



**LEARNING
BY DOING**



24/25

EXPERT PROGRAM

OF THE TRANSLATIONAL EDUCATION PROGRAMS

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



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TMFoundationHQ



transmedkozpont

TM-CENTRE.ORG

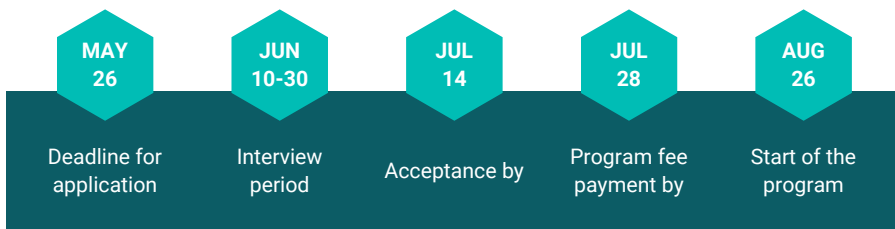
**SEMMELWEIS UNIVERSITY
CENTRE FOR TRANSLATIONAL MEDICINE**

PROGRAM SUMMARY

BASIC INFORMATION ABOUT THE PROGRAM

WHAT WE'RE OFFERING:

- Perform healthcare delivery science
- Understand the main modern clinical scientific methodologies
- Critically appraise clinical research studies using a systematic approach.
- Conduct independent research work



DURATION OF THE PROGRAM

1 years

COURSE DIRECTOR

Péter Hegyi, MD, PhD, DSc, MAE

ORGANISERS

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

TUITION FEES

Program fee: **20000 €** / academic year

Application fee: **75 €** / person or **750 €** / group



FOR MORE INFORMATION,
PLEASE VISIT OUR WEBSITE



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 in 2016 under the leadership of Péter Hegyi, who is the course director of this uniquely developed **PHD PROGRAM**. 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 result, the training at SU already enrolled more than 240 PhD students, and almost 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



EXPERT PROGRAM

WHAT WE OFFER

The **EXPERT PROGRAM** is for people who already have a scientific background and experience, but are unable or unwilling to participate in a 3-year **PHD PROGRAM** due to time constraints. During the 1-year extensive program they can learn all the methodologies and then put them to use in their own research facilities when they return home. Scientists will have the opportunity to write their own first-authored articles. We offer help in learning the methodologies and provide statistical support. Regular group meetings will be held to report on progress. Good communication skills in English are required. Those participating in Expert program will follow Year 1 at the **PHD PROGRAM** schedule.

THE EXPERT PROGRAM 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.

5. Clinical pharmacology - The course will cover the fundamentals of clinical pharmacology as a translational scientific discipline focused on rational drug development and utilization in therapeutics. The course focuses on the following core principles of pharmacology: pharmacokinetics, pharmacodynamics and toxicology; drug discovery and development and clinical study protocol design. Furthermore, the course will cover advanced clinical trial concepts like medical device development, advanced therapeutical medicinal products (e.g. gene therapy), clinical trial and software development in clinical trials, and basics of pharmacovigilance. This course intends to complement the other courses of the translational research teaching program so that participants will have a broad and in-depth overview of the mainstream methodologies of clinical research.

6. Soft skills in medical research - In our PhD program, we emphasize the critical role of soft skills in medical research, offering a suite of 13 courses designed to complement the technical expertise of our students. From leadership principles that foster effective team management and ethical decision-making, to advanced communication and presentation skills crucial for disseminating complex research findings. We also delve into the intricacies of grant writing, essential for securing research funding, and introduce healthcare entrepreneurship to equip students with the knowledge to translate research into impactful healthcare solutions. This holistic approach ensures our graduates are not only adept researchers but also skilled communicators, leaders, and innovators in the medical field.

CTM STAFF - INTERDISCIPLINARY RESEARCH SUPPORT

Our centre provides the help of an interdisciplinary research support team to support the work of researchers and Ph.D. students. Continuous support is provided in a weekly basis during the so called group meetings and project meetings. Additional support can be requested from the other members of the team.



CONTINUOUS SUPPORT IS OFFERED BY:

1. An **Expert Discussant** is appointed for each group. She/He is a highly experienced physician-scientist who provides help from the design of the study until the publication. She/He helps the students (1) to polish their projects, (2) to find the big picture and (3) challenges them week after week.
2. The **group leaders** are experienced physician-scientists who are well known representatives of the given field and have a record of high level research productivity.
3. The **supervisor** of each fellow is senior clinicians (expert) who raises relevant clinical questions, determines the direction of the research and bridges the gap between the theoretical and clinical work in the clinical PhD program. These tutors continuously lead the research work of the fellows during the whole program.
4. **Scientific methodology supervisors (SMS)** are a methodologist who has experience in designing and carrying out translational research projects and provides methodological support in various aspects of science including meta-analyses, patient registries, and clinical trials.
5. **Science methodology advisor and expert (SMA and SME)** are highly experienced methodologists who are responsible for the development of the learning material, for the SMS group, and provide the coordination for the different scientific methods, e.g. meta-analysis coordinator
6. **Biostatisticians** are appointed to each group to provide valuable help for the statistical work of the project.

ADDITIONAL SUPPORT:

1. **Educational supervisors** are expert in the various fields taught through courses to the fellows. Such courses include meta-analysis, patient registry, clinical trial, biostatistics, data handling and clinical pharmacology. Statisticians are appointed to each group to provide valuable help for the statistical work of the project.
2. **IT team** continuously provides help in the development of the electronic case report forms. In addition, they will help with the testing of the electronic interface and ensures the coordination of maintenance.
3. **Ethical coordinator** helps with the process of ethical licensing, obtaining, preparing and submitting the documentation required for ethical approval to the relevant authorities. Consultation with the principal investigator during the process.
4. **Soft skill trainers** provide education regarding the art of scientific communication and networking.



ADDITIONAL ACTIVITIES

Three clubs were founded to provide students the chance to relax after meetings. Sport, Art and Social clubs organise different activities based on different interests. The sport club organises weekly running, swimming and squash, while the art club offers programs, like concerts, exhibitions. Occasionally there are different themed social evenings organised by our social club.

OUTCOMES OF THE TRAINING

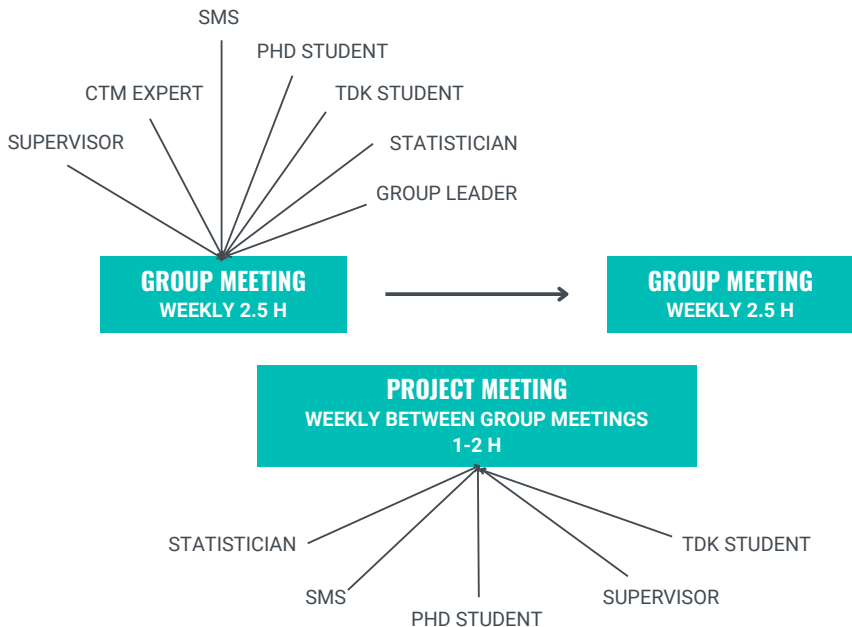
- Participants will be able to understand the concept of the healthcare delivery science as part of the translational medicine cycle
- At the end of the training, participants will learn the main points of setting up a patient registry, initiating a clinical trial, or conducting a comprehensive systematic review with meta-analysis.
- 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.
- PhD degree with high level scientific achievements
- In addition, participants will gain presentation skills, debating skills, language skills, and organizational skills.



SCHEDULE AND CLASSES

During the training period, there will be **regular and periodical meetings**. In addition, the training structure differs between the training years. The curriculum includes e-learning materials and on-site meetings, while the project discussions are held in-person meetings and using online platforms as well. **The first year focuses** on the project conceptualization and starting the projects necessary for the PhD. For this, in the first year, we focus on the main methodologies on a weekly basis. First, we organize group meetings for students with a similar field of interest, including their supervisor. Second, in the first part of the first-year regular courses are organized, generally with e-learning followed by a practical course week. The third part of the week is represented by the project meetings, where we focus on particular projects discussed with the project team.

To ensure that everyone achieves the set milestones, **regular audits are organized**.



GROUP MEETINGS

The main structure of the program is represented by the group meetings. Student in the program are grouped according to their scientific fields. Currently we have groups based on the following topics: dentistry, gynecology, urology, cardiology, intensive care medicine, neuropsychiatry, orthopedics and traumatology, pediatrics, gastroenterology, endocrinology, COVID-19 and infectious diseases, pharmacology, and others.

Each group includes 7-14 students, their supervisor, and project students, on the other hand the centre allocates 1-2 SMSs, a statistician and an expert discussant to the group.

During the first year, each group has a meeting each week in a pre-specified day and hour for the year. In these meetings each fellow presents his/her progress during the previous week and the group jointly discusses the scientific questions, presentations and the progresses. Starting from the second year, following the same group structure, there are pre-specified monthly meetings with the same purpose.

REGISTRY AND CLINICAL TRIAL MEETINGS

Our very dedicated registry and clinical trial coordinator group organizes periodical meetings, where project groups can present their registry and clinical trial initiation and analysis plans. Each meeting is held periodically, on a pre-specified date, separately for each academic year.

PROJECT MEETING

The individual projects are also weekly managed by small study groups which consist of at least the junior fellow and a senior fellow, the tutor, the biostatistician and, if necessary for the project, an expert specialist. The project meetings are lead by the SMS, dedicated to the project team. The project team contacts the SMS with any research related question, who will ensure the fastest and most accurate guidance. The projects are essentially meta-analyses, patient registries, clinical trials, and basic research projects in which the research fellow is the principal investigator (i.e. first author).

Every student will start with a systematic review and meta-analysis in his/ her research field, which should represent the literature search and the basis of the other projects like clinical trials or prospective patient registries.

COURSES

Our research fellows receive scientific and methodological education which is very intensive in the first year in the frame of weekly courses. A list of the included courses are summarized in Table 1. Most of the courses consist of an e-learning part, followed by an on-site workshop. The courses are held by members of the centre or by invited high qualified lecturers.

Courses are organized three times per week, each day for a different set of groups. During the year we follow the same weekly schedule for the groups. Course attendance is mandatory for the first year students. However, we are continuously developing our learning material. Therefore, it is highly suggested for other years as well to follow our courses. On the other hand, the Translational Medicine PhD training ensures the necessary credits to be able to attend the Complex Exam at the end of the fourth semester.

COURSES DURING THE FIRST YEAR OF THE PHD PROGRAM

DATE	COURSE/SEMINAR LECTURE
Week of September 2nd	E-learning: systematic review and meta-analysis
September 9th	Practice: systematic review and meta-analysis
September 16th	E-learning: patient registries
September 23rd	Practice: patient registries
September 30th	E-learning: clinical trials
October 14th	E-learning: biostatistics
October 21st	Practice: biostatistics
October 28th	E-learning: clinical pharmacology
November 4th	Practice: clinical pharmacology
November 11th	E-learning: advanced trial
November 18th	Practice: advanced trial
December 2nd	E-learning: Excel training
December 9th	Practice: Excel trainings
January 6th, 2025	E-learning: article writing
January 13th	Practice: article writing
January 20th	Soft skill course part I: self-management
January 27th	Soft skill course part II: assertive communication
February 3rd	Soft skill course part III: effective cooperation and team-work
March 10th	Grants, research and developments
March 17th	Bioinformatics
April 7th	Introduction to basic science

MOODLE E-LEARNING SYSTEM

As a major improvement, we have built an e-learning platform that covers all the needs of the PhD training. Moodle serves as a platform for e-learning, group meetings, project meetings, project follow-up, and communication. For communication, we have separate forums for group meetings, project meetings, classes, and a general forum. On the other hand, communication with other colleagues is done using the chat function.

Website: elearning.tm-centre.org/edu

SEMINAR LECTURES

There are a total of 8 seminar lectures planned during each year of the training. For the seminar lectures we plan to invite role model researchers with an outstanding scientific achievement. The list of lecturers will be available at the start of the program. You can see a previous seminar lecture invitation [here](#).

PROGRESS REPORTS DURING THE TRAINING

During the training we will organize audits for the PhD students every 3-months.

During the progress report students will have 8-10-minutes to present their progress followed by an open discussion. For the progress report multiple groups are schedule for one day, therefore student can have an insight in other projects and practice multidisciplinary discussions. Watch a short summary of a previous Progress Report [here](#).

MILESTONES

The first three months is about the conceptualization of the systematic review. With the help of the group, during the group meeting we aim to find the best research questions. During the first 3-months students should end with the systematic search and selection of the literature.

During the next 3-months we concentrate on the data collection and the results. In this period, we aim to discuss the result of each project on a structured way, therefore at the end of the first 6-months students should be able to present their results of the meta-analysis.

For the meta-analysis, the next 3-months is about the article writing, at the end of this period the manuscript should be ready to be submitted to top journals. On the other hand, in this period the other projects of the students should be discussed. If the student has another systematic review, he/she should be ready with the literature search. If it is a clinical research question or basic research questions, the protocol of the study should be planned.

At the end of the year, with the proper commitment students should have two projects submitted and patient enrollment started if a prospective study is planned.

Starting from the 2nd year, there will be a progress report every 6 months, with the same presentation structure.

ENGLISH LANGUAGE COURSES – HAVE ADDITIONAL CHARGE

The training is in English. The scientific English skills of the students are developed by the regular presentations, meetings, and courses. If additional language training is required the centre can provide guidance on it, however, this may have additional charges.

PROGRAM	READY FOR PHD	
	Effective Operational Proficiency (EOP)	Vantage
Goals	A2/B 1 to C1	Zero to C1
Skills to be developed	presentation skills, scientific writing, medical communication, medical terminology, discussion skills, giving instructions, negotiation skills, interpersonal skills, project management skills, event organization skills, international relation skills, intercultural skills	presentation skills, scientific writing, medical communication, medical terminology, discussion skills, giving instructions, negotiation skills, interpersonal skills, project management skills, event organization skills, international relation skills, intercultural skills
Distribution of lessons	4 x 45 min Need-Based Skill Development Lessons are scheduled twice a week: 2x90mins per week + e-learning material	(8 x 45 min English for General and Medical Purposes) + 4 x 45 mins Need-Based Skill Development Lessons are scheduled for every day: 4x90 + 1x180 mins per week + e-learning material & individual consultations if needed
Length of studies	Sep - May 34 weeks	Sep - May 34 weeks
Total number of lessons	140 x 45 min classes	(280 + 140) x 45 min classes
Entry level of knowledge	C1	B2
Included in the price	teaching material, audio material, regular assessments, individualized feedback, 2 occasions of tutoring sessions per student per academic year, pronunciation classes held by a native speaker	teaching material, audio material, regular assessments, individualized feedback, 2 occasions of tutoring sessions per student per academic year, pronunciation classes held by a native speaker

Changes to the draft program are possible until the start of the course.

CAREER PATH MODEL

Besides "learning by doing", "learning by teaching" is our other main motto.

The CTM offers an outstanding seven-step progression system for our students.

Firstly, the beginning of the education process starts with a **Scientific Methodology Learner (SML)** (also known as TDK student) position, where regular attendance (above 75%) at group and project meetings is required. It comes with great benefits such as participation in research, direct recruitment opportunities, co-authorship, and an MD-PhD option for the following year.

Moving on to the next level, students become **Science Methodology Practitioners (SMP)** (also known as Year 1. PhD students). This position provides the benefits of participating in the course and getting free help such as statistician support, provision data management background, and IT support. SMPs will also join a continuously growing international network.

Entering the second year of the PhD program, students are able to progress and move on to the next step in the seven-step progression system, which involves mentoring Year 1 PhD students. Students become **Science Methodology Supervisors (SMS)**, which comes with an expectation of being the winner of the month (automatic), Student Excellence Award, and appropriate motivation. The benefits that come with being an SMS are providing a job within the CTM as well as a great number of co-authorships.

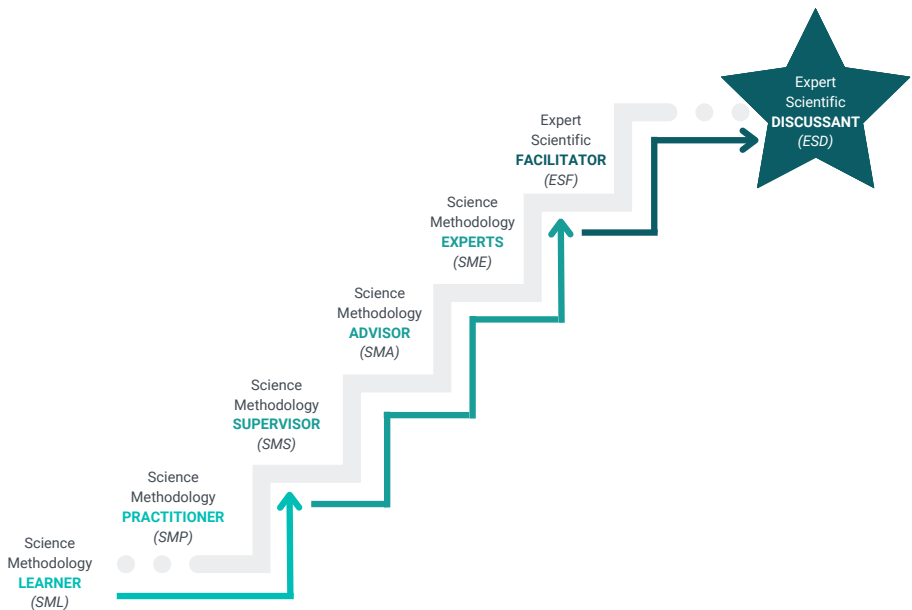
Step four in the progression is **Science Methodology Advisor (SMA)**. The conditions to become an advisor are passing a complex exam, availability of first-authored articles required for own PhD, and a suitably motivated attitude. The higher the expectations, the bigger the benefits get. Those in an SMA position will get the possibility to work in the EUROSTAT database along with Academia Europaea members, and lastly, a co-authorship will come with the position.

The last three steps are for highly dedicated members of the CTM staff. **Science Methodology Experts (SME)** are students who reached step five due to a special invitation. The following benefits are provided for this position. Leadership position where the student will have the possibility to participate in soft skill training, scholarships for training abroad, access to EUROSTAT database and AE membership, co-contracting, and advanced statistical training. Last but not least, it comes with the benefit of admission to the MTA Youth Chapter and with a nomination to the Young Academy of Europe.

Following the expert level, one can join the **Expert Scientific Facilitators (ESF)** group. Members of the ESF group must attend regular group meetings and progress reports, and they must give lectures for the Year I and II students. ESFs are also expected to initiate collaborations, participate in the recruitment of new members, and initiate innovative solutions in the PhD education. This minimum requirement includes the preparation of the PhD thesis. As a result, ESFs will have the possibility to get access to international training, unique collaborations, and memberships.

The last step in the seven-step progression system is joining the **Expert Scientific Discussants (ESD)** group. A PhD degree is mandatory for this position. ESDs must attend regular group meetings and progress reports, and they must give lectures for PhD students. Besides ESF tasks, ESDs are required to review PhD thesis and help students prepare for the PhD defense. Work comes with important rewards. Those in the ESD group will get help in initiating their own research groups. SMEs, ESF, and ESD will be nominated as assistant lecturers or assistant professors.

Every month, **CTM awards the best-performing** student and supervisor in each year level. In addition, the best group, SMS, statistician, and project student in the first year is also awarded. All awards are based on availability, effort, and creativity. In addition, for SMSs, coordination skills and methodological knowledge are also taken into account. For students, the level of presentation skills is a separate criterion, and the activity and contributions of group leaders in meetings are assessed separately.



APPLICATION

HOW TO JOIN OUR PROGRAM

CLICK HERE
OR SCAN THE
CODE TO APPLY



TARGET AUDIENCE

PhD degree or substantial scientific background.

Good English communication skills are recommended (minimum B2 levels, see details [here](#)).

TUITION FEES

Program fee: **20000 €** / academic year

Application fee: **75 EUR €**/ person

in case of group registration larger than 10 participants **750 €** / group

Costs include:

E-learning materials, IT support, data management, statistical support

Accommodation:

The centre can provide help with finding your accommodation, however, the program fees do not cover the accommodation costs or any other self related expenses.

Language courses (optional):

- Effective Operational Proficiency program: 140 lessons, goal: C1 to C2; **5000 €**

- Vantage program: 420 lessons, goal: B2 to C1; **15000 €**

Start of the program: **August 26, 2024**

Duration of the program: **1 year**



REQUIRED DOCUMENTS

For this course you are required to upload the following documents when applying:

- Motivation Letter
- CV

Registration with proof of registration fee payment must be submitted until **May 26, 2024**

In case of transfer difficulties electronic certificate is acceptable.

PAYMENT

You should send the application and course fee to the following bank account:

- *Account holder:* Semmelweis University
- *Account number (IBAN):* HU51 1176 3842 0088 0888 0000 0000
- *Bank name:* OTP Bank Nyrt.
- *Bank address:* Nádor u. 16., 1051 Budapest, Hungary
- *SWIFT Code (BIC):* OTPVHUHB

Please put the information stated below into the subject field:

Name, Title of the course, Semmelweis University Centre for Translational Medicine

IMPORTANT DATES

The interview period will be between **June 10-30, 2024**

Acceptance notification will be sent by **July 14, 2024**

Program fee payment: latest by **July 28, 2024**

RESPONSIBILITIES OF THE CENTRE

The Centre will provide access to the training materials in case of successful recruitment, but this does not cover the technical requirements for access, in particular a stable internet connection and computer equipment. The application fee covers the costs of the application procedure, and the Centre does not undertake to reimburse the costs of unsuccessful applications. Students who are successfully admitted will be offered a training contract by the Centre. Hungarian law will apply to the application process and the training as a whole.



**APPLY
TODAY**



OTHER PROGRAMS OF TM

Now, we offer a one year training. During this year, you will be able to learn advanced scientific English language skills and to learn the basics of TM. Those who pass will automatically be admitted to the **FIRST YEAR PHD** program. Those who are already excellent and have no English language difficulties can apply directly for the **FIRST YEAR PHD** program.



MORE INFORMATION

Should you need any further information, please do not hesitate to contact us:
tmk@semmelweis-univ.hu
SU, Centre for Translational Medicine | HU-1085 Budapest, Baross Street 22, BC22 Office, 4th floor
[Our website](#)





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