

Workshop on Genomics

Český Krumlov
2016

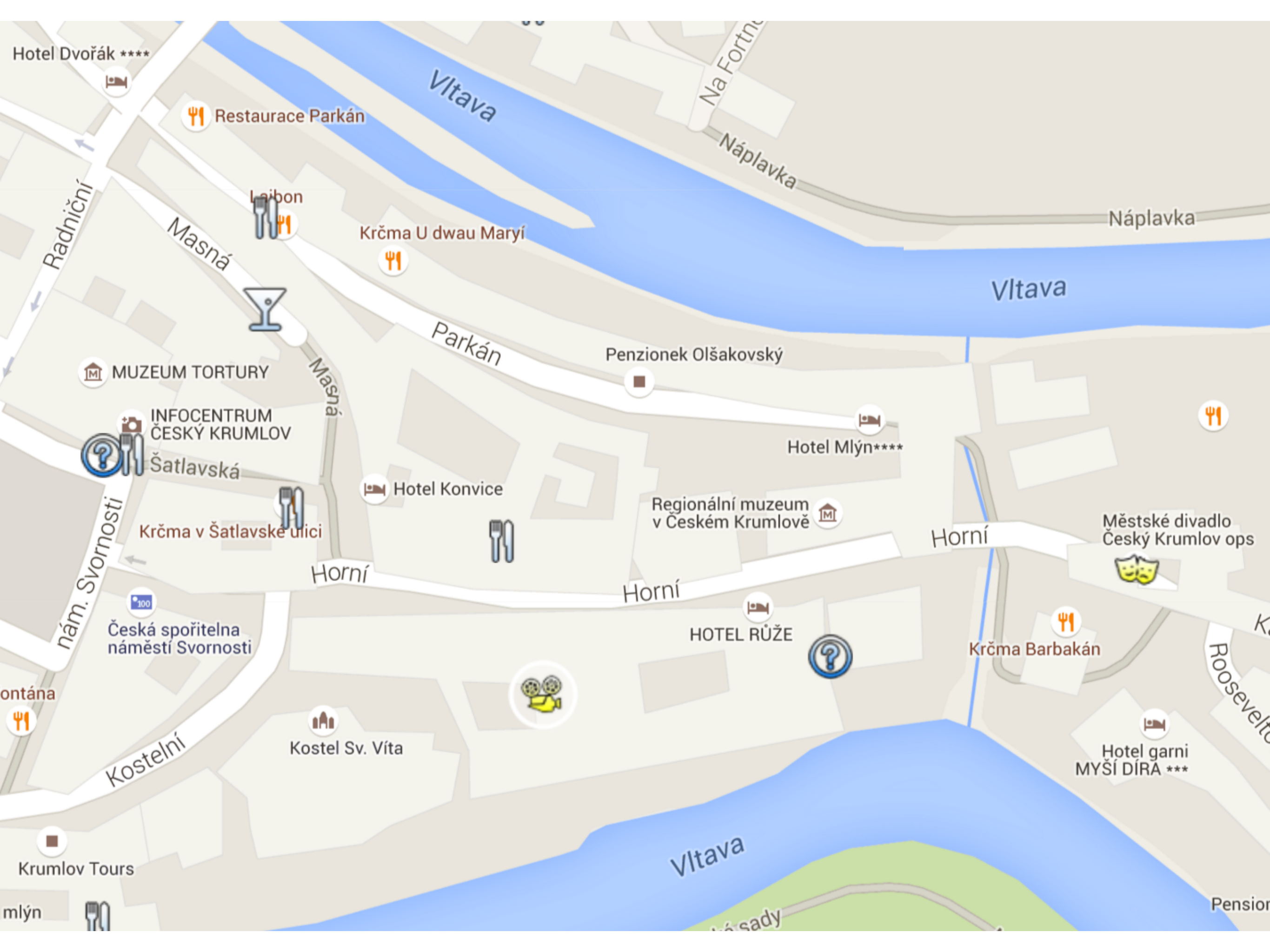


objectives of this presentation

- information about the setting and logistics
- background about the Workshop
- establish an appropriate set of expectations

frequently asked questions

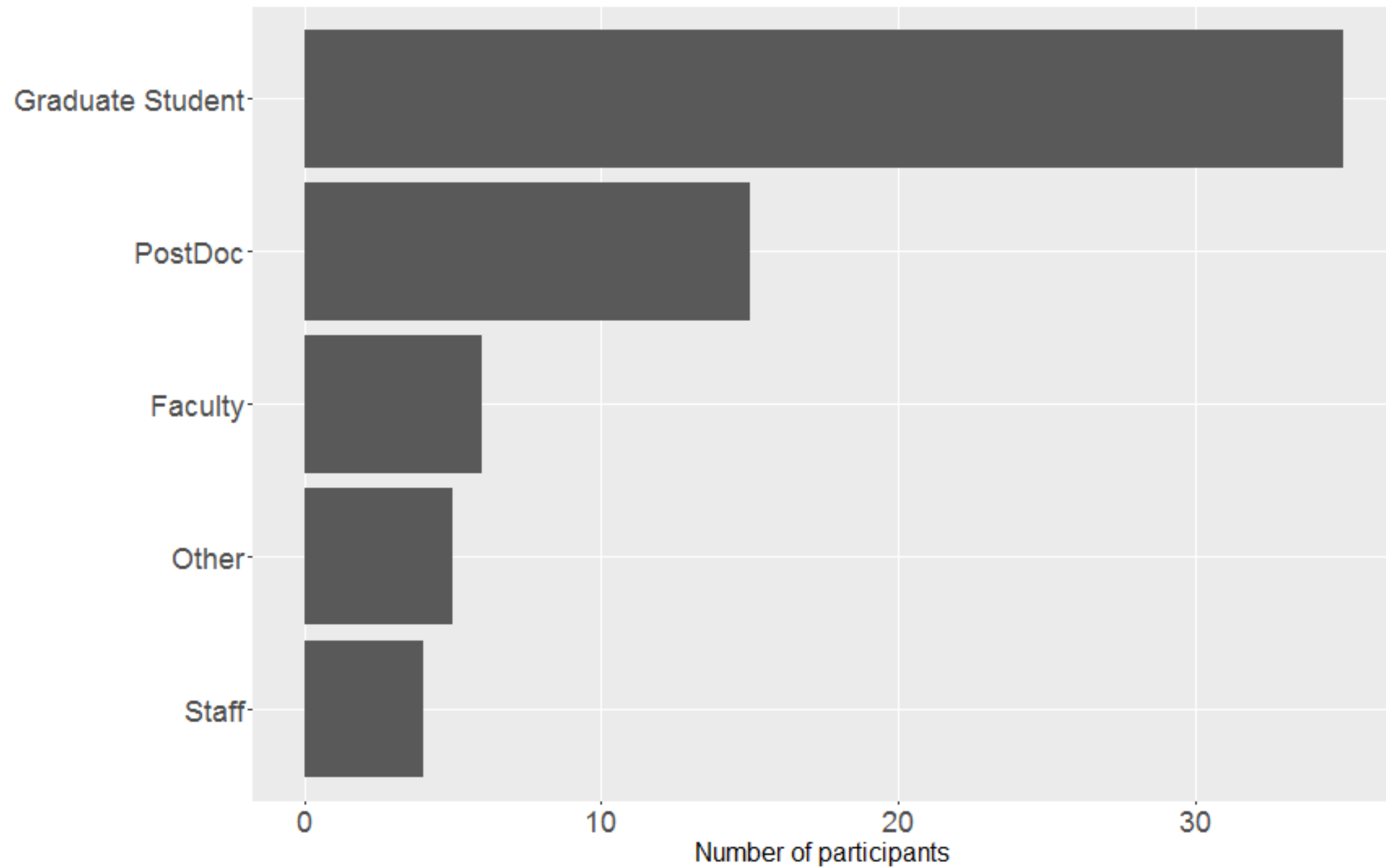
- Where is the restroom?
- Coffee breaks?
 - at 10:00, free coffee & tea (theatre), available at all times (computer lab)
- Free wifi?
 - Theatre Café, House of Prelate (computer lab)
- Where & when do I eat?
 - Workshop Google Map
 - times: 12-14, 17-19
- Where is the pub?
- Where is the computer laboratory?



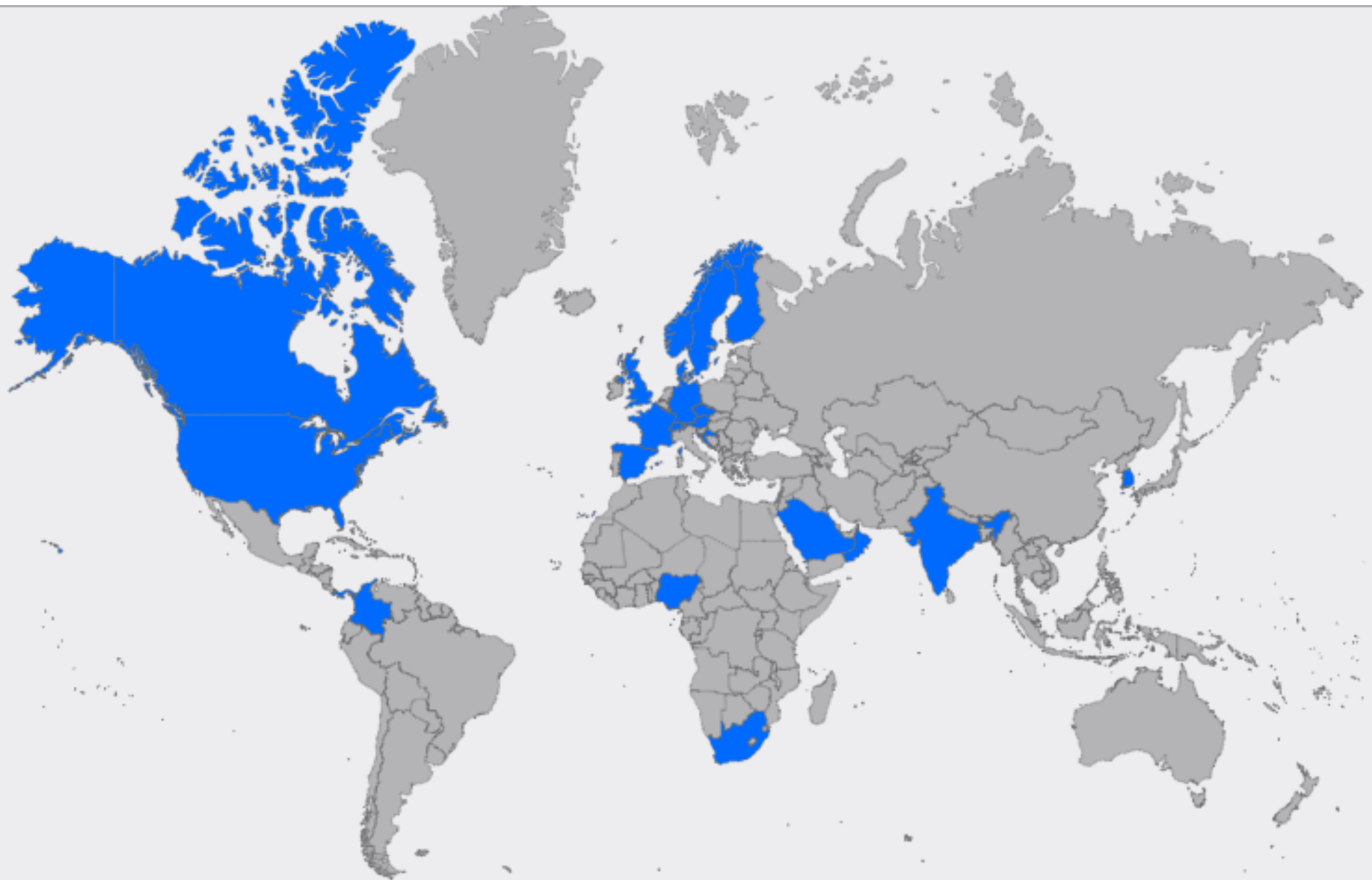
who

AGCTTACCCGTAAT
TGGGCTACCTGAC
CTACCGATTAGGCC
AAATAACCCCGG
CIGATCCGTTTACT
ATCGGTCATTAC
CIACGATAAGGCC
AAATAACCCCGG
CIGATCCGTTTACT
CGGACTGATACCC

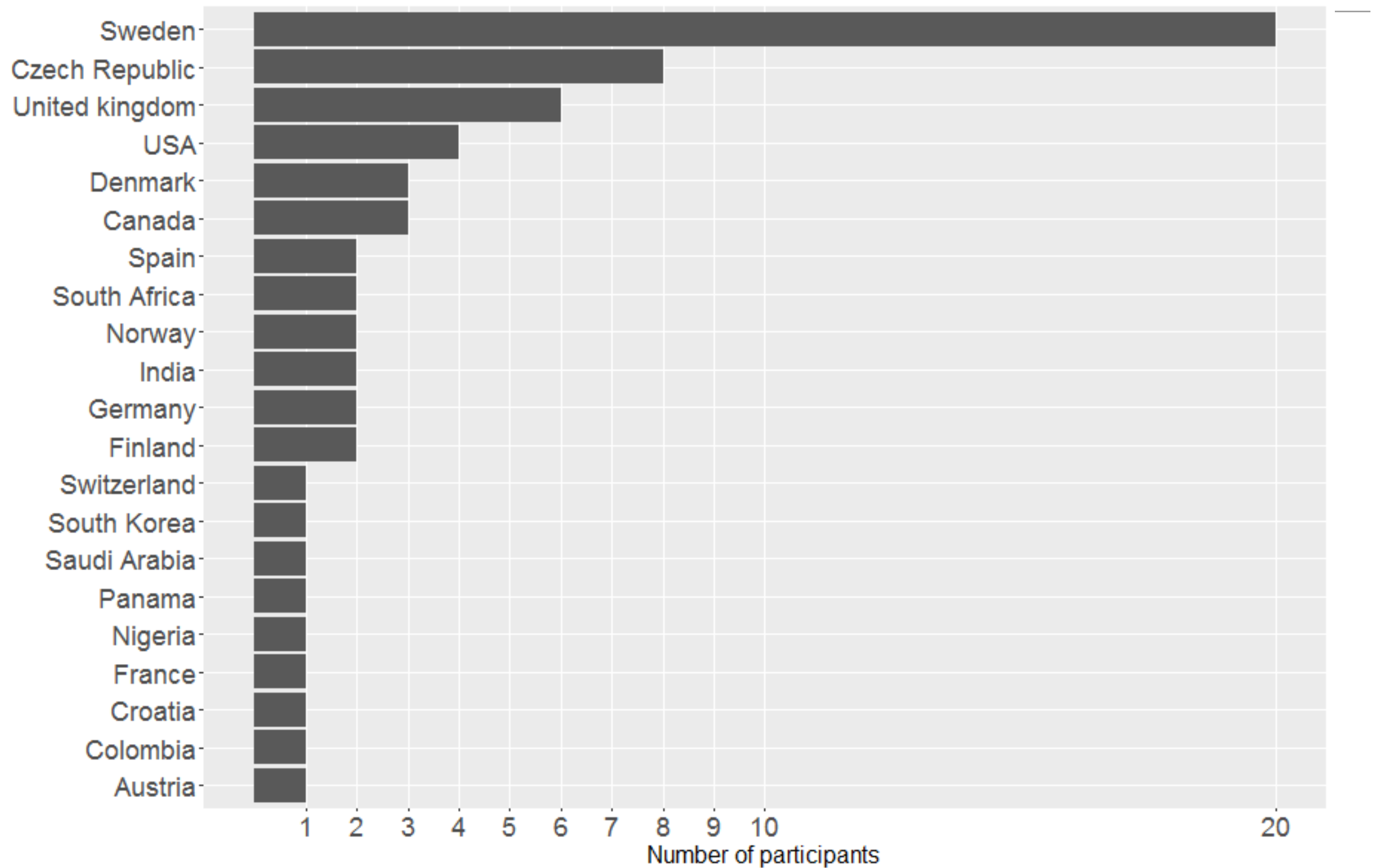
you



you



you



research interests

transcriptomics

comparative genomics

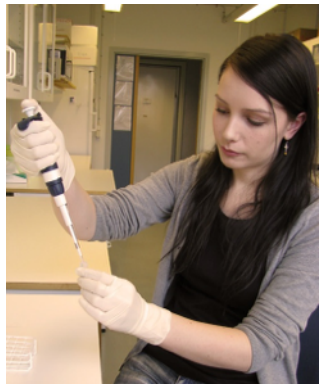
population genomics

metagenomics

phylogenomics

evolutionary genomics

us: instructors and co-directors



Elin Videvall



Guy Leonard



Lokeshwaran Manoharan



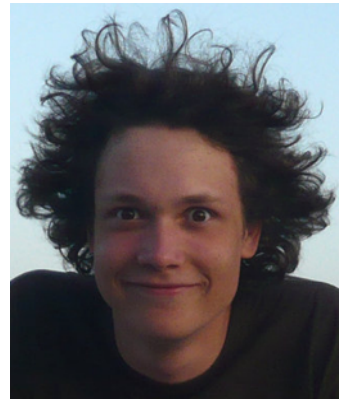
Josie Paris



Daniel McDonald



Sophie Shaw



Jan Provaznik



Scott Handley

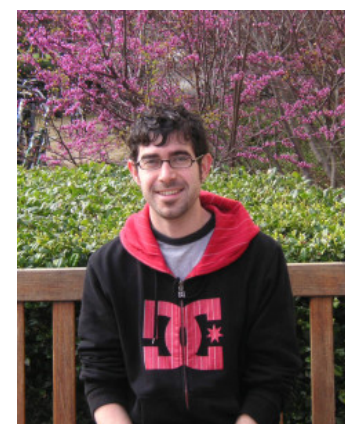


Konrad Paszkiewicz



Dag Ahrén

faculty

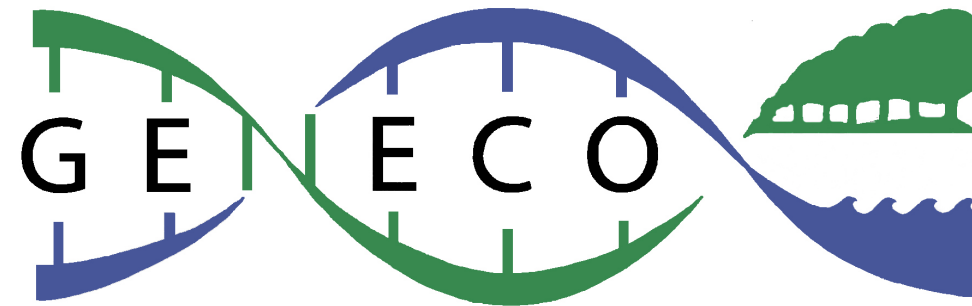


partners & sponsors



Graduate Research School in Genomic Ecology
LUND UNIVERSITY, SWEDEN





- Interdisciplinary graduate school for PhD students in Genomic Ecology
- Genomic Ecology - interface between ecology & evolution, molecular biology and genomics
- GENECHO was funded by the Swedish Research Council, from 2013 by the Faculty of Science, Lund University



GENECO Program

PhD students & content

- 127 past and current PhD students
- Universities in Sweden, Norway, and Finland
- Activities: Annual Winter & Summer Meetings, PhD courses, Mentor programs, travel grants

Courses

- **Understanding population genetics**
- **Conservation & landscape genetics**
- Introduction to molecular ecology
- Quantitative PCR
- R in Biology
- Sequencing to assess microbial diversity: high throughput sequencing and amplicon sequencing
- RAD sequencing & analyses
- Phylogenies using NGS data

see www.biology.lu.se/geneco

Sponsor of Workshop on Genomics



National Bioinformatics Infrastructure Sweden

Swedish national research infrastructure
supported by the Swedish Research Council

Short term support: 40 hours (700+ projects)

Long term support: 500 hours (30+ projects)

Bioinformatics compute and storage (UPPNEX) specifically for NGS data

NBIS provides infrastructure and tools for
bioinformatics analyses

Bioinformatics network at all Swedish Universities

Bioinformatics courses and workshops

what this workshop is

background

Workshop on Molecular Evolution

- focused on molecular phylogenetics and population genetics
- Woods Hole, Marine Biological Laboratory, USA

- Workshop on Comparative Genomics
 - ▶ Czech Republic - January 2011
 - ▶ Fort Collins, USA - July 2011
 - ▶ Smithsonian Institution - November 2011

workshop philosophy

- immersive and intensive
- workshop not a symposium
- friendly
- isolated & idyllic

why Český Krumlov



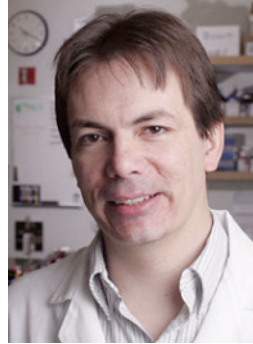
important considerations

- relatively inexpensive
- relatively isolated
- idyllic
- conveniently and centrally located in Europe
- appropriate infrastructure
- outstanding support from the town

schedule

- Workshop website
 - <http://evomics.org>

Week 1



Monday

Workshop & Cesky Krumlov *Structural variation*
Speed networking @Depo



Tuesday

Sequencing Technology *Intro Cloud Computing*
Unix lab



Wednesday

Study Design *Advanced unix*
QC, R



Thursday

Alignment methods *Genomics lab*



Friday

Epigenetics *Assembly lab*
Assembly



Saturday

Phytoplankton *Assembly lab cont.*
Town tour/Brewery

Week 2



Monday

Metagenomics

Phyloseq lab

Qiime lab



Tuesday

RAD sequencing

STACKS lab



Wednesday

Transcriptomics

Transcriptomics lab



Thursday

Evolutionary genomics

Ortholog detection



Friday

Evolutionary genomics

Open Lab

Dinner Party

participant discussions: scientific speed networking

- goals:
 - get to know each other
 - learn about the other participants research interests and projects
 - learn which approaches and methods other participants work with



Pension Lobo

átní hrad a zámek
Český Krumlov

Unios Tourist Service

Zámek

Latrán

Nové město

Latrán

Hotel Dvořák ****

á
m vltavínů

Vltava

Náplavka

Masná

MUZEUM TORTURY

Parkán

Krčma v Šatlavské ulici

Regionální muzeum
v Českém Krumlově

Horní

HOTEL RŮŽE

Kaplická

Kaplická

Roosevelt

Kostel Sv. Víta

Google

Social Events

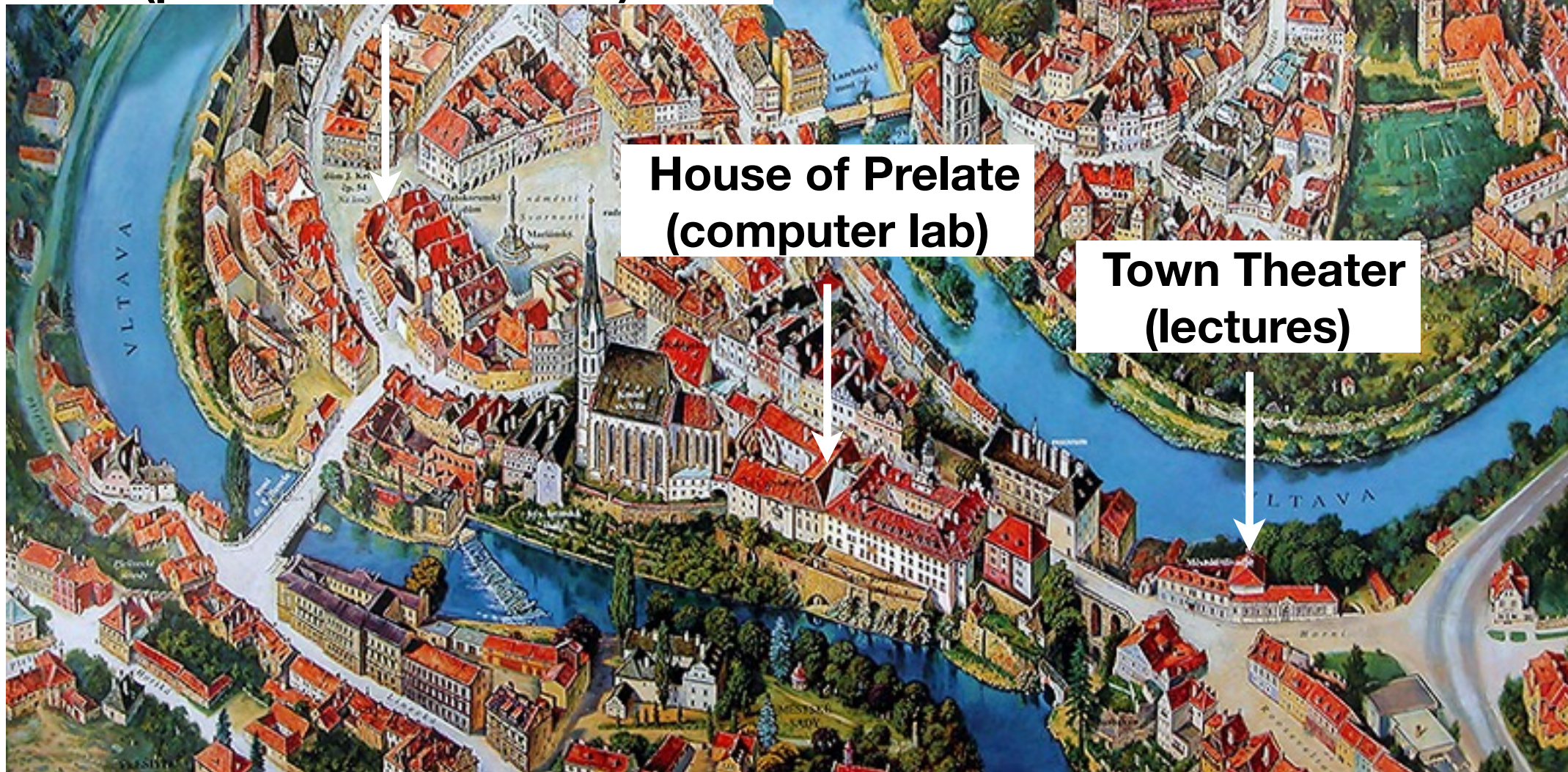
- Saturday
 - Meet at approximately 17:30 (Town Square) to take a group tour of Český Krumlov
 - Tour will finish at Eggenberg Brewery beer tasting & dinner
- Sunday
 - Information from Daniel Kintzl, CK Infocentrum
- Friday (22nd) - you plan end-of-workshop dinner & party

where

here



**cafe and bar at Hotel Zlatý Anděl
(post-lab discussions)**



**House of Prelate
(computer lab)**

**Town Theater
(lectures)**

expectations

realistic expectations

- exhaustion
- frustration
 - bioinformatics applications are tricky
 - >60 people on-line simultaneously
 - you will not finish every exercise during the allotted session
- you will not become an expert in 2 weeks...

SO...

- take breaks
- get enough sleep
- be patient
- ask questions! (faculty, instructors, participants)
- **work in pairs/groups**
- continuation/open labs
- everything will be available on the web-site after you leave
-enjoy!

Feedback

- Daily questionnaire:

<https://goo.gl/aN96sw>

discussion opportunities

- extensive opportunities for discussions
 - with faculty
 - with instructors
 - with other participants
- faculty arrival and departure dates are on the web site



computer lab



House of Prelate

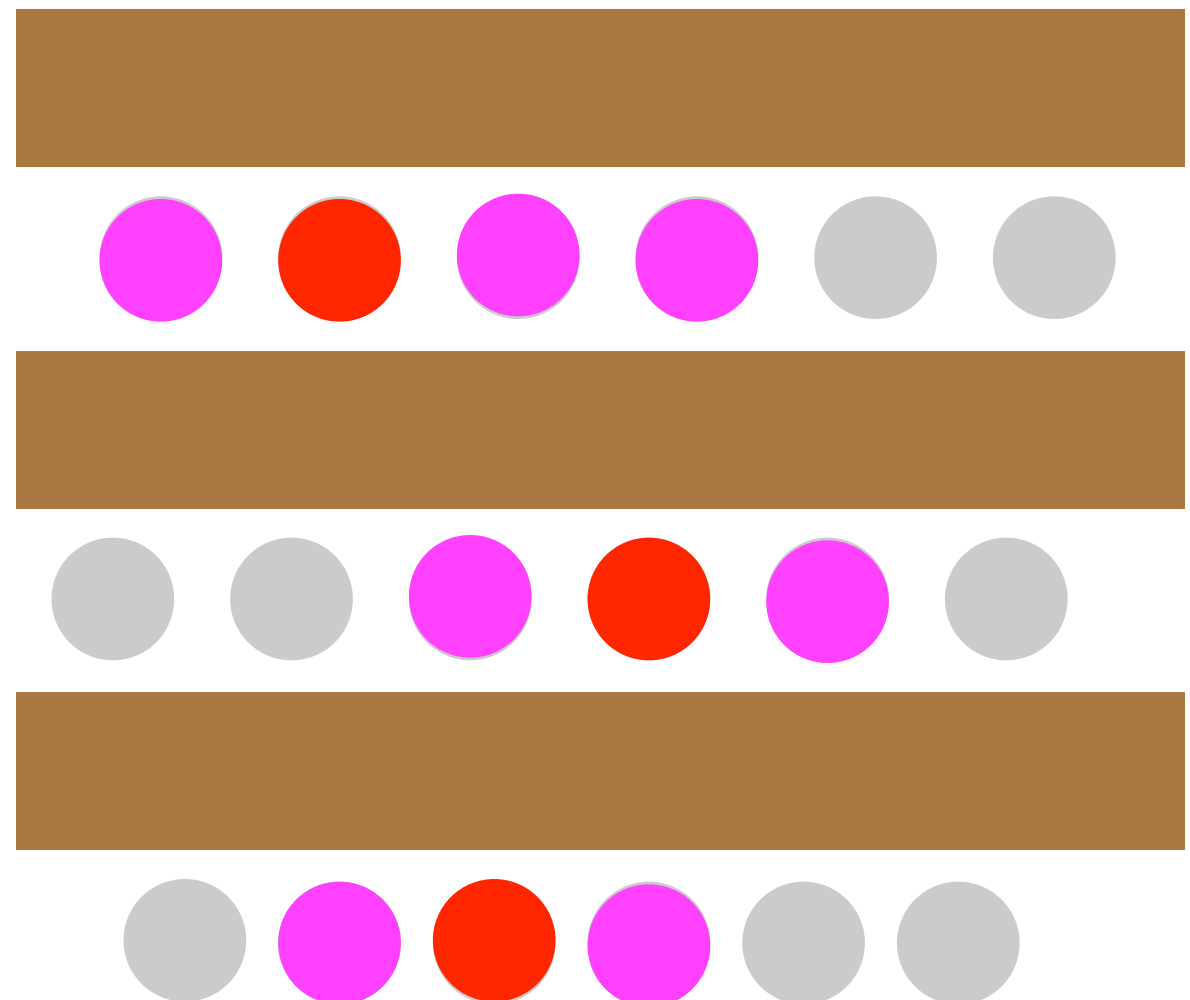
general lab policy issues

- no food or drink inside computer hall
- wipe feet before entering
- coats in coat room
- do not touch walls (frescoes)
- we have strict arrival and departure times



Laboratory Best Practices

- Work together in pairs/
groups
 - Variations in expertise
 - Variations in patience



post-lab discussions

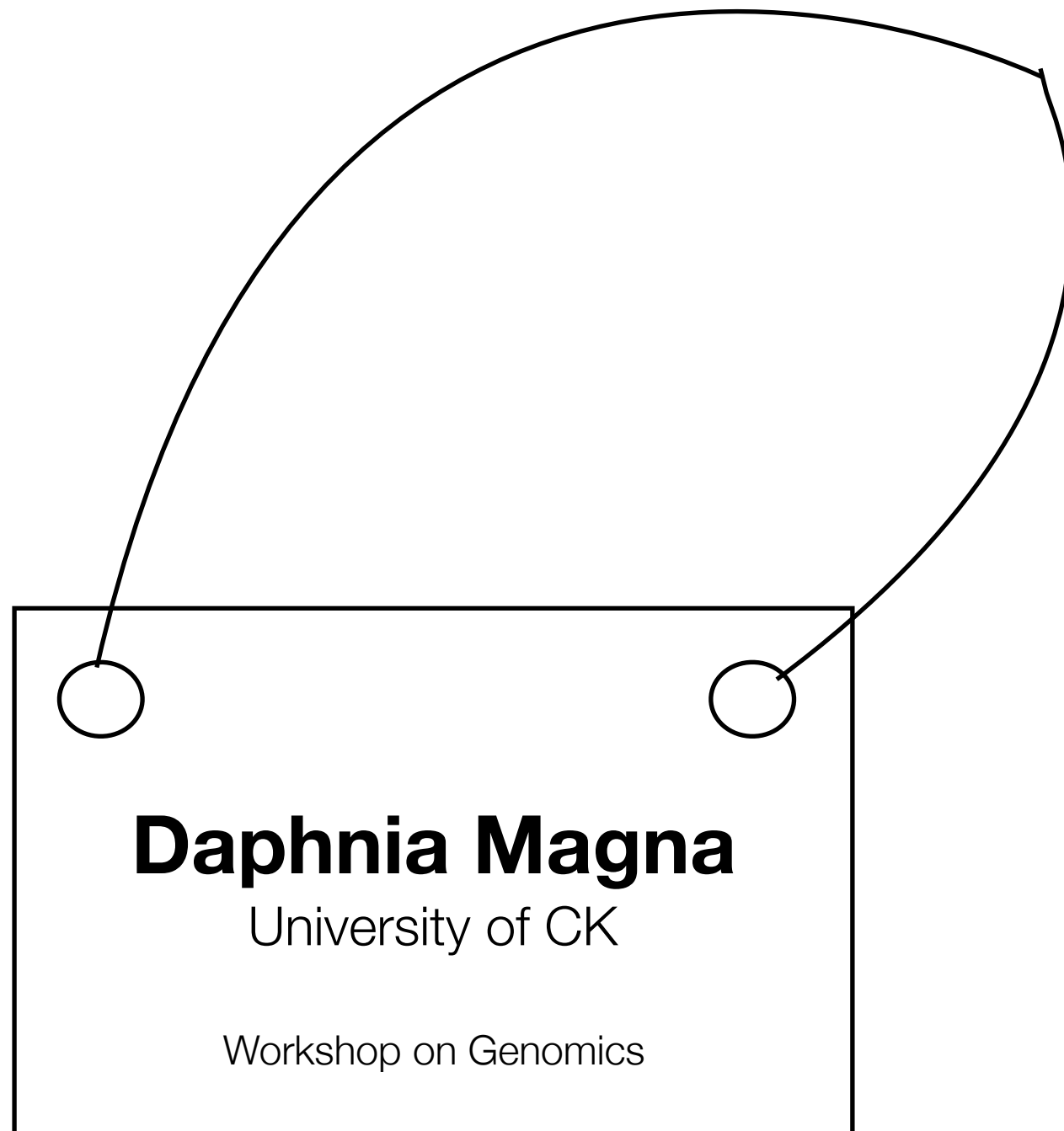
- an important feature of the Workshop
- Music Bar or Festi Bar behind Hotel Zlatý Anděl



t-shirt competition

- <http://evomics.org/registration-form/t-shirt-competition/>
- the top designs will receive a very special gift
- fame, fortune! your design will be worn by people from around the world for years to come
- submit by THURSDAY

Please wear your name tag!



communication during workshop

- workshop website: **evomics.org**
- Twitter: **#evomics2016**
- Flickr: **<https://goo.gl/RfzjQa>**
- Facebook: **Workshop on Genomics**

next

- Information by Daniel Kintzl
- Coffee/tea break
- Group photo
- Walk over to House of Prelate
- start again at 14.00 (2 pm)
Theater

