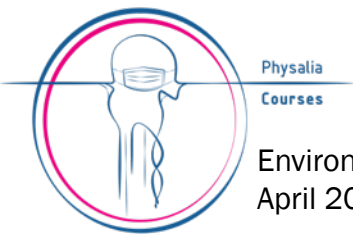


Environmental metagenomics

Course outline and practical info



Physalia
Courses

Environmental metagenomics
April 2021

Igor S. Pessi & Antti Karkman, University of Helsinki

About us

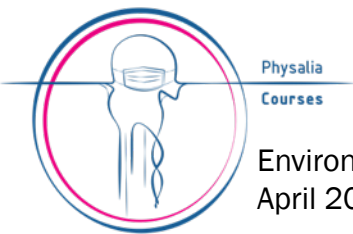
Organizer:

- Carlo Pecoraro, Physalia Courses
 - info@physalia-courses.org



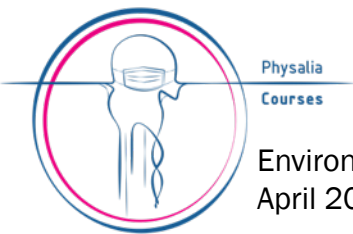
Instructors:

- Antti Karkman, University of Helsinki
 - antti.karkman@helsinki.fi
- Igor Pessi, University of Helsinki
 - igor.pessi@helsinki.fi



About you

- Name
- University/Institute/Company
- Research interest(s)
- Previous experience(s) with microbial ecology, metagenomics, bioinformatics, etc.
- General hopes for this course



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Course outline

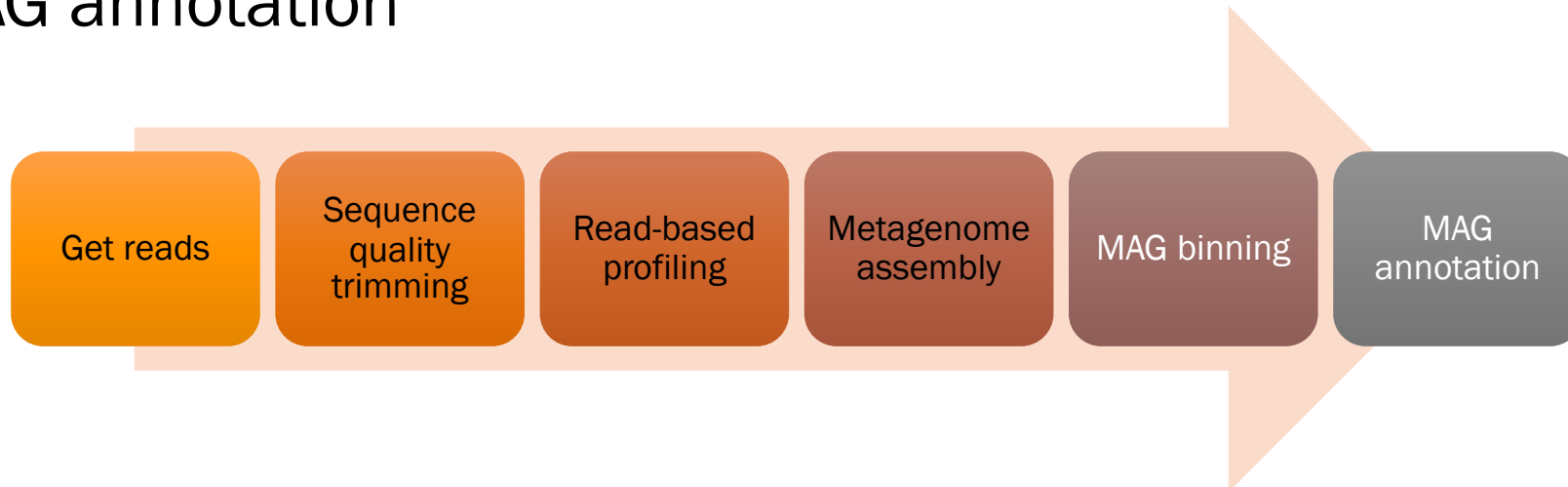
Day 1: Working with the command line and QC

Day 2: Read-based analyses

Day 3: Metagenome assembly

Day 4: MAG binning

Day 5: MAG annotation



Practical information: Zoom & GitHub

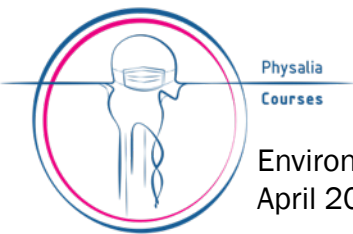
The course will take place in Zoom from 9 AM to 4 PM (CET)

- Link to the Zoom room in Slack ([#general](#))

The course page containing exercises and presentations is:

- https://github.com/karkman/physalia_metagenomics

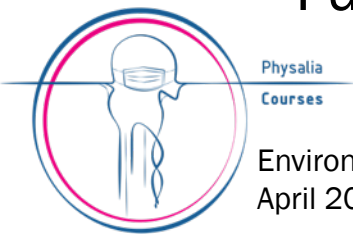
Please bookmark this address!



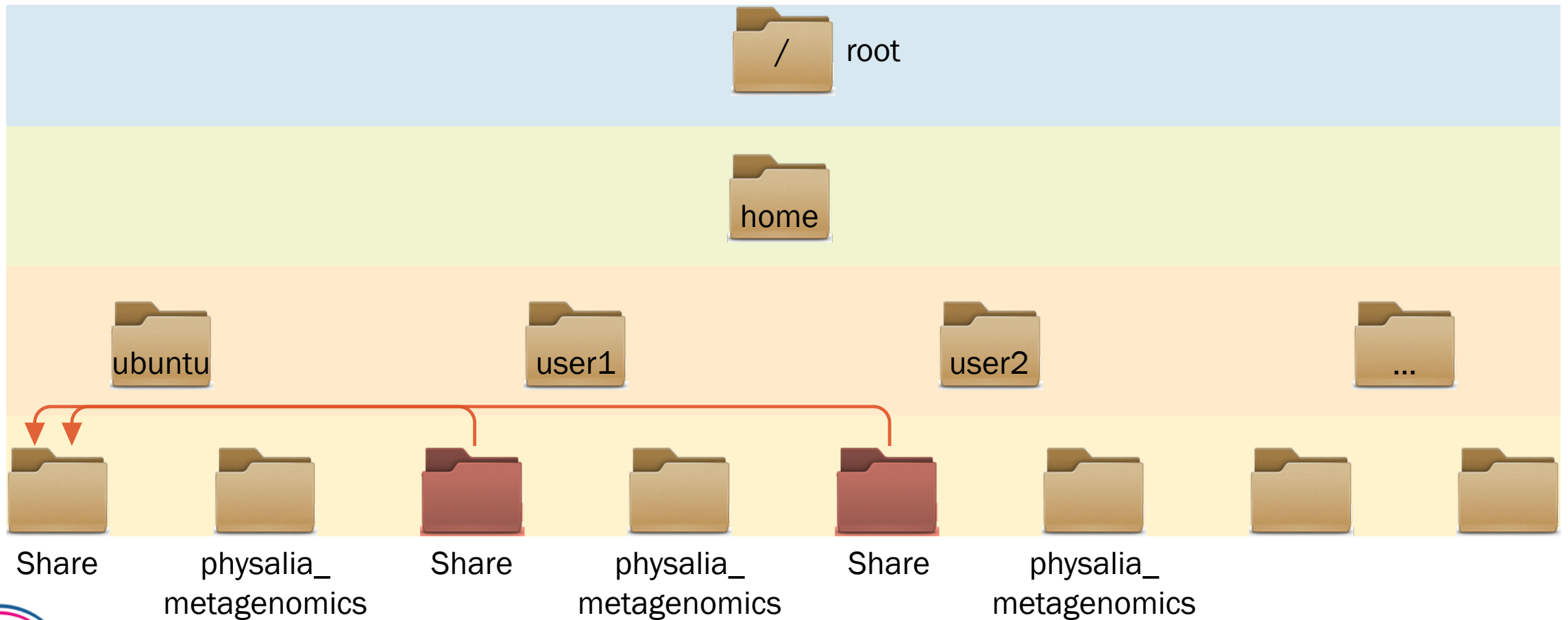
Practical information: Amazon Cloud (AWS EC2)



- See Slack ([#before-start](#)) for information on how to connect
 - Remember, the IP address will change every day
- Everyone has a user, a home and a shared folder
 - E.g. Lucie Malard is [user2](#)
 - Their home folder is [/home/user2](#)
 - Their shared folder is [/home/user2/Share](#)
 - List of usernames can be found in Slack ([#before-start](#)).
- We will mostly use conda for managing the software environments
 - The environments are already set up for everyone
 - Further instructions on the GitHub page



Practical information: folders and files

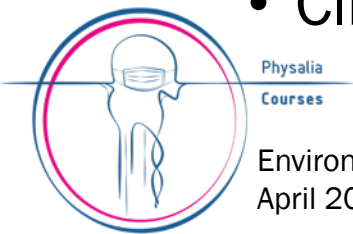


Practical information: FileZilla



Set-up instructions:

- Open FileZilla
- Click File > Site Manager
- Click New site
- Change Protocol to SFTP– SSH File Transfer Protocol
- In Host, type the IP address (has to be changed every day)
- In Port, type 22
- Change Logon type to Key file
- In User, type your username
- In Key file, select your pem file
- Click connect



Kilpisjärvi, Finnish Arctic (69° N)



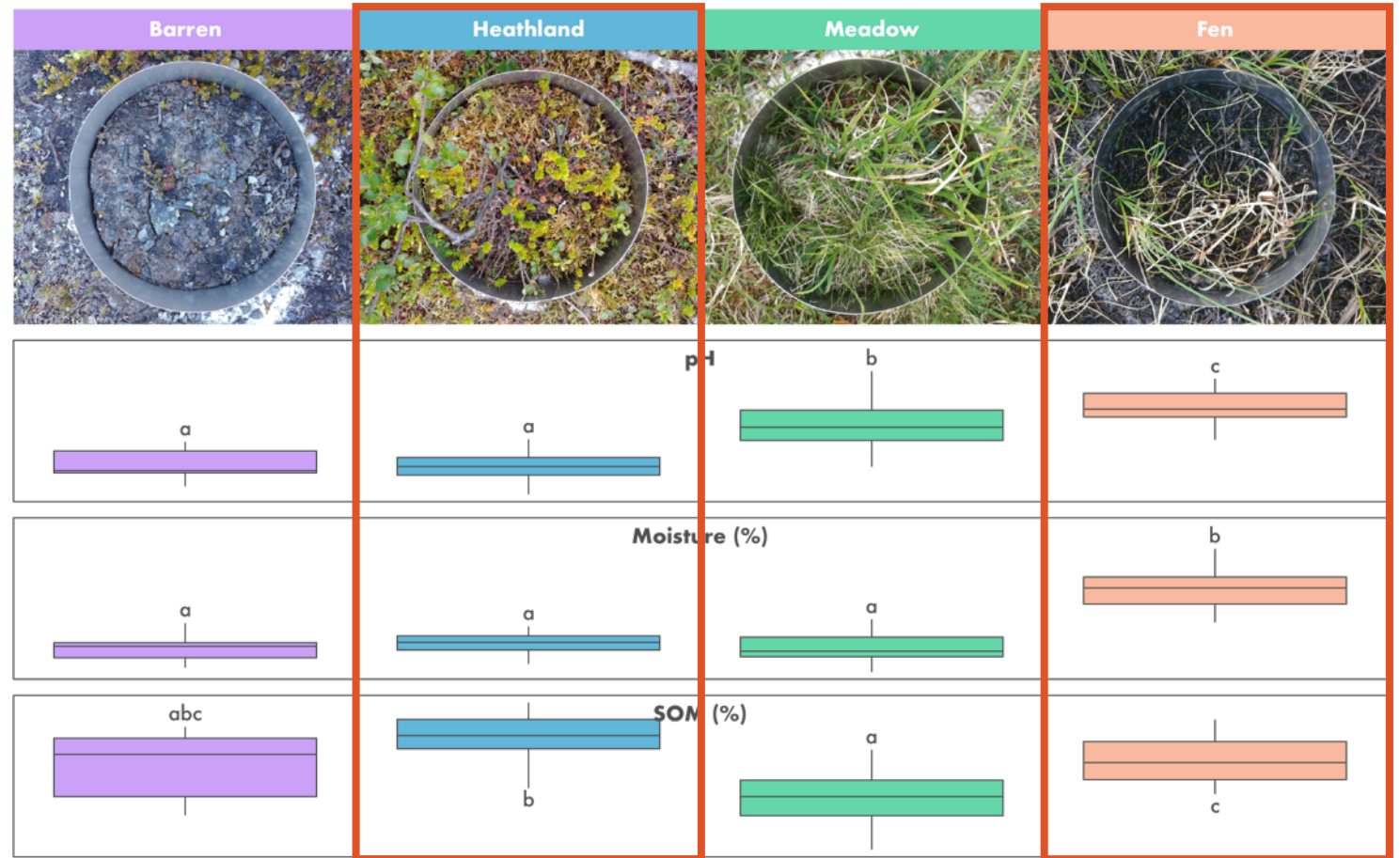
Kilpisjärvi, Finnish Arctic (69° N)

4 samples

- 2 heathland soils
- 2 fen (wetland) soils

Illumina NovaSeq +
Nanopore MinION
(2 samples)

Real (not toy) data!



Pessi et al., 2020: <https://www.biorxiv.org/content/10.1101/2020.12.21.419267v1>