

MARCH 14, 2025

What is UniStem Day?

UniStem Day is a one-day meeting organized for high school students since 2009. This event, solely dedicated to the dissemination and outreach of stem cell science and research, provides an opportunity to foster learning, discovery and debate on the themes of knowledge and innovation starting from stem cell research. The event showcases cutting edge research, paints a picture of the daily work of a scientist, and explores the mechanisms behind scientific breakthroughs, including the cultural expectations. By offering lessons, debates, visits at the laboratories and recreational moments, the students engage with the concepts and methodologies involved in stem cell research. Furthermore, they will gain an appreciation for science and how it can be fun and build personal character and relationships based on evidence, perseverance and integrity. As with previous years, UNISTEM DAY 2025 will bring together universities and high schools from all over the world by involving 97 universities and research centres in Australia, Denmark, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Spain, Sweden and the United Kingdom.

UniStem Day

The neverending journey of stem cell research

UniStem is the Centre for Stem Cell Research of the University of Milan founded in 2006 by Profs. E. Cattaneo, G. Cossu, F. Gandolfi and Y. Torrente (unistem.it). The UNISTEM DAY 2025 event is one of many UniStem activities on stem cell research divulgation and this year it celebrates the 17th annual day dedicated to secondary school students and can boast being the largest public event on stem cell research in Europe.

Concept & Coordination

uniStem
Università degli Studi di Milano Centro di Ricerca sulle Cellule Staminali

Patronage

EURO
GCT
European Consortium for Communicating
Gene & Cell Therapy Information

The workshops were provided by the HCEMM-SE Neurobiology and Neurodegenerative Diseases Research Group, the HUN-REN SZTAKI-SE Rejuvenation Group, the Immune-Pathophysiology Group, the Translational Medicine Institute, and Semmelweis University.

#unistemday2025

IG: @unistem_day

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Web: unistem.it

CEU CENTRAL
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UNIVERSITY

CELAB
CENTRE FOR
EUROPEAN
LABORATORY
AND CLINICAL
RESEARCH

U N I
S T E M
D A Y 2 0
2 5

Program

MORNING

9:30 *Arrival*

9:45 Opening
Judit Sándor,
CEU Budapest,
Center for Bioethics
and Law (CELAB)
Márton Varju,
CEU Budapest,
Center for Bioethics
and Law (CELAB)

9:50 - 10:20 **András Dinnyés**
University of Szeged,
Department of Cell
Biology and Molecular
Medicine,
and BioTalentum Ltd
*Clinical application
of regenerative stem
cell therapies:
the future has begun*

10:20 - 10:35 *Question and
answers*

10:35 - 10:50 *Coffee break*

**Central European University (CEU)
Budapest**
1051, Budapest, Nádor utca 15.

Organized by
Organized by: Center for Ethics and Law in
Biomedicine (CELAB) at Central European
University with the collaboration
of Semmelweis University

10:50 - 11:20

Lecture

11:20 - 11:35

11:35 - 12:15

12:15

Csaba Kerepesi
Research Fellow,
HUN-REN SZTAKI
Artificial Intelligence
Research Laboratory,
HUN-REN SZTAKI-SE
Rejuvenation Group
*Aging hours, or how old
are we according
to artificial intelligence*

Questions and answers

Panel discussion

Judit Sándor
CEU Budapest,
Center for Bioethics
and Law (CELAB)

András Dinnyés
University of Szeged,
Department of Cell Biology
and Molecular Medicine,
and BioTalentum Kft.

Csaba Kerepesi
Research Fellow,
HUN-REN SZTAKI
Artificial Intelligence
Research Laboratory, HUN-
REN SZTAKI-SE
Rejuvenation Group

Karolina Pircs
Senior Research Fellow,
HCEMM-SE
Neurobiological
and Neurodegenerative
Diseases Research Group,
HUN-REN SZTAKI-SE
Rejuvenation Group

Moderator: **Péter Kakuk**
CEU Budapest, Center for
Bioethics and Law (CELAB)

Reception

AFTERNOON

12:15 Reception

14:00 - 16:00 **Semmelweis University,
Center for Theoretical
Medicine 1094
Budapest,
Tüzoltó u. 37-47.**

14:00 - 14:45 First workshop
round

14:45 - 15:00 Break

15:00 - 15:45 Second workshop
round

15:45 - 16:00 Break

For more information:
unistem.it

Workshop 1

How to sort cells? (Ágnes Varga)
1094 Budapest Tüzoltó utca 37-47.
Ground floor D comb, room 0.116

How is it possible to analyze and sort 3000 living cells per second? In a short presentation, we will present the theoretical background, operation and practical use of FACS (fluorescence activated cell sorting). With FACS, we are able to separate living cells from each other based on size and "color" (fluorescence intensity). The selected living cells can be used in further experiments, e.g. in the framework of developing procedures aimed at treating diseases. During the program, participants can also see cell sorting in practice.

Workshop 2

*Science in your hands,
interactive laboratory visit
(Anna Abbas, Vivien Pillar, Zsófia Koltai)*
1094 Budapest Tüzoltó utca 37-47.
Ground floor, comb D, room 0.106

Within the framework of an interactive laboratory visit, you can gain insight into the everyday operation of a molecular biology laboratory. After a presentation of the lab, you can get acquainted with, for example, a basic laboratory tool, gel electrophoresis, as well as more serious equipment such as a robotic pipetting machine and an automated microscope. They will have the opportunity to examine neurons under a microscope and compete with a pipetting robot, where they can compare their speed with the speed of manual pipetting.

Workshop 3

*Communication in the world of neurons,
or how do neurons fire?*
(Gazdik Melinda Erika, Zsoldos Roland)
1094 Budapest Tüzoltó utca 37-47. Ground floor,
comb D, room 0.111

Visitors can gain insight into the functional examination of networks and cell cultures created from neurons and can become familiar with the whole-cell patch-clamp technique used to measure the electrical activity of individual neurons. Within the framework of the session, we will make microelectrodes and use them to directly measure the electrical function of individual neurons. We will also examine the communication taking place in a functioning neuron network and show how we can artificially influence the function of neurons.

Workshop 4

*The use of animal experiments in cancer
research (Schvarcz Csaba, Nagy János)*
1094 Budapest Tüzoltó utca 37-47. 3rd floor,
comb D, rooms 3.314 and 3.351

Malignant tumors represent one of the greatest health challenges of our time. We still do not know exactly why tumors develop, or why a certain treatment is effective in one patient and not in another. How can animal experiments help answer the questions raised? Is it possible to replace animal experiments in other ways? How is it possible to conduct an animal experiment in the most ethical way possible, minimizing the suffering of animals? What happens to the experimental samples after the experiments are completed? We would like to address these questions and topics in an interactive workshop.