



## Uppsala University Summer Science Camp in Ecosystem Science

Erken Laboratory

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

#### *Summary*

For ten years, our research school has been held at the Erken Lab field station. Each year, we admit 12-20 students in the age of 16-19. Some of the students have been recruited from Sweden and some from Estonia, Lithuania, Latvia, Finland, Poland, Belarus, Russia and Ukraine.

The summer of 2018 we will arrange the course for 12 students from schools all over Sweden.

The Science Camp consists of lectures, practical exercises and study visits, but the most important thing is the 100 hour long research project. You will learn how to work scientifically and cooperate by performing the projects 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 research school – all of which can be presented at your home school or admitted to a science fair competition!



#### *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. Later during the week we will also make a study visit to Uppsala.

##### 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.

**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, you will learn how to manage your field sampling, collect data, work with the data and do the major part of writing.



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**Social activities:** There will be evening activities as well as a field trip.

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

### Projects

Before the research school starts we will supply a list of different projects which the students can choose from. We also encourage the students to come up with 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 solution, 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 2018*

The application procedure is now open for school students *from Sweden*. The students should be between *16 and 18 years old*, and have a background and interest 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 **2018-06-18 to 2018-07-07**. The students will stay in shared rooms close to the Erken Laboratory. Bathrooms with showers are shared in the house (gender separated).

Applications are individual and *have* to 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 2018*" and send it before 2018-04-15 in **electronic form** to the following **e-mail addresses**:

[pia.larsson@ebc.uu.se](mailto:pia.larsson@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 the nearest train station is in Uppsala or Stockholm. 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 2018. If you have any questions, please don't hesitate to contact Pia or Maja.

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

Course leader: Pia Larsson, MSc in education

Course assistant: Maja Pelve, Agr. Lic.

Matron: Margarita Judina