

## **ESRI 4: “Translating scientific concepts & dilemmas into teaching material”**

Host: UAn / supervisor

PhD enrolment and planned dual degree with: UAn & UCPH

Promotors:

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*Dept. of Physics & Dept. of Social Sciences*  
*University of Antwerp, Belgium*

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*University of Copenhagen, Denmark*

### **Project Description**

STEM stands for Science Technology Engineering and Mathematics, and thus it encompasses several disciplines essential to 21<sup>st</sup> century life (skills) and future solutions. Astrophysics is a STEM discipline *par excellence*, making use of expertise from various fields (physics, maths, chemistry, biology, geography, high-tech, engineering, ...). Moreover, as a subject triggering the imagination - and even raising philosophical questions - it has the potential to raise interest in STEM disciplines. Therefore, the development of STEM projects linked to topics in Astrophysics is a useful endeavour, both for school education and for reaching a larger segment of society through public outreach.

More and more, the value of integrated STEM projects at school is put into practice and even investigated. Some stubborn misconceptions in science may be cleared up by the integrated STEM approach. The goal of this PhD project is to investigate the effectiveness of educational STEM interventions for the field of Astrophysics and Space Sciences.

In the framework of the CHAMELEON project and various ongoing projects, astro-STEM material will be developed and implemented for the classroom and for public outreach. In collaboration with the EduBron group at the University of Antwerp and under the co-supervision of Prof. Peter Van Petegem, we plan to investigate the effectiveness of such educational / outreach approaches. Secondments at the University of Copenhagen (Denmark) and the KU Leuven (Belgium, STEM coordination unit) are envisaged as well.

### **Innovative Training Network (ITN)**

This project is part of the Marie Skłodowska-Curie Innovative Training Network (ITN) CHAMELEON “Virtual Laboratories for Exoplanets and Planet Forming Disks” (<https://chameleon.wp.st-andrews.ac.uk/>). The ITN combines the expertise of eight European research institutes (Universities of St Andrews, Groningen, Copenhagen, Edinburgh, Leuven and Antwerp, the Max-Planck Institute in Heidelberg and the Netherlands Institute for Space Research) to cover all relevant aspects for this complex modelling task, joining the expertise in planetary atmospheres and protoplanetary disks, including observation and interpretation, as well as the transfer of knowledge into educational projects. All students will obtain double degrees. Training secondment for this position is foreseen at the Niels-Bohr Institute in Copenhagen. Marie Skłodowska-Curie fellows, you receive generous benefits, including a fixed salary with additional mobility and family allowances. The network will consist of 15 Early Stage Researchers (PhD students) and the respective supervisors/local research

groups. For a complete list of all open PhD positions within this training network, including those of our European partners, please see <http://chameleon.wp.st-andrews.ac.uk/recruitment/>.

## Requirements

We seek an excellent student with a strong background in physics or astrophysics but a keen interest in school education and social sciences, or with a strong background in educational sciences or science education and with a keen (preferably proven) interest in astrophysics and space sciences. This is a multidisciplinary project: STE(A)M lesson modules will be developed, and during their piloting phase, their effectivity will be evaluated. Therefore, the PhD student will have close collaboration with both the exact sciences and the social sciences.

Thorough knowledge or experience with statistical analysis programs is an advantage, as are good writing skills.

Note that the general eligibility and mobility rules of Marie Skłodowska-Curie Actions apply, i.e. applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the main host institution for more than 12 months in the 3 years immediately before the recruitment date. If you have been residing in Belgium, please consider to apply to the open positions of our European partner institutions (<https://chameleon.wp.st-andrews.ac.uk/recruitment/>).

## How to apply?

- Applications are to be **submitted online**, and should include a copy of your CV and a motivation letter, by the closing date **August 2, 2020** (or until position is filled).
- Two recommendation letters need to be sent by August 9, 2020 to [katrien.kolenberg@uantwerpen.be](mailto:katrien.kolenberg@uantwerpen.be).
- A pre-selection will be made from amongst the submitted applications.
- The remainder of the selection procedure is specific to the position and will be determined by the selection panel.
- More information about the application form can be obtained from [vacatures@uantwerpen.be](mailto:vacatures@uantwerpen.be)
- For questions about the profile and the description of duties, please contact Prof. Katrien Kolenberg - [katrien.kolenberg@uantwerpen.be](mailto:katrien.kolenberg@uantwerpen.be).