

Meeting the next generation of scientists: the European Union Contest for Young Scientists

As young scientists from across Europe gathered in Bratislava to exhibit their projects, find out what impressed the jury most.

By Estelle Mossou, ILL

The 2012 European Union Contest for Young Scientists (EUCYS)^{w1} took place in the beautiful Slovak capital of Bratislava. For three days, 117 contestants aged 16-21 from 37 countries gathered in the Incheba exposition centre, all eager to present their work. As a new jury member, I was overwhelmed by the quality of the science displayed.

Picking just a few winners from 83 amazing projects in disciplines as varied as engineering, biology, social science and mathematics, all of which had already won first prize in their national contests, was an extremely difficult task.

The three cash prizes offered by the European Commission were awarded

Eileen Clucas from ILL (on the right) awarded the EIROforum prizes.



Image courtesy of the European Commission

to 19-year-old Austrians Philip Hu-prich, Manuel Scheipner and Daniel Zindl for developing an engineering solution to protect cameras in extreme environments; Mark James Kelly (18) and Eric Doyle (19) from Ireland for mathematically simulating how objects respond to gravity in particular environments; and Jakub Nagrodzki (17) from Poland for synthesising a modified molecule that can allow drugs to enter the nucleus of a cell, which offers the potential to treat various genetic diseases.

In addition, there were 19 special prizes, among them visits to research sites, including the eight members of

EIROforum^{w2}, the publisher of *Science in School*. Céline Lay, Fanny Risbourg and Ophélie Bolmin, three 18-year-old French engineers who designed an energy-efficient hexapedal robot, will visit the world's largest particle physics laboratory, CERN^{w3}, in Geneva, Switzerland. EFDA-JET^{w4}, the European fusion energy experiment in Culham, UK, will welcome Tim Piper (16) from Germany, a young microscope enthusiast who has found ways of improving light microscopy images.

Sweden's Nils Wilhelm Ygge's (19) project, to fly a balloon to an altitude of 30 000 m to take photographs, will enable him to attend one of the Euro-

In 2012, EUCYS was held in the Slovak capital Bratislava.



Estelle Mossou from ILL gave one of the EIROforum lectures at EUCYS in Bratislava.

Image courtesy of the European Commission

pean Space Agency (ESA)'s^{w5} major five-day space science conferences in Europe. The main site of the European Molecular Biology Laboratory (EMBL)^{w6} in Heidelberg, Germany, will open its doors to Tim Prezelj (18), a biologist from Slovenia who produced a chimeric receptor which could potentially be used to design a vaccine against malignant melanoma.

Thomas Glenn Myers (18) from the UK was awarded a visit to the European Southern Observatory (ESO)'s^{w7} telescopes in Chile. In his search for gravitational lensing systems, this dedicated physicist scanned 10 000 images of galaxies by eye. The European X-ray free-electron laser facility (European XFEL)^{w8} in Hamburg, Germany, will welcome the Israeli contestant Alfarook Abu Alhassan (18), who studied the kinetics of water crystallisation in porous media.

At the Institut Laue-Langevin (ILL)^{w9} in Grenoble, France, where we host the world's most intense neutron source, we are lucky to host 19-year-old Austrians Lucas Noel Sulzberger and Robert Gautsch, who developed a faster way of detecting *Clostridium* spores in dairy products. Helen Mary Sheehan (18) from the UK will visit the European Synchrotron Radiation Facility (ESRF)^{w10}, after she impressed the jury by processing and characterising a new steel alloy using selective laser melting.

To broaden the participants' horizons, daily lectures offered an insight into different areas of science. Jeremy Philpott from the European Patent Office gave a talk to raise patent awareness, and three lectures were given by members of EIROforum. German Carillo Montoya from CERN spoke about the Higgs boson, Jean Pierre

Guignard from ESA introduced students to Earth observation from space, and I represented ILL with a lecture about the impact of neutrons in the life sciences.

The EUCYS contestants are among Europe's brightest young scientists but they are also young people like any other. In between jury visits and lectures, they had the opportunity to relax, playing table football or board games, and the varied social and cultural programme encouraged them not only to swap their ideas about science but also to make new friends.

I felt very privileged to meet the next generation of scientists. Their enthusiasm for their projects and curiosity about science was extremely refreshing. This was undoubtedly one of the highlights of my year.

Why not encourage your students to take part in your national contest

EUCYS contestants in 2012 came from 37 countries.





In between jury visits and lectures, contestants got to relax and play.

for young scientists^{w11}? We may even meet them at EUCYS 2013 in Prague, capital of the Czech Republic!

Web references

w1 – Find out all about EUCYS 2012, including all projects and winners: www.eucys2012.eu

w2 – EIROforum is a collaboration between eight of Europe’s largest inter-governmental scientific research organisations, which combine their resources, facilities and expertise to support European science in reaching its full potential. As part of its education and outreach activities, EIROforum publishes *Science in School*. See: www.eiroforum.org

w3 – Based in Geneva, Switzerland, CERN is the world’s largest particle physics laboratory. See: www.cern.ch

w4 – Situated in Culham, UK, JET is Europe’s largest fusion device. Scientific exploitation of JET is undertaken through the European Fusion Development Agreement (EFDA). See: www.jet.efda.org

w5 – EMBL is Europe’s leading laboratory for basic research in molecular biology, with its headquarters in Heidelberg, Germany. See: www.embl.org

w6 – ESA is Europe’s gateway to space, with its headquarters in Paris, France. See: www.esa.int

w7 – ESO is by far the world’s most productive ground-based astronomical observatory, with its headquarters in Garching near Munich, Germany, and its telescopes in Chile. See: www.eso.org

w8 – European XFEL is a research facility currently under construction in the Hamburg area, Germany. It will generate extremely intense X-ray flashes for use by researchers from all over the world. See: www.xfel.eu

w9 – ILL is an international research centre at the leading edge of neutron science and technology, based in Grenoble, France. See: www.ill.eu

w10 – Situated in Grenoble, France, ESRF operates the most powerful

synchrotron radiation source in Europe. See: www.esrf.eu

w11 – The EUCYS website lists the national organisers of contests for young scientists, the winners of which take part in EUCYS. See www.eucys2012.eu or use the direct link: <http://tinyurl.com/bfkmmfa>

Morten Lennholm, EUCYS jury member from EDFA-JET, proudly presenting *Science in School* at the EIROforum stand.



Image courtesy of Marlene Rau

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Originally trained as a physicist, Estelle Mossou developed an interest in self-assembling systems during her PhD. She now works in the deuteration laboratory at the Institut Laue-Langevin (ILL)^{w9} on an EU-funded project to develop a common interface for neutron and X-ray structural studies of biological samples.



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