

**THE EUROPEAN ASTROBIOLOGY CAMPUS – Towards a comprehensive training of Astrobiology Students in Europe.** W. D. Geppert<sup>1</sup>, K. Kirsimäe<sup>2</sup>, M. Gargaud<sup>3</sup>, I. L. ten Kate<sup>4</sup>, K. Lehto<sup>5</sup>, G. Tautvaišienė<sup>6</sup>, J. F. Gameiro<sup>7</sup>, P. Jakobsson<sup>8</sup>, S. Veski<sup>9</sup>, and N. J. Mason<sup>10</sup>, <sup>1</sup>Stockholm University, Roslagstullsbacken 21, S-10691 Stockholm, Sweden (wgeppert@fysik.su.se), <sup>2</sup>University of Tartu, Estonia, <sup>3</sup>University of Bordeaux, France, <sup>4</sup>Utrecht University, The Netherlands, <sup>5</sup>University of Turku, Finland, <sup>6</sup>Vilnius University, Lithuania, <sup>7</sup>University of Porto, Portugal, <sup>8</sup>University of Iceland, <sup>9</sup>Tallinn University of Technology, <sup>10</sup>Open University, UK.

**Introduction:** Astrobiology is one of the newest and fastest growing branches of science. Although it has existed as an acknowledged scientific field for only some decades, people have explored astrobiological questions such as the origin and evolution of life and the possibility of life on other celestial bodies since antiquity. Astrobiology is thus an attractive subject for academics and the general public alike. Training students in astrobiology faces several challenges but also offers unique chances. The multidisciplinary nature of the field brings about differences of terminologies and confronts lecturers with the task of teaching a audience with very diverse scientific backgrounds. The necessary training expertise usually is not available within a single institution or even within a single country. Also, the subject is generally not included in high school teaching.

This is unfortunate, because teaching astrobiology would promote a holistic, deeper understanding of the scientific view of the world. In addition, it would enable a new generation of scientists to interact with colleagues from different fields of sciences, and to work in cross-domain teams. Thus, cooperation between institutions and lecturers across the boundaries of countries, institutions and disciplines seems the obvious way forward for teaching astrobiology in the 21<sup>st</sup> century. Multilateral training courses also allow students to meet colleagues from other institutions and fields and thus identify future cooperation partners. It also makes it possible to assemble the best possible lecturers and students. International courses can be held at venues allowing practical field work, thus making it possible to combine theory with practice. Unfortunately, a European comprehensive astrobiology training programme was, for a long time lacking.

**Aims and activities of the European Astrobiology Campus:** The European Astrobiology Campus (EAC) aims to amend the above-mentioned shortcoming by providing a training entity for students and early career scientists offering cornucopia of different activities. Firstly, the EAC organized several summer schools per year at different European venues. Herein, it could build on the success of the Nordic Network of Astrobiology [1]. The scope ranged from basic introductory schools in astrobiology until advanced courses on interdisciplinary themes in the field. These events often have included real scientific field work, and after

three of them participants launched follow-up expeditions to carry on with the research on their own initiative by raising their own funding. This shows that innovative courses can lead to real research projects which, apart from their scientific merits, even train young researchers in management and leadership skills.

To ensure excellent training in an interdisciplinary subject it is equally important to train the trainers, i.e. the lecturers. To boost the capabilities of university teachers in astrobiology, allow exchange of experiences and inform them about new teaching and assessment possibilities, an international workshop on education in astrobiology will be held in July 2017. This event, which is co-organised with the International Astronomical Union, will not only cover novel hands-on advice, novel training and assessment forms for university lecturers, but also deal with teaching astrobiology for high-school pupils and engaging large audiences (both in academic environments and from the general public).

The EAC also organised outreach activities including exhibitions on astrobiological themes (e.g. an exhibition titled “The River of Time” (tracing the main events which lead to the emergence of life on Earth since the formation of the Solar System 4.5 Gy ago), and an upgrading of the “TimeTrek” path in Turku, which portray the whole history of the Universe, Earth and the Biosphere on a 13,72 km long timeline. A workshop training lecturers and students alike in astrobiology outreach will be organised in May 2017 in cooperation with a science museum.

Additional activities include summer camps for undergraduate students. Also, a meeting for students and a conference for young astrobiologists in cooperation with the organization Astrobiology Graduates in Europe (AbgradE) will be held. Furthermore, the EAC supports the compilation of the new issue of the Encyclopedia of Astrobiology [2].

Funding through an Erasmus+ Strategic Partnership made the launch of the EAC in 2014 possible. In my presentation I will report about the experiences and challenges encountered with the programme offered and present future strategies for European training in astrobiology.

**References:** [1] <http://www.nordicastrobiology.net>  
[2] Gargaud M. et al. (2011) *Encyclopedia of Astrobiology*, Springer, Heidelberg, Germany.