SciLifeLab Bioinformatics Platform

National Bioinformatics Infrastructure Sweden (NBIS)
www.nbis.se

Björn Nystedt
bjorn.nystedt@scilifelab.se
Manager, Bioinformatics Long-term Support (WABI)

What is SciLifeLab?

SciLifeLab

Government: One of the three main research infrastructures in Sweden, along with MAX-IV and ESS

Solna
Uppsala
Umeå
Linköping
Lund
Gothenburg

SciLifeLab

SciLifeLab

National service
The Swiss army knife for Swedish Life Science researchers

Local scientific center

Director: Olli Kallioniemi
Co-director: Siv Andersson

Vision:
To be an internationally leading center that develops, uses and provides access to advanced technologies for molecular biosciences with focus on health and environment.

2010: Strategic research initiative
2013: National resource
2015: New management/chairman

www.scilifelab.se

SciLifeLab platforms

SciLifeLab

SciLifeLab national service

National Genomics Infrastructure

Clinical Diagnostics

Functional Genomics

National Bioinformatics Infrastructure Sweden

Bengt Persson

NBIS NATIONAL BIOINFORMATICS INFRASTRUCTURE SWEDEN

VR

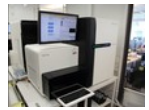
SNIC

Computer resources free for Swedish researchers

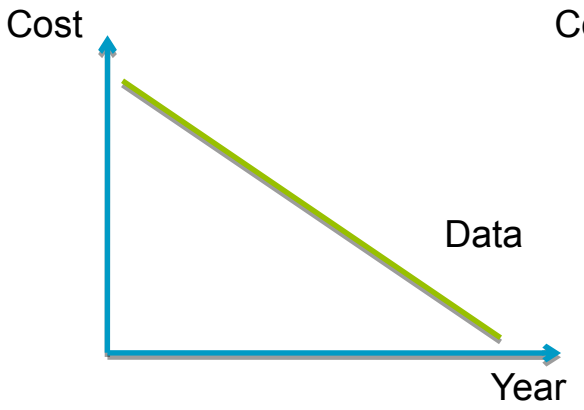
CERN vs Illumina

CERN: $5 billion

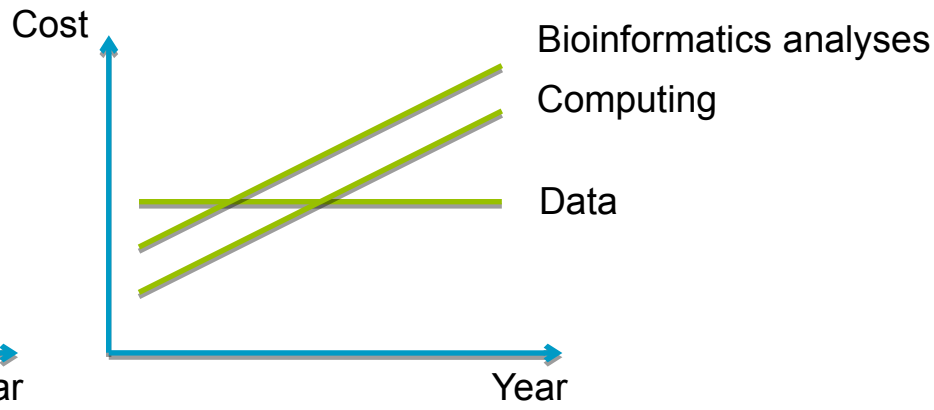
Illumina market value: $45 billion



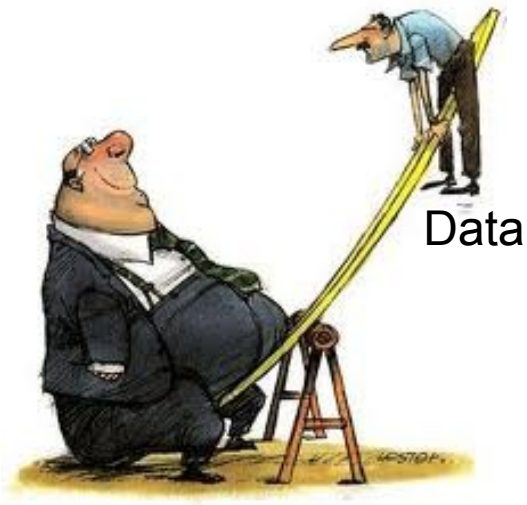
Production is cheap, analysis is not



"Per base"



"Per project"



Data scientists

Data

Our role
We want to help the Swedish Life Science community to **build knowledge** in large-scale data analysis, and to make bioinformatics **easily accessible** for all.

NBIS: Support, Tools and Training

400 consultations

Future compute environments

800 compute projects
200 software and databases

30 training events
500 PhD/post-docs

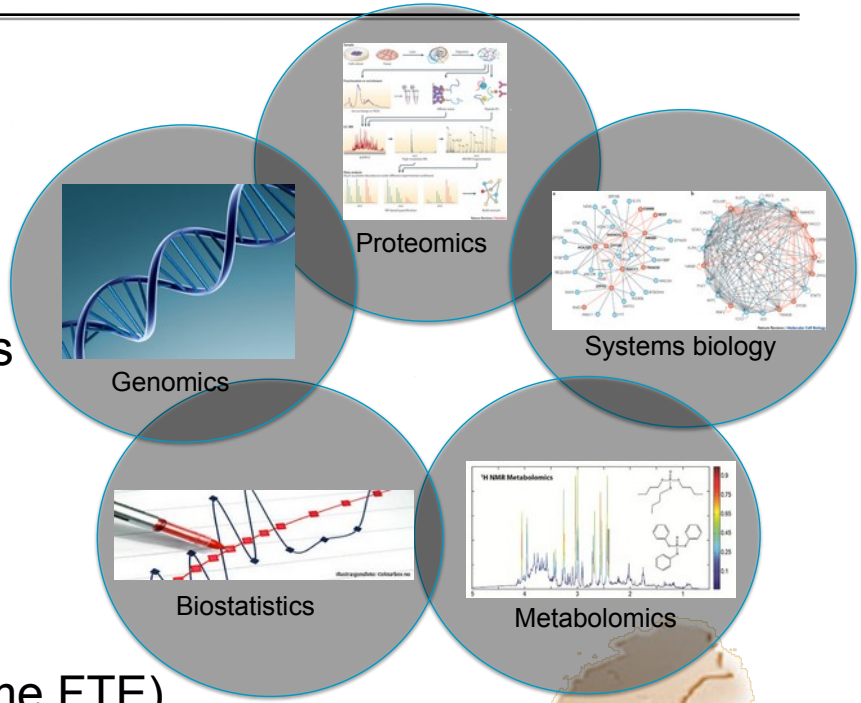
Data publishing and open science
Secure sharing of sensitive data

Efficient tools and workflows

150 research projects

Support tracks

https://nbis.se/support/

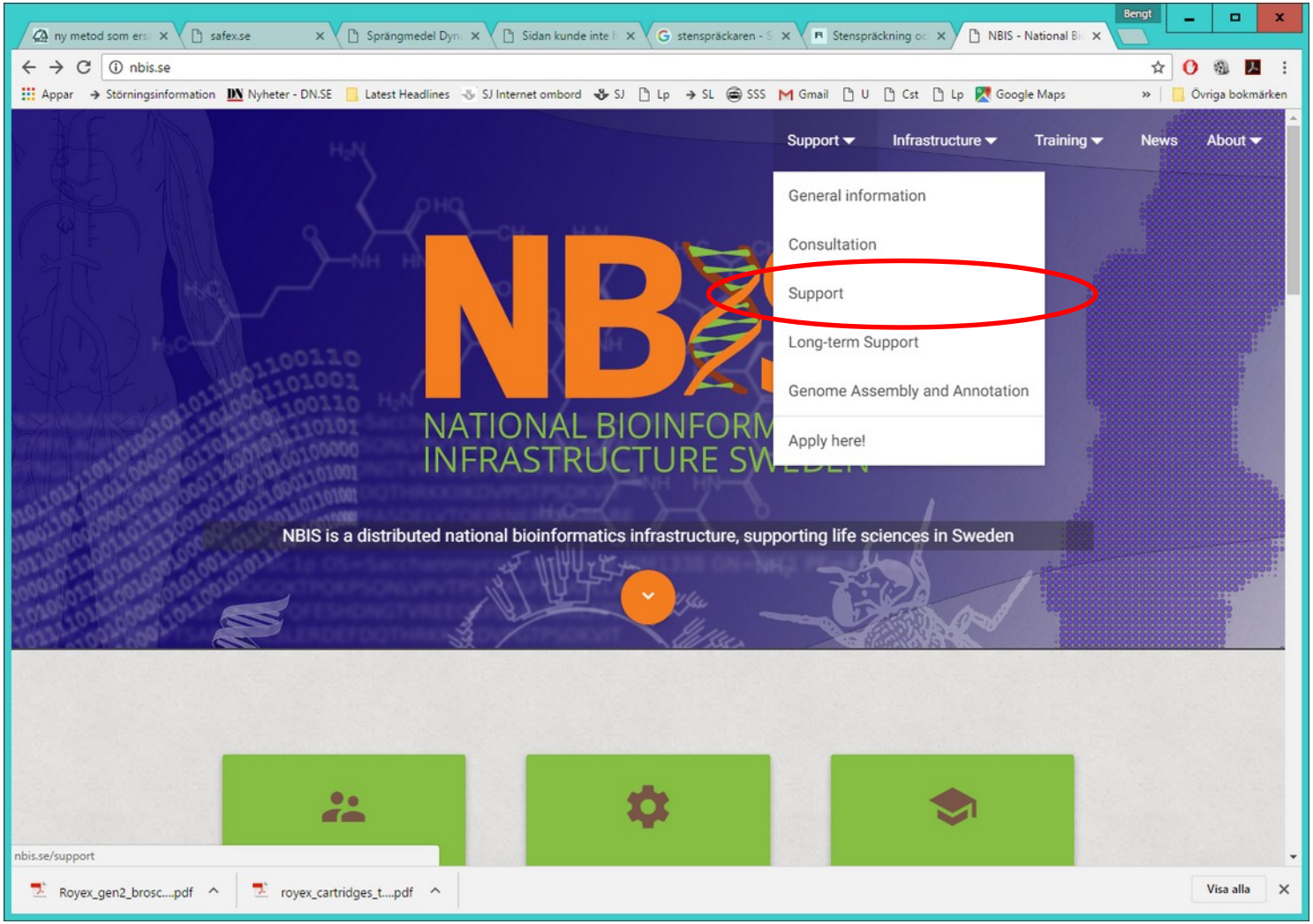


- Study design consultation (free)
  + drop-in sessions every week @ all 6 sites
- Support (User fee 800 kr/h)
- Partner Projects (Salary-based fee, part-time FTE)
- Long-term Support and systems biology
  (500h, free, scientific peer-review)

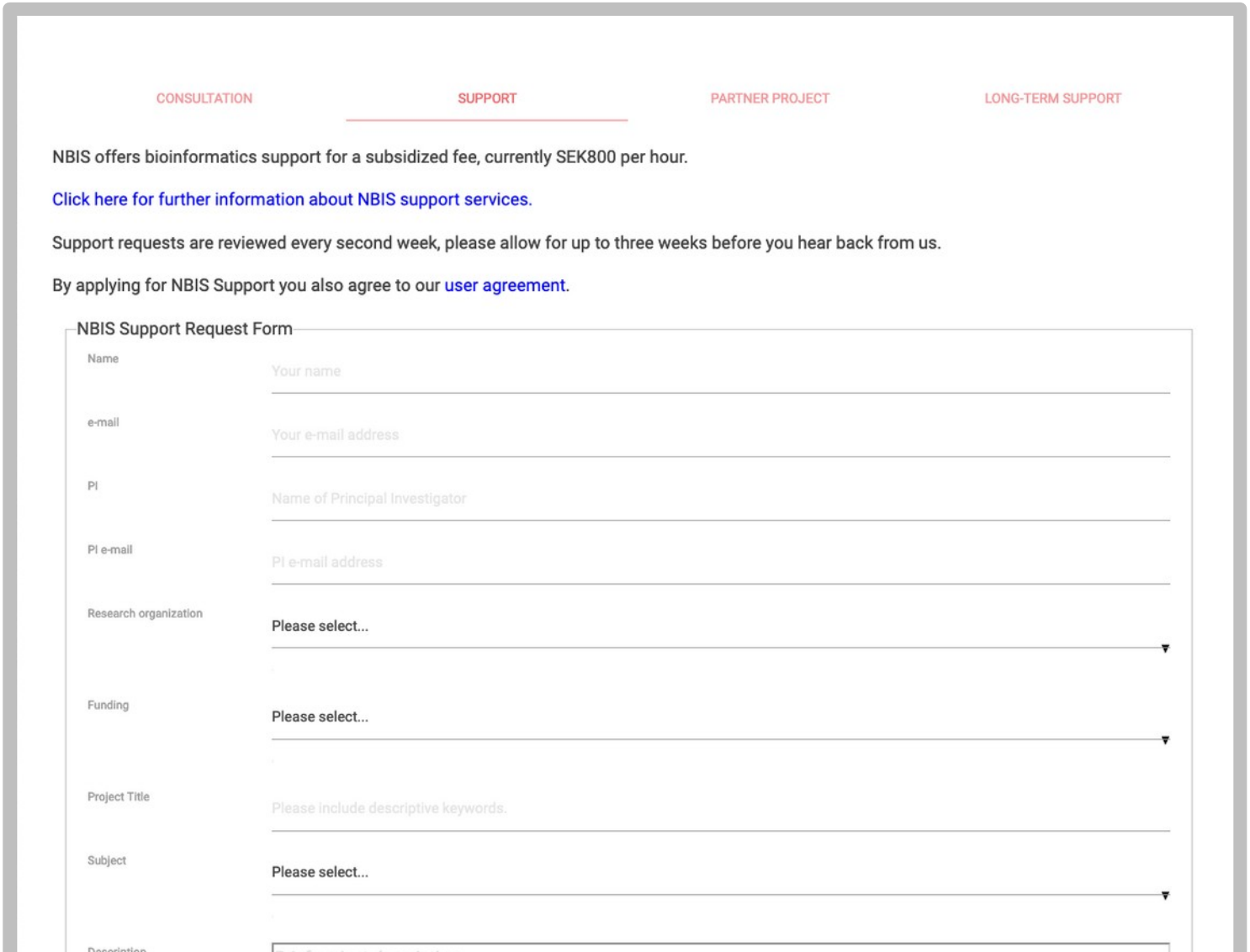
Deadline today Jan 31!
(Next round in May 2020)

Annually
~400 consultations, ~100 new support projects

How to get support
nbis.se



Support form



CONSULTATION | SUPPORT | PARTNER PROJECT | LONG-TERM SUPPORT

NBIS offers bioinformatics support for a subsidized fee, currently SEK800 per hour.

Click here for further information about NBIS support services.

Support requests are reviewed every second week, please allow for up to three weeks before you hear back from us.

By applying for NBIS Support you also agree to our user agreement.

NBIS Support Request Form

Name — Your name

e-mail — Your e-mail address

PI — Name of Principal Investigator

PI e-mail — PI e-mail address

Research organization — Please select...

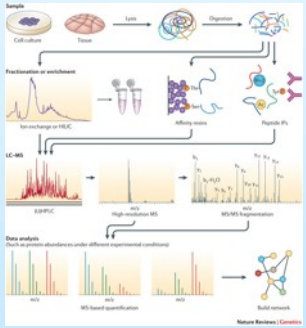
Funding — Please select...

Project Title — Please include descriptive keywords.

Subject — Please select...

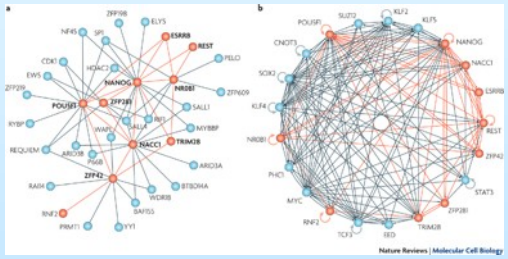
Bioinformatics support

SciLifeLab



Proteomics

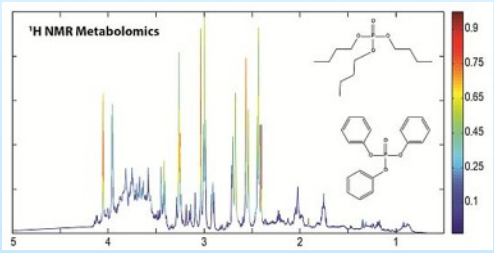
Genomics



Systems biology

~100 new projects/year

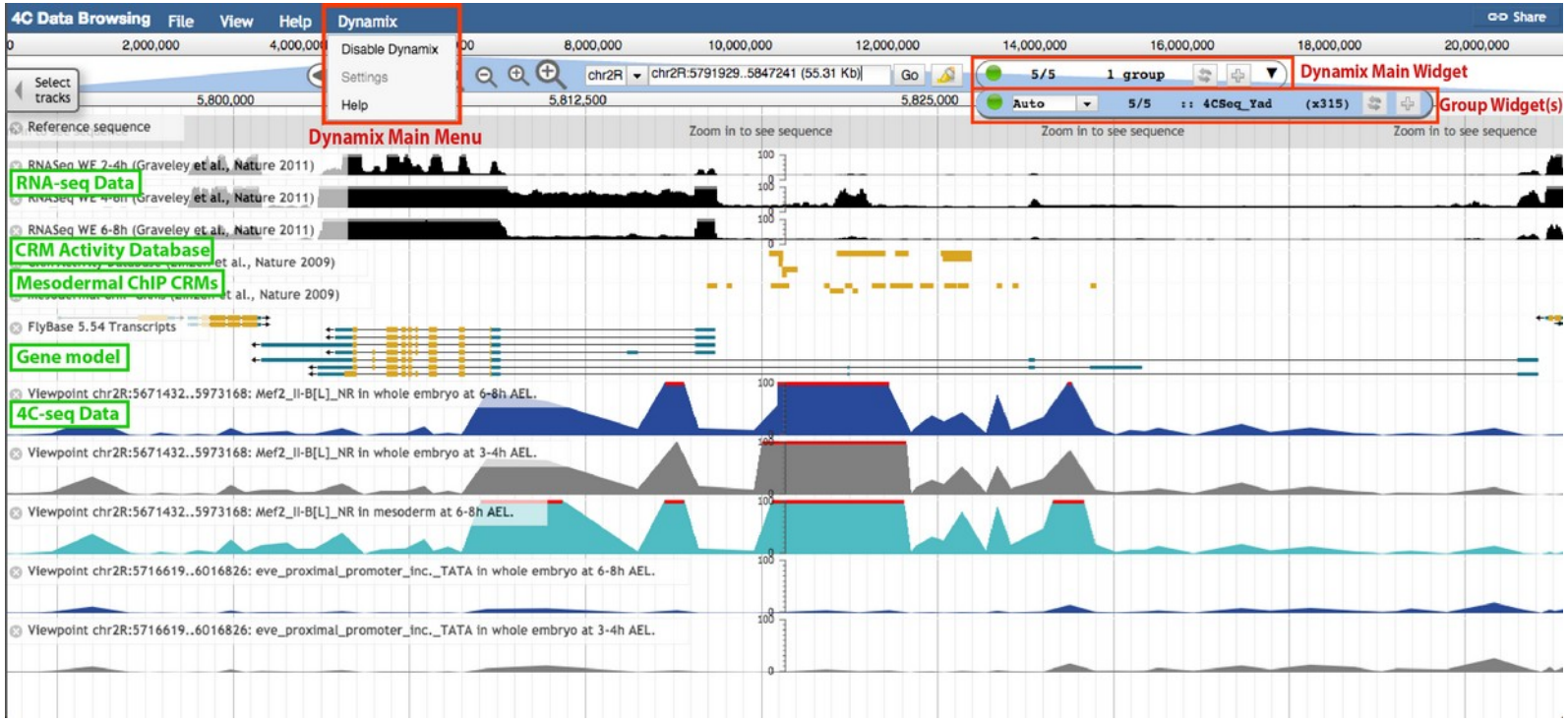
Biostatistics



Metabolomics

Genome assembly and annotation

Henrik Lantz



- 10 - 20 projects per year
- Highly specialized staff and robust pipelines
- Tight user interaction
- Numerous manual and semi-manual QC steps
- Supports ENA submission
- Editable user interface

Cost effective with high quality!

Training and tools

Hands-on workshops

Sarek

Cancer Genomics Workflow

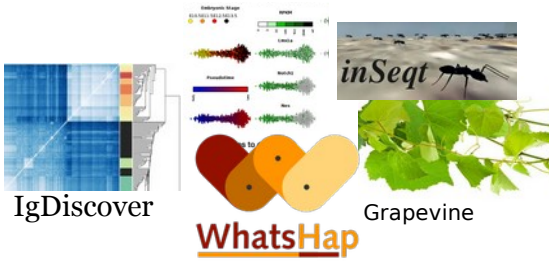
PhD mentoring program

SweGen

1000 Swedish Genomes resource

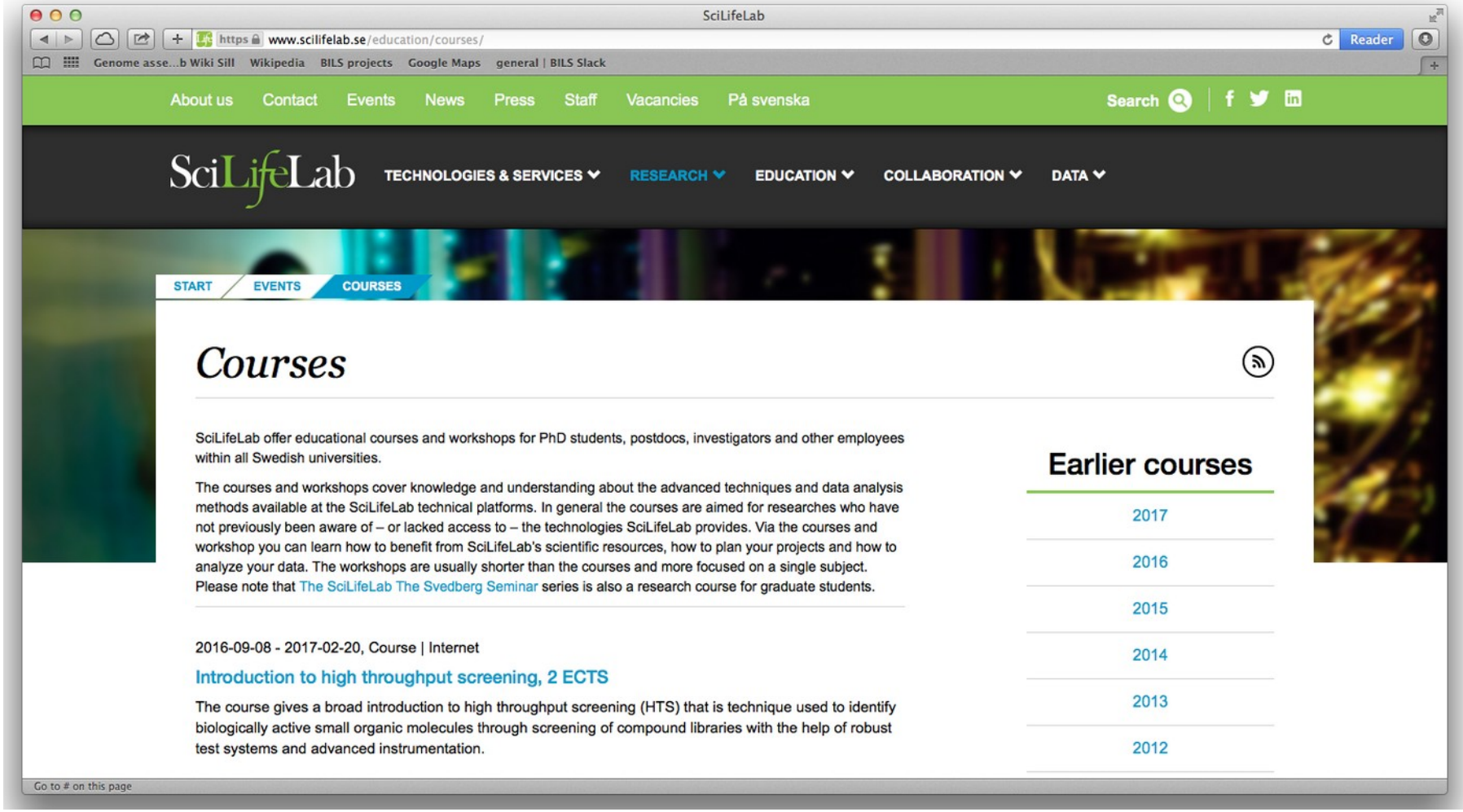
RaukR 2018

Summer School Visby



Spin-off tools

Course page


SciLifeLab
https www.scilifelab.se/education/courses/
Reader
Genome asse...b Wiki Sill
Wikipedia
BILS projects
Google Maps
general | BILS Slack
About us
Contact
Events
News
Press
Staff
Vacancies
På svenska
Search
SciLifeLab
TECHNOLOGIES & SERVICES
RESEARCH
EDUCATION
COLLABORATION
DATA
START
EVENTS
COURSES
Courses
SciLifeLab offer educational courses and workshops for PhD students, postdocs, investigators and other employees within all Swedish universities.
The courses and workshops cover knowledge and understanding about the advanced techniques and data analysis methods available at the SciLifeLab technical platforms. In general the courses are aimed for researches who have not previously been aware of – or lacked access to – the technologies SciLifeLab provides. Via the courses and workshop you can learn how to benefit from SciLifeLab's scientific resources, how to plan your projects and how to analyze your data. The workshops are usually shorter than the courses and more focused on a single subject.
Please note that The SciLifeLab The Svedberg Seminar series is also a research course for graduate students.
2016-09-08 - 2017-02-20, Course | Internet
Introduction to high throughput screening, 2 ECTS
The course gives a broad introduction to high throughput screening (HTS) that is technique used to identify biologically active small organic molecules through screening of compound libraries with the help of robust test systems and advanced instrumentation.
Earlier courses
2017
2016
2015
2014
2013
2012
Go to # on this page

National PhD level bioinformatics courses

Joint efforts by SciLifeLab staff and researchers (+ more)

Introduction to omics data analysis
4 x Introduction to Bioinformatics using NGS data, 5 days (Manfred Grabherr)
1 x Omics data analysis, 10 days (Erik Fredlund, Lukas Orre)

Advanced topical courses
2 x RNAseq, 3 days (Johan Reimegård)
1 scRNA, 2 days (Åsa Björklund)
1 x Genome assembly, 2 days (Henrik Lantz)
1 x Genome annotation, 2 days (Henrik Lantz)
1 x Metagenomics, 2 days (Anders Andersson, Thijs Ettema)
1 x Proteomics, 4 days (Fredrik Levander)

Programming and reproducible research
1 x Reproducible research, 2 days (Rasmus Ågren, Leif Wigge)
2 x Python, 2 days (Frédéric Haziza, Sergiu Netotea)
2 x Perl, 5 days (Matt Webster)
1 x R Summer School, 10 days: RaukR (Marcin Kierczak)
1 x R programming Foundations for Life Scientists, 5 days (Marcin Kierczak)
1 x Unix/Linux Tutorial for beginners, 3 days (Mihaela Martis)

500+ students/year
Very positive course evaluations
Teacher-dense
Good for networking

www.scilifelab.se/education/courses/
www.nbis.se/training/events.html

The Swedish Bioinformatics Advisory Program

PhD students get a senior bioinformatician as a personal advisor during 2 years of their PhD. Monthly project meetings + two grand meetings per year to aid networking and knowledge transfer.

www.scilifelab.se/education/mentorship/the-swedish-bioinformatics-advisory-program/

Deadline this Monday Feb 3!

The Swedish Bioinformatics Advisory
Student evaluation, June 2015

NBIS – a unique national resource

"[NBIS..] is crucial to the future competitiveness of Sweden in data-driven life sciences research, and is helping to keep Sweden in the European forefront in the area."

""..the infrastructure will greatly enhance the quality of analyses and data management and therefore of the scientific conclusions based upon the avalanche of data available."

The Swedish Research Council, 2017 and 2019
Overall score: 7/7 (*"Outstanding"*)
Scientific impact: 7/7 (*"Outstanding"*)

www.nbis.se