

# Problem-based and Team-based Learning Strategies in the education of biomedical and natural sciences

## Project Summary

The TELSON project aims at: (1) innovating teaching practice through technology-enhanced learning tools, such as **virtual scenarios**; (2) developing students' critical thinking and reasoning skills with the use of **scenario-based learning** methods; (3) sharing know-how and transferring best practices from universities which have already gone through a successful implementation of authentic, motivating, competency-based learning styles into curricula; (4) delivering interactive virtual scenarios in the languages and cultures of the partners and associated educational networks; (5) comparing pedagogical value and efficiency of two different but established scenario-based learning methods: **Problem-Based Learning (PBL)** and **Team-Based Learning (TBL)**.

## Summer School

Summer Schools in Mathematical Biology are annually organized for more than 14 years. It is an open event for students in Mathematical Biology and any other participants, visited often by students in neuroscience, biomedical engineering, biophysics, and informatics. The 15<sup>th</sup> Summer School (2019) forms an integral part of the intensive training program delivered by the TELSON project.

Besides lectures and workshops, this year's program will provide the students with opportunities to work in teams, solving real-world problems while facilitated by junior staff trained in methodology behind scenario-based learning and virtual scenarios. The sessions will be monitored by senior trainers from partner universities whose feedback will help to direct next training programs of the young educators individually.

**DATE:** September 10-12, 2019 – Tuesday, Wednesday, Thursday  
**VENUE:** Vinařský dům Dominant, Družstevní 884, 691 03 Rakvice, Czech Republic  
**FEE:** 0,- CZK. Registered students will get free program, accommodation and meals. Transportation to the venue is at students' expense.  
**REGISTRATION:** on-line, not later than July 7, 2019: <https://tinyurl.com/bimat-summer-school>



## Program

<b>10</b> SEPTEMBER 2019	Arrival & check-in Lectures <b>PBL session</b>	<b>11</b> SEPTEMBER 2019	<b>TBL session 1</b> Trip Social evening	<b>12</b> SEPTEMBER 2019	<b>TBL session 2</b> <b>Workshop</b> Check-out & departure
--------------------------------	--	--------------------------------	--	--------------------------------	--

## Topics

<b>PBL – day 1</b>	<b>TBL – day 2</b>	<b>TBL – day 3</b>	<b>Workshop – day 3</b>
Image analysis and processing Similarity measures Information theory Joint histogram MATLAB programming	Clinical data analysis Canonical correlation analysis Real-world pipelines Results interpretation	Machine learning Artificial neural networks Deep learning MATLAB programming	Automated presentations On-line data visualization Shiny apps R programming