

# NordBioMedNet Summer School 2019 in Computational Biomedicine - Imaging, machine learning and precision medicine



Seili Island, The Archipelago Research Institute, University of Turku  
11<sup>th</sup> – 16<sup>th</sup> August 2019



UNIVERSITETET I BERGEN



# Summer School Programme

## Sunday, August 11

Arrival to Turku by plane, bus or train. NB! If you are planning to fly to Helsinki, reserve at least 3 hours to get to Turku by bus from the airport.

- At 17.45 Get together in Turku riverside (Östra Strandgatan 66), and boat transportation to Seili island (please contact Maritta Löytömäki, [makrpy@utu.fi](mailto:makrpy@utu.fi) about your travel plans)
- Dinner at Seili
- Welcome and presentation of the Summer School activities and projects (Lars-Arne Haldosen, KI Stockholm and Junior Mentors – Peder Lillebostad and Sathiesh Kaliyugarasan (UiB), Elnfaz Fazeli, Olli Moisio, Mawwell Miner and Tatsiana Auchynnikava (UTU))
- Check in and free time

## Monday, August 12

07:45-08:30 Breakfast

08:30-09:15 Why are computational skills needed in biomedicine - relevance to uncovering disease mechanisms and for diagnostics (Arvid Lundervold, UiB, Bergen)

09:15-10:40 Bioimage informatics and machine learning (Pekka Ruusuvoori, Tampere University)

10:45-12:10 Prostate cancer - clinical aspects (Pekka Taimen, UTU, Turku)

12:15-13:15 Lunch

13:15-14:40 Review of pre-assignments - Jupyter notebooks on tools and data repositories (Arvid Lundervold, Peder Lillebostad and Sathiesh Kaliyugarasan, UiB, Bergen)

14:45-18:00 Student work with group project (coffee break 16:30-17:00)

19:00 - Evening snack and Sauna

## Tuesday, August 13

07:45-08:30 Breakfast

08:30-11:00 Workshop - image data analysis, e.g. using unsupervised classification (see [here](#) and [here](#)) to analyse prostate cancer (see [here](#)) (Arvid Lundervold, Peder Lillebostad and Sathiesh Kaliyugarasan, UiB, Bergen)

11:00-12:00 Presentation Seili Archipelago research institute, Ilari Sääksjärvi, Biodiversity unit, UTU, Turku and head of research station

- 12:00-13:00 Lunch
- 13:00-14:25 Prostate cancer – molecular mechanisms (Leena Latonen, UEF Kuopio)
- 14:30-15:25 Ethics and genetic screening (with a focus on cancer) (Niklas Juth, KI Stockholm)
- 15:30-17:30 Workshop - Ethics and genetic screening (16:00-16:30 Coffee break)
- 17:30-20:00 Student work with own project
- 20:00-20:30 Evening snack

### **Wednesday, August 14**

- 07:45-08:30 Breakfast
- 08:30-12:00 Follow up discussions on ethics workshop (Niklas Juth, KI Stockholm; Pasi Kankaanpää, UTU, Turku)
- 12:00-13:00 Lunch
- 13:00-14:00 Workshop – image data analysis cont. (Arvid Lundervold, Peder Lillebostad and Sathiesh Kaliyugarasan, UiB, Bergen)
- 14:00-18:00 Student work with group project (Break 16:30-17:00 with snacks) Network meeting
- 19:00 - Evening snack and sauna

### **Thursday, August 15**

- 07:45-08:30 Breakfast
- 08:30-10:25 Deep learning models to recognize tissue types (Bjarne Thorsted, SDU, Odense)
- 10:30-12:00 EuroBioimaging (Pasi Kankaanpää, UTU Turku)
- 12:00-13:00 Lunch
- 13:00-14:25 Career opportunities outside academia - companies in bioimage informatics – Sami Blom, Aiforia, Helsinki
- 14:30-15:30 Career opportunities outside academia - companies in bioimage informatics – Juha Rantala, Misvik, Turku
- 15:30-18:00 Student work with group project (Coffee break 16:30-17:00)
- 19:00- Summer school dinner

## Friday, August 16

- 07:45-08:30 Breakfast
  - 08:30-10:30 Student presentations with feedback
  - 10:30-10:45 Coffee break
  - 10:45-12:00 Student presentations with feedback
  - 12:00-12:30 Check out and transport to boat
- Around 13.00 Departure to Turku and light lunch on board
- Around 15:00 Arrival to Turku city centre and Goodbye!



## Summer school information

### Accommodation

Accommodation for students will be organised in 2-4 person rooms in institute buildings. All the rooms do not have own toilets and showers, but in most cases they are in the same building. Some buildings also have small kitchens. Bath towels and bedlinen are provided.



*Student dormitories*

### Meals

Meal times are fixed according to the kitchen workhours. Party dinner and evening snacks by the sauna will be organised separately, outside the regular kitchen hours. Also on the arrival evening, the dinner will be organised in Seili after kitchen hours.



## Participant comments

"The best thing was to get wide professional training, giving not only great insights of the topic but also presentation skills, international group work experience, business aspects and examples of careers."

"To learn about the different areas of expertise from the different universities, it was very satisfying to talk with fellow students about topics that I didn't know much about before the summer school."

"Networking with Scandinavian people on this field, to both share experiences with peers and to learn lots of new things from foreign lecturers."

## General information about Seili

The Archipelago Research Institute is located on Seili Island (Själö in Swedish), 20 minutes ferry trip from the village of Nauvo. Direct boat trip from Turku is possible and takes a bit over one hour.

### Transportation

Summer School students will arrive to the island primarily in group transport.

The transportation to the island will be organised for the whole group by the host, University of Turku. If you must arrive or leave Seili individually, it is possible to travel from Turku by bus. Bus stops at Nauvo village centre before it continues to Korppoo. There is a connective ferry from Nauvo to Seili.

The transport for teachers and lecturers will be organised individually on demand. Boat transport of a single student may also be arranged, but only in very exceptional cases. There will be persons coming and leaving almost on a daily basis, and it may be possible to join these boatrides. If you need individual transport, please inform the course leader well in advance.



*M/S Aurelia, the Seili research vessel*

[Bus time-tables Turku – Nauvo – Korppoo: http://tlo.fi/reitit-ja-aikataulut/saaristobussi/](http://tlo.fi/reitit-ja-aikataulut/saaristobussi/) (Links to an external site.)Links to an external site.

[Ferry time-tables: http://www.ostern.fi/aikataulu](http://www.ostern.fi/aikataulu) (Links to an external site.)Links to an external site.

## Brief history of Seili

On 18<sup>th</sup> century Seili served as a hospital island for patients suffering from chronic illnesses, mainly leprosy. Later it was used as a mental hospital for women. The main institute building was originally built for mental patients on 19<sup>th</sup> century. It is surrounded by hospital service buildings, and now been fully renovated to serve as seminar rooms, offices, kitchen, dining room and bed rooms.

Summer School programme will include a visit to Seili church and a lecture about the history of Seili.

## Weather

The weather in Turku archipelago in early August is usually rather warm and sunny, around +20 degrees during the day time. The sea is still warm, making the archipelago evenings and nights also pleasantly warm. However, the autumn may start to show its first signs with light rains, wind and temperature around +15 dgr.



## Ticks

*Ixodes ricinus* ticks are common on Seili. They are arachnids, which draw blood from birds and mammals, and can also attach to humans. Some of the ticks carry pathogens, which can cause borreliosis or TBE (tick-borne encephalitis). Those infections are rare, but a small risk exists. Therefore it is advisable to avoid areas with high grass or other thick vegetation where ticks can hide, and keep to the roads and lawns. If a tick attaches, it should be removed as soon as possible, because the risk of borreliosis infection increases when the attachment time increases. A daily check for ticks is effective in preventing them from attaching for long times. You should especially check areas of the body with thin skin.

If you find an attached tick, it is important to remove it fully, so that the its mouth parts do not remain in the skin. Tweezers for removing ticks can be obtained at the Seili office, as well as in every medicinal cabinet at the Institute. If you have difficulty detaching the tick, contact the staff for help.



Insect repellents may help somewhat against ticks, and are effective for mosquitoes and other biting insects.

## Sauna

Sauna is an excellent place to check attached ticks and give them a proper denaturation treatment in pleasant heat while bathing. Seili has two big saunas, and opportunities to go to sauna will be organised during the Summer School. Just bring your swimsuits with you!



## Information about Turku

If you are interested and have time visiting also Turku, information about the city can be found here: <http://www.visitturku.fi/en> (Links to an external site.)Links to an external site.

It is warmly recommended that all the participants will also read more Seili information on the web:

<https://www.visitseili.fi/en/accommodation/> (Links to an external site.)Links to an external site.

<http://www.utu.fi/en/units/cerut/archipelago-research-institute/Pages/home.aspx> (Links to an external site.)Links to an external site.