SU is one of the leading institutions of higher education in Hungary and the Central European Region in the field of medicine and health sciences. At SU, our core commitment is based on the integrity of education, research and medicine that makes the University an internationally recognised centre of excellence.

TRANSLATIONAL MEDICINE FOUNDATION

The Translational Medicine Foundation was established in 2016 to

a) promote the practical application of scientific results and innovations in health care

b) stimulate and unify the exchange of information and data flow between universities, hospitals and research centres, and to help their quality control, which can significantly improve the quality of multicenter research projects and reduce the amount of resources needed for research projects

c) help all members of the population (including healthy individuals, patients, doctors, etc.) to understand and implement evidence-based knowledge in everyday life through various platforms (web, printed materials, videos, etc.)

d) participate in the organization of conferences and trainings, in procuring research-related services and in providing financial aid in the search and selection of human resources

THE HISTORY
OF TRANSLATIONAL MEDICINE IN HUNGARY

The Translational Medicine (TM) "learning by doing" education model was launched in Hungary, University of Pécs in 2016 under the leadership of Péter Hegyi, who is the course director of this uniquely developed **SUMMER SCHOOL**. In the past five years, almost 50 PhD students and residents have participated in our programs. In this period, more than 300 high quality publications have been published through scientific research and translational patient care initiated and supported by the Translational Medicine Foundation, the University of Pécs, the University of Szeged and the Semmelweis University (*Nature Medicine*). The results have made it possible to develop and supplement a number of treatment guidelines and to immediately apply scientific results in patient care. The results have made it possible to develop and supplement a number of treatment guidelines and to immediately apply scientific results in patient care.

Semmelweis University aims to rank among the best universities in the world and recognized the importance and the high potential in the translational medicine. Therefore, in 2021 this programme was invited to function in a much bigger scale than before, now under the umbrella of Semmelweis University. As a results, the training at SU already enrolled more than 250 PhD students, and 100 undergraduate research students.

FIND MORE INFORMATION ABOUT THE CENTRE FOR TRANSLATIONAL MEDICINE HERE

THE IMPORTANCE
OF TRANSLATIONAL MEDICINE

The major goal of TM is to turn scientific results for community benefits. Why is this necessary? It is very simple: we currently use scientific findings in everyday medicine with very poor efficiency. The European Statistical Office of the European Commission has recently reported that 1.7 million people under 75 years of age died in Europe in 2016, with around 1.2 million of those deaths being avoidable through effective primary prevention and public health intervention. Therefore, Academia Europaea, one of the five Pan-European networks that form SAPEA (Science Advice for Policy by European Academies), a key element of the European Commission's Scientific Advice Mechanism (SAM), has launched a project in 2018 to develop a model to facilitate and accelerate the utilisation of scientific knowledge for public and community benefit. During the process, leaders in the field, including prominent basic and clinical researchers, editors-in-chief of high-impact journals publishing translational research articles, TM centre leaders, media representatives, academics and university leaders, developed the TM cycle, a new model that we believe could significantly advance the development of TM. This model focuses equally on the acquisition of new scientific results healthcare, understandable and digestible summation of results, and their communication to all participants. The authors, including senior officers of Academia Europaea, produced an important paper to serve as a basis for revising thinking on TM with the end result of enabling more efficient and cost-effective healthcare.

YOU CAN FIND FURTHER INFORMATION
ON OUR YOUTUBE CHANEL AS WELL

THE SUMMER SCHOOL PROGRAM

WHAT WE OFFER

The **SUMMER SCHOOL** mainly focuses on the second and third step of the TM cycle. The program helps students to become critical consumers of medical research papers, to gather primary data on health issues through questioning and observation, and to conduct biomedical research. Students will gain an understanding of the planning of clinical research, including systematic reviews, patient registries and clinical trials, by designing an extended project in study groups, which are led by experienced members of the TM Centre.

THE SUMMER SCHOOL FOCUSES ON THE MAIN MODERN HEALTHCARE DELIVERY SCIENTIFIC METHODOLOGIES OF TM

1. **Systematic reviews and meta-analysis** – we aim to introduce the essentials of meta-analyses, focusing on their role in the evidence-based medicine and the main steps leading to a meta-analysis. Questions will cover key topics, such as how to design systematic search strategies, how to read forest plots, and how to assess the validity of the findings. By attending the series of lectures, participants will learn how to read and understand reports from meta-analyses.
2. **Patient registries** – in this part we aim to introduce patient registries with their role in science, focusing on practical questions. Topics will embrace the entire process from planning a registry to publication. The general built of a registry, the role of the patient registry coordinator and the contributors in the phase of registry development will be discussed. The course will include presentations on the IT background, details on how to develop an electronic case report form, data management, ethical approval, and other roles, such as biostatisticians and clinical research administrators.
3. **Clinical trials** – this part of the school aims to overview the main features of experimental study designs and their role in science, focusing on practical questions. Topics will embrace the entire process from study planning to conclusions from result. Questions will cover key topics, such as the identification of study designs, the role of randomization, the effects of bias, and the judgement of cause-effect relationship

4. Biostatistics - aim of this lecture is to make the participants familiar with the basics of statistical methods used in the medical/biological sciences. Furthermore, to help the participants to interpret the results of statistical analysis more easily and to recognize possible biases in scientific literature. The lecture introduces the most commonly used statistical methods, thus the participants get acquainted with the most important elements of descriptive statistics, basic principles of hypothesis testing, parametric and non-parametric statistical methods and risks of decision errors. Furthermore, topics such as survival analysis, adaptation of questionnaires, sensitivity and specificity of diagnostic tests, and Receiver Operating Characteristic (ROC) Curve analysis will also be covered during the course.

PRIMARY OUTCOME OF THE TWO-WEEK TRAINING

- Participants will be able to understand the concept of the healthcare delivery science as part of the translational medicine cycle.
- At the end of the training, participants will learn the main points of setting up a patient registry, initiating a clinical trial, or conducting a comprehensive systematic review with meta-analysis.
- Formulate a clinical question using the PICO model and identify relevant evidence from appropriate databases.
- Critically appraise clinical research studies using a systematic approach.
- Define the basic knowledges and skills required in translational research.
- Grow the professional international network of translational researchers.

The above mentioned topics will be covered in this school in a four-week training session. Please see the schedule for a more detailed program.

SCHEDULE AND CLASSES

WEEK ONE (JAN 22-26)

GMT+1	MON	TUE	WED	THU	FRI
8:00	Introduction to Translational Medicine	The purpose and rationale of the registry	Running and analyzing a patient registry	Data types	Correlation analysis
9:00	Course introduction	Structured data collection	Patient enrollment	Probability	Data types and extraction
10:00	Introduction to patient registries	Bias in registry analysis	Feasibility, exploratory data analysis	Descriptive statistics	Data analysis
11:00	Introduction to biostatistics	Ethical approval	Descriptive statistics	Parametric and non-parametric tests	Interpreting results
12:00	Introduction to clinical research	Resources	Comparative analysis	Comparing qualitative data	Meta-analysis
13:00	Introduction to systematic review and meta-analyses	Q&A	Q&A	Q&A	Q&A

WEEK TWO (JAN 29 - FEB 26)					
GMT+1	MON	TUE	WED	THU	FRI
8:00	Clinical research types	Types of interventional studies	Types of systematic reviews	Data analysis	EQUATOR network
9:00	Types of observational studies	Bias in interventional studies	Framing your research question	Presenting your results	Step by step article writing for meta-analysis
10:00	Bias in observational studies	Sample size calculation	Protocol writing	Tables in meta-analysis	Specifics of randomized controlled trials
11:00	Pre-study protocol	Maintaining a study, quality assurance	Search and selection	Bias in meta-analysis	Specifics of study protocols
12:00	Ethical considerations and regulations	Closure of a clinical study	Data types and extraction	Level of evidence	Scientific journals
13:00	Q&A	Q&A	Q&A	Q&A	Q&A

CONTACT US

MORE INFORMATION

Should you need any further information, please do not hesitate to contact us:
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Our website

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