



Lasers in Medicine and Life Sciences

Advanced summer school for under-graduate or postgraduate students of medicine and physics

13th–18th July 2015



European Union
European Social
Fund



INVESTING IN YOUR FUTURE

1. Invitation

The city of Szeged is proud to have been chosen as the site of one of the four pillars of a massive European laser project entitled [ELI](#) (Extreme Light Infrastructure). Szeged is going to host [ELI-ALPS](#) (Attosecond Light Pulse Source), a facility dedicated to ultra-short laser pulses. Apart from breaking new ground in the study of very fast atomic and molecular processes, it is also expected to bring about improvements in medicine and life sciences. To discuss and disseminate the implications of these developments, the University of Szeged organised a summer school entitled Lasers in Medicine and Life Sciences (LAMELIS) in 2014. We feel that the feedback we have received on the quality of the talks and the atmosphere of the first event is not only an encouragement but also an obligation to establish a tradition, so we announce a LAMELIS again this year. The LAMELIS 2015 summer school will be held between [13th and 18th July](#).



2. Programme

Distinguished European researchers have been invited to deliver keynote talks on the following topics:

- the status of the ELI project
- optical coherence tomography
- dentistry and oral surgery
- confocal microscopy
- micromanipulation
- muscle physiology investigations
- the treatment of retinal diseases
- cataract and refractive surgery
- laser surgery
- lasers in dermatology
- lasers in microcirculation
- hadron therapy

Confirmed speakers

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| • Ferenc Bari (University of Szeged, HU) | • Martin Leahy (National University of Ireland, IE) |
| • Tomáš Čížmár (University of Dundee, UK) | • Péter Maróti (University of Szeged, HU) |
| • Győző Garab (Biological Research Centre, Szeged, HU) | • Serge Mordon (French Institute of Health and Medical Research, FR) |

- Adrian Podoleanu (University of Kent, UK)
- Gábor Szabó (University of Szeged, HU)
- Kinga Turzó (University of Szeged, HU)
- Katalin Varjú (University of Szeged, HU)

Other speakers are being contacted.

Seminars and laboratory visits

We also offer seminars in the fundamentals of optics and laser physics, and you will have the chance to gain hands-on experience with lasers in research laboratories and clinical facilities.

Social programme

You can choose from an assortment of extracurricular activities to dive into the Szeged atmosphere, make bonds and forge a new generation of experts who will be able to live up to the potential offered by lasers in medicine.

3. The city of Szeged

Szeged is the third largest city of Hungary and the regional centre of the Southern Great Plains. It is divided in two by the river Tisza. The name Szeged was first mentioned in a royal charter of 1183. It might have come from Hungarian 'szeg' (angle), referring to the corner the river Tisza makes with its tributary, the Maros, whilst some say it can be traced back to an archaic sense of 'szeg', meaning 'dark blond', and it refers to the colour of the water where the Maros joins the Tisza. The current cityscape was formed by the reconstruction following the great flood of 1879, which killed 165 people and destroyed about 5600 buildings. An emblematic building of the city, the Votive Church, was erected in memory of the flood, and the sections of the outer boulevard bear the names of the cities that contributed to the rebuilding of Szeged: Rome, Brussels, Berlin, Paris, London and Moscow.

A city of 170 000, Szeged is a teeming cultural and intellectual centre with a student population of 25 000, many of whom are international students of medicine, giving the city a touch of multiculturalism. Still, it remains a quiet, human-sized, liveable and loveable city, whose atmosphere is created by the Tisza, by extensive green spaces and by enchanting statues. Boasting an average of 2000 sunshine hours a year, Szeged has earned the moniker 'the City of Sunshine'. In addition to its theatre and symphonic orchestra, in the summer Szeged also hosts the Open Air Festival, the history of which goes back more than 80 years. The Hungarian festival season concludes with the Szeged Youth Days (SZIN) in each year since 2003.



4. The University of Szeged

The University of Szeged was established in 1921 with the relocation of the University of Kolozsvár (Cluj-Napoca) founded in 1872. Since then, it has grown to be one of the most prestigious universities in Hungary, ranked as number one amongst Hungarian universities and in the top 300 in the world in three consecutive years (2003, 2004 and 2005). It is now organised into 12 faculties, which provide education for 25 000 students and employ more than 6000 people, 1000 of which are teachers.

Alongside internationally noted contributions to mathematics, information technology, physical and material sciences, the University is also noted for its strong focus on life sciences, augmented by close ties to the Biological Research Centre of the Hungarian Academy of Sciences. The most significant accomplishment under the auspices of the University of Szeged so far has been the discovery of vitamin C and the exploration of the citric acid cycle, made by Albert Szent-Györgyi and rewarded with a Nobel Prize in 1937.



5. Practical information and fees

Admission criteria

The programme is open to a maximum of 45 undergraduate (from 2nd year on) or postgraduate students in the fields of medicine or physics. If necessary, selection will be made considering the students' motivation, English level and previous research experience, if any.

Application

Please fill in the attached pdf application form and send the required documents to lamelis@med.u-szeged.hu.

Extended application deadline: 31st May 2015.

Fee: 200€. This fee includes tuition, accommodation, lunches, scheduled excursions, and extra-curricular activities. We do not cover the costs of passports, visas, health insurance, travel to and from Hungary and other personal expenses.

Further information

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Website: <http://www.lamelis.eu>

Facebook: <https://www.facebook.com/pages/Lasers-in-Medicine-Life-Science-Summer-School/584673201621547>

Last year's event on Youtube:

<https://youtu.be/6tRNltNEjfc?list=PL9x5RtDzjwBzp8kvwUsM3kHonYTx8k2YU>