



## Uppsala University Summer Science Camp in Ecosystem Science

Erken Laboratory

### Invitation to Uppsala University Summer Science Camp in Ecosystem Science

#### *Summary*

Since 2002, the research school has been held at the field station. It has been a school for 12-16 science students in the age of 16-19. Students have been recruited from Sweden, Estonia, Lithuania, Latvia, Finland, Poland, Belarus, Russia and Ukraine.

This year, we plan to accept *4 international pupils* in the age of 16-18 in the summer of 2017. We arrange the course for 8 students from schools all over Sweden and 4 students from Estonia, Latvia, Lithuania and Finland. We will recruit up to 4 supervisors, from Uppsala University, SITES and our partners, to assist the students.

The Science camp consists of lectures, practical exercises and study visits, but foremost by a 100 hour long research project. You will learn how to work scientifically and cooperate by performing the project in pairs, supervised by researchers or PhDs from Uppsala University, SITES or a partner University. The project is presented as a written report, a poster and an oral presentation by the end of the three weeks, all of which can be presented at the pupils' home school.



#### *Schedule in short*

##### First week

**Lectures:** Introduction to the science camp and special lectures about science and research in more general terms. There will also be introductions to field methods and lectures from all supervisors. Finally we will also go through how to write and present scientific projects.

**Project:** During the first week the students start reading about the projects, which are conducted in pairs. The students will also make their own research plan for the following weeks, with assistance from the supervisors.

##### Social

**activities:** The first evening there will be a welcome dinner and teamwork activities. During the week, we will also make a visit to Uppsala University, External Liaison Unit, Baltic University and the international office. We will also make a study visit to Stockholm and offer a possibility to visit the partners at Stockholm University.



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### Second week

**Lectures:** Each partner institution and other researchers connected to Uppsala University will present their work during these weeks, so that you will get a good idea of what it is like to be a scientist. The lectures are performed on site, or by Adobe Connect, which will enable us to get the best lecturers for the students and show the supervisors one method for increasing the standard of the presentations without transporting all lecturers to the site of the camp.

**Project:** During this week most of the work on the projects is conducted. By using the best field methods, introduced by the supervisors during the first week, the students will know how to manage their field sampling, collect data, work with the data and do the major part of writing.

### Social

**activities:** In Sweden we celebrate midsummer, the brightest time of the year. We will try to show the students a traditional way of celebrating this time of year. We will also do another field trip during this week and the destination is still to be decided.

### Third week

**Project:** Finishing touches on the report, poster and preparation/performance of oral presentation.

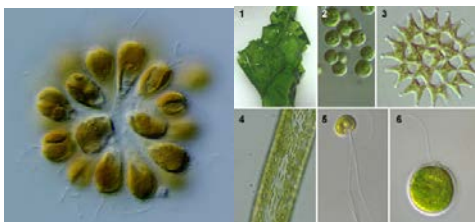
## Projects

Prior to the Uppsala University Summer Science Camp in Ecosystem Science 2017, we will supply a *list* of different projects which the students can choose from, but at the same time we also encourage the students to form their *own projects* (please contact us in advance!).

Example of a project from previous years:

### **The diversity of phytoplankton -**

### **How many species are there in the water?**



This study is pertaining to the morphological classification of freshwater phytoplankton, which could be used to assess the water quality.

Phytoplankton constitutes the main group of primary producer in the aquatic environment. Due to the reason that phytoplankton community could keep track of the environmental changes, for example, light, temperature, nutrient availability and grazing pressure from zooplankton. They are classified into groups by the type of pigments which are used to perform photosynthesis. The diversity of phytoplankton in the lake could be used as the indicator for the water quality for the reason that certain species have its optimal conditions to grow and live.

Firstly, we will go out to get phytoplankton samples from the lake water. Then in the laboratory, the method using in this project is Utermöhl technique, the basic procedure for counting algae is to fill a counting chamber with preserved sample, which is fixed using lugol's, after a period of settling, identify and count the cells under the inverted light microscope simultaneously.



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### *Terms of the Uppsala University Summer Science Camp in Ecosystem Science 2017*

The application procedure is now open for school students *from Finland, Estonia, Latvia and Lithuania*. The students should be between *16 and 18 years old*, and have a background in science. **All applicants MUST be able to speak, read and write English, as all teaching will be conducted in English!**

The Research School will be given from **2017-06-12 to 2017-06-30**. The students will stay in shared rooms close at the Erken Laboratory. Bathrooms with showers are shared in the house (separate for girls/boys).

Applications are individual and *should* include:

- Name, birth date, gender, mail-address, telephone number and educational level
- A short (1/2-1 page) *personal letter* including details about education, future plans, hobbies etc.
- A *letter of recommendation* from a school teacher, including confirmation of capability in English.

Please mark your application(s) “*Uppsala University Summer Science Camp in Ecosystem Science 2016*” and send it before 2017-03-15 in **electronic form** to the following **e-mail address**.

**Address:** [karin.beronius@ebc.uu.se](mailto:karin.beronius@ebc.uu.se) and [maja.pelve@ebc.uu.se](mailto:maja.pelve@ebc.uu.se)

**Participation in all activities, food and lodging at Erken Laboratory will be free of charge. The following need to be financed by the student (or applied for from another source)**

- Travelling to and home from the course

Note: the closest airport is Arlanda (80km) and you can also reach Stockholm by ferry. If you are accepted to the course, you will receive more information on how, where and when to book your tickets. We will arrange that you are picked up on arrival and take you to the Erken Laboratory.

- insurance

We wish you all very welcome to apply to the Erken Laboratory Research School 2017. If you have any questions, please don't hesitate to contact Karin Beronius or Maja Pelve.

### **Staff at the Research School**

Course leader: Maja Pelve

Project supervisors  
(not complete list): Don Pierson, researcher, William Colom, research engineer