



Inter-commission WG C1-F2-F3-H2 Education and Training in Astrobiology

Report 2021-2024

Chair : Muriel Gargaud (France)

Co-Chairs : Beatriz Garcia (Argentina) and Christopher Impey (USA)

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This Working Group has been created in 2015, renewed in 2018 and 2021 in order to coordinate training, education and outreach activities in astrobiology at the international level.

During the period 2021-2024 we have:

- **Developed further the platform Astrobiovideo.com** : <https://astrobiovideo.com/en/>
 - implementing MOOCs
 - adding lectures in English, French and Spanish.
- **Created a new platform Astrobioeducation.com**: <https://astrobioeducation.org/fr/>
 - developing short astrobiology lectures (10') in French for the general public/young generation (16-20 years old)
- **Spread astrobiology to a large global audience.**

The MOOC developed by Chris Impey that is on the astrobiovideo platform is also available free on Coursera: <https://www.coursera.org/learn/astrobiology-exploring-other-worlds>. The course has enrolled 26,000 learners, 75% outside the United States and from 120 countries, with an average rating of 4.9 out of 5 stars.
- **Published the 3rd Edition of the Encyclopedia of Astrobiology** : <https://link.springer.com/referencework/10.1007/978-3-662-65093-6>, 3500 entries, more than 300 authors , accessible on line for free from many university libraries
- **Organized training schools:**
 - **3 international astrobiology Training Schools** « Rencontres Exobio pour Doctorants/Astrobiology Introductory Course » in **Bordeaux, France**: <https://red-astrobiology.fr/>
 - **several training schools in astrobiology** in cooperation with the European Astrobiology Institute
 - Life on Earth and Beyond (Ven Island (SE), June 2022)
 - Impacts and their Role in the Evolution of Life (Nördlingen, DE, September 2023)
 - Volcanism, Plate Tectonics, Hydrothermal Vents and Life (Angra do Heróismo, Azores, PT, October 2023)
- **Developed outreach for the general public and high school teachers**

We have started to build in Bordeaux, France, a large Time Trek path (13.8 km for the 13.8 Gyr of the history of life emergence and evolution) associated to a virtual Time Trek (website) which could be adapted/translated to all the IAU countries language.

A shorter Time Trek (1.38km) more dedicated to young pupils (8-12 years old) <https://chemindutemps.org/> has been inaugurated in Bordeaux, France in march 2024. (Web English version in progress)

- **Organised online seminar course:**

We have co-organised an online seminar course in Astrobiology under the umbrella of the European Astrobiology Campus together with the Centro de Astrobiologia in Spain. The courses run over a year and focus on 4 special themes in astrobiology

- **Continued to train the trainers**, specifically in countries where astrobiology is not developed a lot.

NASE, the Network for Astronomy School Education (now a WG of the Key-Initiatives in Education, Outreach and Development of the Astronomy, see https://www.iau.org/science/scientific_bodies/working_groups/334/) prepared along 2020 the new Workshop on *Astrobiology* (<https://www.naseprogram.org/wp-content/uploads/sites/10/2023/04/t10-55-astrobiology-eng-2023.pdf>) in two formats: face to face (as usual) and online synchronous course. The new workshop is a continuity of the previous activity *Planets and Exoplanets* (<https://www.naseprogram.org/wp-content/uploads/sites/10/2022/06/t9-54-planets-exoplanets-eng-2020-revisado.pdf>), also a proposal of NASE.

To improve the online activities a series of mute videos were prepared and they are available at the NASE YouTube channel (<https://www.youtube.com/@nase-virtual2926>).

In particular, during this period NASE concreted the advanced astrobiology workshop (Cosmological Time Line: [PPT](#) and [Full text](#) for teachers) and the dedicated conference (Conference/Lecture 5: [PPT](#) and [Full text](#)).

The courses online synchronous are very demanded, mainly by teachers from countries where it is difficult to travel. These activities were performed in 73 countries of 4 continents, the materials are translated to 26 languages, and the activity can be maintained thanks to around 1000 volunteers.

Renewal of the WG for the period 2024-2027

For the period 2024-2027 we would like to go on with all initiatives developed during the 2021-2024 period but we would also like to develop new ones as for example:

- Organise a triennial meeting on Education and Training in Astrobiology as the one we organized in Utrecht in 2017: <https://ise2a.uu.nl/>
- Organise the EAI Academy : <https://europeanastrobiology.eu/eai-events/eai-academy/> as a joint EAI - IAU event
- Offer a comprehensive training programme in astrobiology in cooperation with NASA, ESA, EAI, ELSI and other bodies.
This could include also to organise RED-style events : <https://red-astrobiology.fr/> on other continent, especially Africa, South America and Asia
- Organise yearly IAU Astrobiology summer camps for undergraduate students
- Continue the work on creation and translation on education material for schools as for example the Time Trek developed in Bordeaux, France.
- Invite Early career scientists to our seminar series: <https://europeanastrobiology.eu/streamed-seminars/>

For these reasons we apply for the renewal of the Inter-commission WG C1-F2-F3-H2 Education and Training in Astrobiology for the period 2024-2027.