



Photobiology School, 2014

The European Society for Photobiology recently held the 3rd edition of the biannual Photobiology School in the picturesque South Tyrolean town of Bressanone (Brixen) in Italy.

From the 16th to the 21st of June 42 students, postdocs and more senior scientists convened to Brixen from different countries to attend the School. Similarly to previous editions, the Faculty comprised 20 members, who are worldwide-recognised expert in the major fields of photobiology. Remarkably, these scientists travelled all the way to Brixen and delivered top-notch lectures with hardly any financial support: without the idealism and commitment of these scientists and clinicians it would have been impossible to run the School, and we feel that everybody should be extremely grateful to these people for their contributions.



In addition to the approximately 40 lectures, the School also featured a poster session with plenty of excellent posters from the students, a gorgeous free lunch in a restaurant within walking distance from the School venue, and a social dinner for all the delegates. Taking advantages of the cosy downtown area, these events were essential to foster the communication, the collaboration and to create a friendly atmosphere between the students.

At the end of the School an exam was scheduled, and the students who passed are eligible to apply for

the [ESP Supplement](#) to their PhD degree.

This year a questionnaire was distributed to all the attendees to survey their opinions and suggestions for future Schools. The feedback was generally very positive, but the comments will be carefully scrutinized by the Education and Training Committee, and will provide suggestions for improvements for the School in 2016.

*Kristian Berg
School Chair*

School Organizing Committee: Kristian Berg (NO, Chair), Lesley E. Rhodes (UK, ESP President), Giorgia Miolo (IT, Local Organizer), Giulio Jori (IT, Local Organizer), Francesco Ghetti (IT, ESP Treasurer), Santi Nonell (ES, Chair - ESP Education and Training Committee).

School Faculty: Stefan Anderson-Engels (SE), Roberto Bassi (IT), Kristian Berg (NO), Giovanni Checcucci (IT), Olimpia Coppellotti (IT), Giulio Jori (IT), Herwig Kostron (AT), Miguel Miranda (ES), Tomas Morosinotto (IT), Carlo Musio (IT), Santi Nonell (ES), Jacques Piette (BE), Lesley Rhodes (UK), David Russell (UK), Evelyne Sage (FR), Rolf-Markus Szeimies (DE), Franz Trautinger (AT), Massimo Trotta (IT), Rex M. Tyrrell (UK), Georges Wagnieres (CH)

School Programme

The purpose of the school is to provide an overview of the main aspects of photobiology; the topics covered included the basic principles of photobiology and photochemistry of biomolecules, and the applications of such



principles to explain the effects of climatic changes, the influence of light on biological systems, and the use of light and light-driven processes in medicine and related areas. Each of the subjects was covered by general lectures, whose attendance by all participants was compulsory, and by optional specialist lectures that allowed to gain deeper insight of the topic.

General lectures include:

- Basic photophysics and photochemistry
- Environmental photobiology
- Light dosimetry in biological tissues
- Photosensory biology
- Photosynthesis
- Photodynamic medicine: from basics to practice
- Antimicrobial photodynamic therapy
- Basic photodermatology
- Photoreactivity and phototoxicity of drugs
- Solar UV-induced DNA damage, repair, mutagenesis and carcinogenesis
- Solar UV generation and biological significance of reactive oxygen species
- Solar UVR-induced vitamin D synthesis

Special lectures include:

- Photophysics and photochemistry: measurement, simulation, and analysis of spectroscopic data
- PDD/PDT in neurosurgery: clinical applications
- Mechanisms by which tumor cell die or survive after photodynamic therapy
- Nano-systems for photodynamic therapy
- Phototherapy: specific treatment modalities
- Photooxidative reactions of drugs with biomolecules
- Photodynamic therapy in dermatology: from experimental status to routine therapy
- Photochemical internalization (PCI): from photodynamic targeting of lysosomes to clinical utilization of PCI
- A role for UVA on skin cancer
- Endogenous and exogenous protection against UV-generated oxidative stress



Viewing posters at the School

The school participants presented 23 posters showcasing their current research. The posters have been on display throughout the entire duration of the School and besides the official poster session, they have been viewed and discussed during coffee breaks.

A chat with a “student”

Those of us who have been dedicated to ensure the success of the Photobiology School are excited to see that photobiologists from far distant sites are attending the School. It also makes us curious about their reason for traveling such long distances and how they found the information about the School. Therefore, we interviewed Dr. Joseph Nana Annan (see picture) who travelled all the way from Winneba in Ghana. In order to reach Brixen, Joseph had to fly to Egypt, stay overnight and then fly to Rome from where he travelled by overnight train to Brixen. Joseph currently holds a position at the Department of Biology, University of Education, in Winneba, a city 66 km from Accra, the capital of Ghana. The

University is relatively large, hosting approximately 17000 full-time students in 4 campuses, and 16000 long-distance students (from 18 study centres). It turned out that he had a long history in photobiology including an MPhil in Botany from University of Cape Coast, Ghana (1999), on effect of solar radiation on two marine filamentous cyanobacteria. Further, Joseph holds a PhD in Plant Science from Oklahoma State University, U.S.A. (2008), on the growth response of green algae to nutrient limitation and salinity stress, experimentally closely related to photobiological topics, such as photosynthetic light-response effects, pigment composition, and chlorophyll fluorescence parameters. Last year he also attended the ESP congress in Liège, where he learned about the Photobiology School. He is currently developing a course in photobiology at the



MSc level and wanted to use the Photobiology School as a basis for the course. Joseph stated that he was very pleased with what he learned in Brixen and will utilize the School in his further planning of the course back in Winneba. There are certainly many needs that may be fulfilled by the Photobiology School that were not initially envisioned!

Kristian Berg



In this edition of the School we were pleased to host 42 students, coming from 17 countries from all over the world. The affiliations of the School attendees (see graph on the left) included a number of countries in Europe, as well as more distant sites such as South Africa, Ghana, Egypt and Novosibirsk in Russia.



The venue

The School has been held at the Brixen campus *Casa della Gioventù Universitaria* of the University of Padova (Via Rio Bianco 12, I-39042, Bressanone, Italy), located very close to the heart of the town. This venue provides very good facilities for schools and workshops, and it has been made available for free by the University of Padova. In the near future (October 14th-18th, 2014) the venue will host the 10th *International Symposium on Photodynamic Therapy and Photodiagnosis in Clinical Practice*, organized by Giulio Jori and Herwig Kostron, who have been involved also in the ESP school.

The official picture of the School



see you in
2016!!!

European Society for Photobiology

ESP PHOTOBIOLOGY SCHOOL

16-21 June, 2014

Brixen/Bressanone, Italy