

## EUGLOH Summer School

### Biomedical Data Processing and Global Aspects of COVID-19

July 6<sup>th</sup> – 10<sup>th</sup> 2020

Organized by University of Szeged (Hungary)

with the participation of invited speakers from the member universities of the EUGLOH alliance:

Ludwig-Maximilians-Universität München (Germany)

Lund University (Sweden)

Universidade do Porto (Portugal)

Université Paris-Saclay (France)

#### WHAT CAN YOU LEARN?

To educate students for the use of **modern information technologies** for effective research work and for the dissemination of scientific results from the collected data.

Overview of the **COVID-19 pandemic**, with a special focus on the multidisciplinary research activities at the five participating universities covering all parts of Europe.

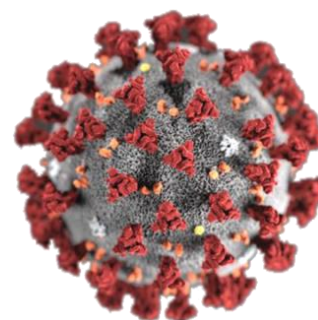
**Participating students are trained by live streaming or video courses in different topics related to the development of transversal skills:**

- (Biomedical) data collection, signal processing and analyses
- Artificial intelligence and machine learning in
  - Natural language processing
  - Biological image analysis
  - Gene expression analysis
- Image processing applications
- From literature knowledge to mechanistic modelling
- Health data science and management
- Statistical decision making
- Dissemination of scientific results



**The school covers global aspects of COVID-19 pandemic, including the medical challenges, models for the virus spread, economic and social consequences:**

- Mathematical modelling of the COVID-19 outbreak
- COVID-19 outbreak: similarities and differences with previous pandemics
- An economic model of optimal lockdown
- SARS-CoV-2 and COVID-19: the past, present, and future perspectives
- Epidemiological aspects:
  - Data collection and interpretation
  - Population testing and tracing
  - Conception and design (illustrated through a current German Coronavirus study)



#### WHO IS THE TARGET AUDIENCE?

Bachelor, master and PhD students from all faculties of the partner universities of the EUGLOH alliance (University of Szeged, Université Paris-Saclay, Lund University, Ludwig-Maximilians-Universität München, Universidade do Porto). No special background knowledge is required. School is also open for junior and senior scientists of the participating universities.

## WHAT PEDAGOGICAL METHODS/TOOLS ARE APPLIED?

Lectures by online video streaming, interactive communication tools, teamwork, networking.

## HOW ATTENDANCE IS AWARDED?

EUGLOH Certificate and 4 ECTS will be provided for the students attending the school.

## WHERE ARE THE LECTURERS FROM?

### ***University of Szeged and partner institutions:***

- Bolyai Institute, Coronavirus Team
- Department of Image Processing and Computer Graphics
- Department of Informatics, Natural Language Processing group
- Department of Technical Informatics
- Institute of Finance and International Economic Relations
- Biological Research Centre
  - Institute of Biochemistry
  - Laboratory of Microscopic Image Analysis and Machine Learning
  - Institute of Biochemistry, Synthetic and Systems Biology Unit
- Hungarian Centre of Excellence for Molecular Medicine
- Extreme Light Infrastructure - Attosecond Light Pulse Source (ELI-ALPS)

### ***Ludwig-Maximilians-Universität München***

- Center for International Health

### ***Lund University***

- Systems Virology Group, Department of Translational Medicine
- Laboratory for CNS Disease Modeling

### ***University of Porto***

- Computer Sciences Department
- Community Medicine, Information and Health Decision Sciences
- Institute of Public Health and National Health Council

### ***Université Paris-Saclay***

- Research Center in Public Health
- Maison des Sciences de l'Homme

## WHERE CAN YOU GET INFORMATION?

*General information:* eugloh@rekt.szte.hu

*Academic program:* Prof. Ferenc Peták, Department of Medical Physics and Informatics, University of Szeged (EUGLOH, academic leader of Work Package for Research and Innovation), petak.ferenc@med.u-szeged.hu

*Administrative support:* Eszter Sasi-Pokriva, sasi-pokriva.eszter@med.u-szeged.hu

## Registration

<https://u-szeged.hu/about-us/news-and-events/eugloh-summer-school>

Registration deadline: June 15, 2020.