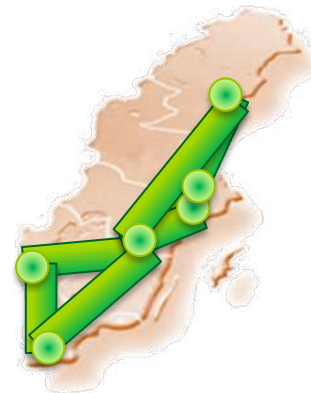
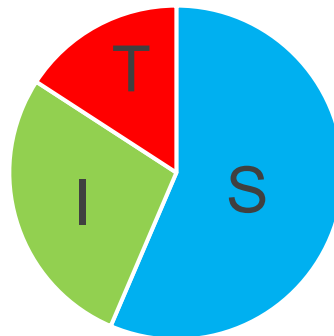

National Bioinformatics Infrastructure Sweden NBIS

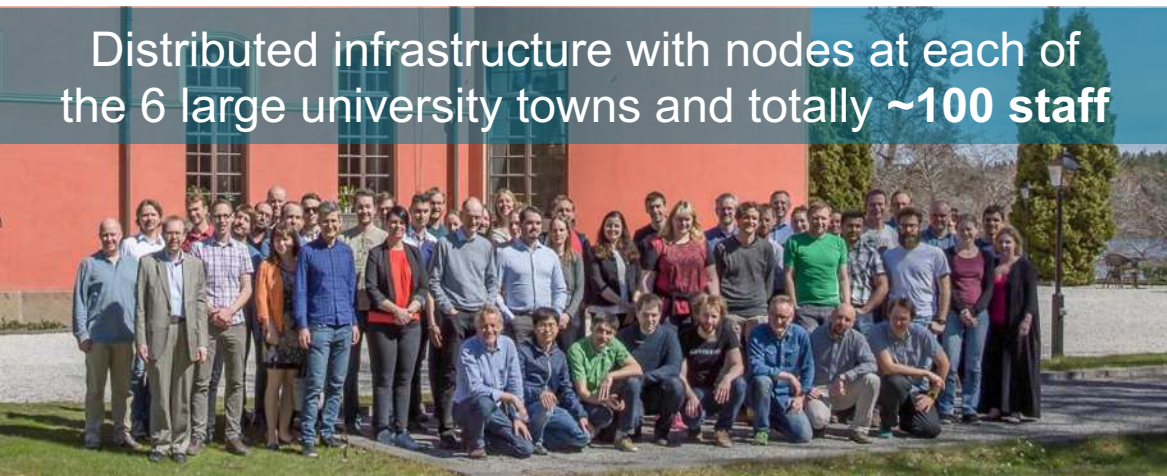
Dag Ahrén
21 May 2021

Enable world-class life science research and maximise scientific and societal impact of collected data by:

- Providing expert knowledge, innovative data integration, advanced training, efficient data publication for open science, and access to high-performance data analysis methods
- Coordinating bioinformatics support within Sweden and **making bioinformatics easily accessible** for life science researchers
- Swiftly responding to changes in support needs as new techniques are developed and utilised
- Forming the Swedish ELIXIR node and participating in relevant international projects



Distributed infrastructure with nodes at each of the 6 large university towns and totally ~100 staff



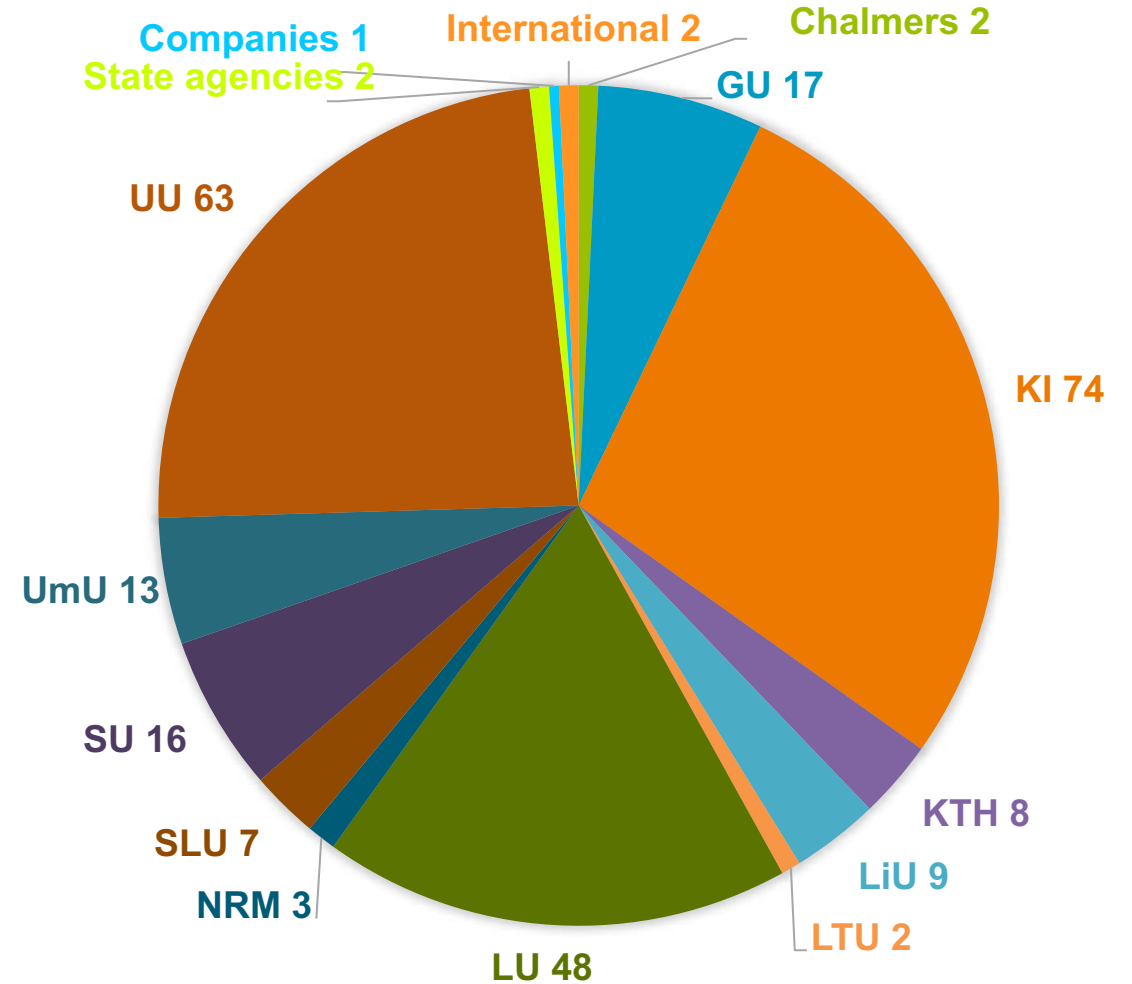
Analysis of biological data

- **Support**
 - Genomics/NGS/Metagenomics
 - Genome annotation and assembly
 - MS-Proteomics and Protein bioinformatics
 - Systems biology and Metabolomics
 - Integrative bioinformatics
 - Biostatistics
 - Data publication and FAIRification of data
 - Data management and Data stewardship (collaboration with SciLifeLab Data Centre) <https://nbis.se/support>
- **Infrastructure**
 - services, computational resources, data management, tools and guidelines
 - <https://nbis.se/infrastructure>
- **Training**
 - <https://nbis.se/training>
- The Swedish node in ELIXIR -- the European infrastructure for biological information

Funding from:



- **267 PIs** (104 female, 163 male)
- 212 active support projects
- 104 study design consultations
- Several advanced training courses



Overview of NBIS units

<https://nbis.se/>



The screenshot shows the NBIS website homepage. At the top left is the NBIS logo. At the top right is a navigation menu with links for Support, Infrastructure, Training, News, Events, and About, followed by the SciLifeLab logo. The main header features the large NBIS logo with a DNA double helix, and the text 'NATIONAL BIOINFORMATICS INFRASTRUCTURE SWEDEN'. Below this is a dark blue banner with the text 'NBIS is a distributed national bioinformatics infrastructure, supporting life sciences in Sweden'. A red banner below that contains the text 'See [here](#) for information on how our services are affected by the [covid19](#) outbreak'. The main content area has a light grey background and features three green boxes: 'Support' (with a group of people icon), 'Infrastructure' (with a gear icon), and 'Training' (with a graduation cap icon). Each box contains a brief description of the service.

NBIS
NATIONAL BIOINFORMATICS
INFRASTRUCTURE SWEDEN

NBIS is a distributed national bioinformatics infrastructure, supporting life sciences in Sweden

See [here](#) for information on how our services are affected by the [covid19](#) outbreak

Support
Support services ranging from short consultation, consultancy to long-term embedded bioinformaticians.

Infrastructure
Providing infrastructure in the form of services, computational resources, tools and guidelines to the life science community.

Training
Training events in advanced and applied bioinformatics.

- **Study design consultation**
 - provided for free (up to 3 hours)
 - help our users to order the right type of data for their analysis
 - consider bioinformatics and data management issues at an early stage
 - extra drop-in sessions at VR grant application periods
- **Short- & Medium-term support**
 - academic user fee 800 SEK (~80 EUR) per hour
 - short waiting times
 - 50% support between universities, most suitable expert
- **Long-term support**
 - KAW funding, up to 500 hours for free
 - scientific evaluation; application rounds 3 times per year
- **Partner Projects (PP)**
 - intended for projects with a large bioinformatics component
 - NBIS support ≥ 12 person months over the project life-time, running 2–5 years calendar time
 - user fee to cover staff costs



Training events and programs

- Courses, teacher-dense for good networking
- Mentor program, boosting PhD skills

Rapid knowledge-transfer

- Drop-in sessions (Currently online, Tuesdays at 14:00)
- Catalyse rapid knowledge-transfer across projects/research areas
- Portable tools and workflows to empower users



Infrastructure development

- International repositories (e.g. Federated EGA)
- Hosting/interoperability of national resources of major interest (e.g. Human Protein Atlas, SweFreq, Metabolic Atlas)



Data management (close collaboration with Data Centre)

- Representing Sweden in international data initiatives
- Data Stewards to guide users in data management and FAIR data publishing

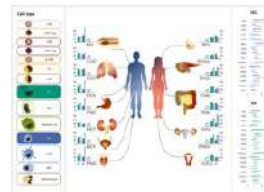


Tools

- Maintaining a few selected major Swedish software
- Continuous development of software, workflows and services



Mr Bayes
Bayesian Inference
of Phylogeny



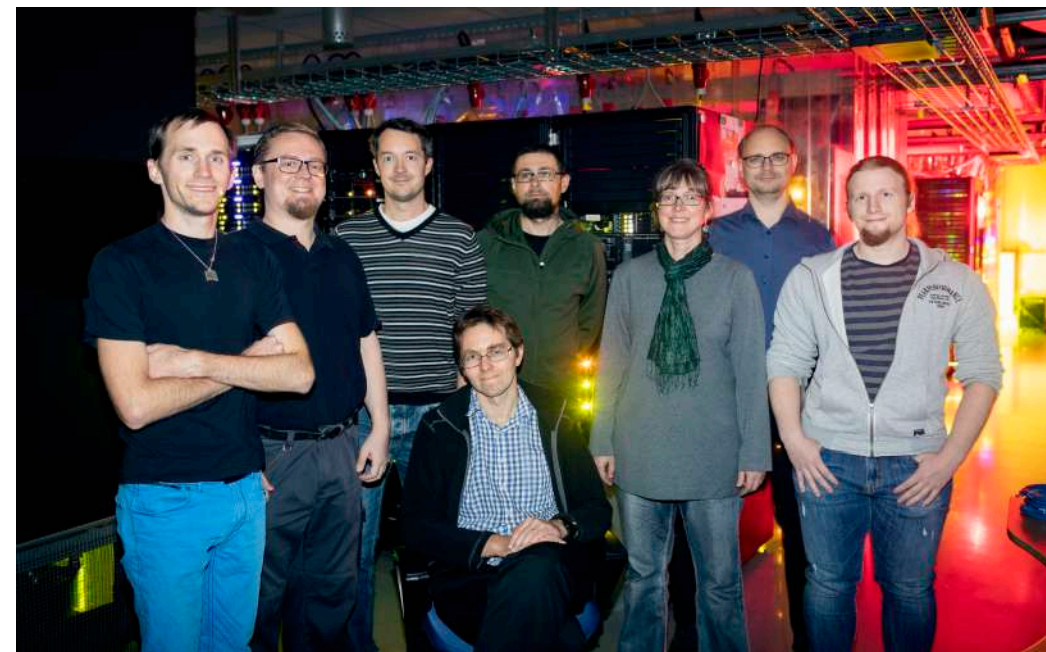
About 6 staff members

A **bridge** between NBIS and SNIC-funded UPPMAX

- SNIC — **free to use** national infrastructure for computing, funded by Swedish Research Council
- UPPMAX — Uppsala high-performance computing centre

Provides a **digital research environment** serving 700+ PIs with over 1000 projects

Focus on HPC systems provided by UPPMAX





NBIS coordinates the Swedish node in ELIXIR – the European infrastructure for biological information

22 members + 1 observer

Five technical platforms for

Compute

Data

Tools

Interoperability and

Training

Complemented by **Communities** in

Marine metagenomics

Rare diseases

Human data

Plants sciences

Proteomics

Metabolomics

Galaxy and more to come

Swedish contributions:

- Human Protein Atlas
- Human Data Community
- Federated EGA and Beacons
- Data Management
- Biodiversity
- Training (Jessica Lindvall Ex-Co)



- Bengt Persson, Head of Node
- Jessica Lindvall, Deputy Head of Node and Training Coordinator
- Johan Viklund, Technical Coordinator
- Jessica Lindberg, Node Coordinator

At the global level interactions with:
RDA, NIH BD2K, GA4GH

Any questions?



The screenshot shows the NBS website homepage. At the top left is the NBS logo. The main header features the NBS logo in large orange letters with a DNA double helix, and the text 'NATIONAL BIOINFORMATICS INFRASTRUCTURE SWEDEN'. A navigation menu at the top right includes 'Support', 'Infrastructure', 'Training', 'News', 'Events', and 'About', along with the SciLifeLab logo. A red banner in the center contains the text: 'See [here](#) for information on how our services are affected by the covid19 outbreak'. Below this, three green boxes describe the services: 'Support' (consultation and embedded bioinformaticians), 'Infrastructure' (computational resources and guidelines), and 'Training' (advanced and applied bioinformatics events).