

SND and SciLifeLab

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SciLifeLab Data Centre

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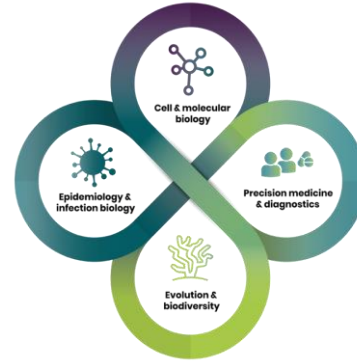
What is SciLifeLab?



National infrastructure



Research community



Data-driven life science program



National life science coordination



Training Hub



National data services and resources

Organisation



- SciLifeLab is a national infrastructure set by government ordinance
- KTH has main organising responsibility
- SciLifeLab is governed by a board with university representation, covering both national infrastructure (government funding) and DDLS research program (KAW funding)
- Assignment and funding to DC comes from universities through the SciLifeLab board

SciLifeLab joins national infrastructure and research



● Translation to healthcare & society

● Training: 3000 participants/yr

Infrastructure

10 technology platforms, >40 units
>1400 users/yr, 3000 projects/yr
~ 500 tech experts

- Bioinformatics
- Cellular and Molecular Imaging
- Chemical Biology and Genome Engineering
- Clinical Genomics
- Clinical Proteomics and Immunology
- Genomics
- Drug Discovery and Development
- Integrated Structural Biology
- Metabolomics
- Spatial and Single Cell Biology



● Collaborations

● Recruitments



Research environment

- ~ 1500 scientists
- 250 affiliated research groups
 - KI 32
 - KTH 47
 - SU 27
 - UU 83
 - Other univs
- Recruitment of 35 SciLifeLab Fellows
- 7 Research Community Programs
- 16 Technology Development Projects
- COVID-19 research program

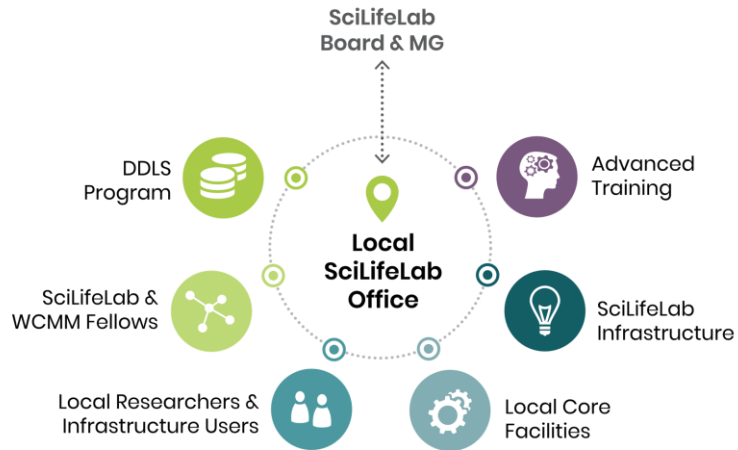


Data-driven life science

A new national 12-year 3.1 BSEK research program, funded by KAW (2021-2033).
~ 500 data scientists

- Data support (FAIR)
- Data analysis & AI
- 4 research areas
- Recruitment of 39 DDLS Fellows
- Research and training
- Collaborations with WASP
- Industrial program

SciLifeLab national sites

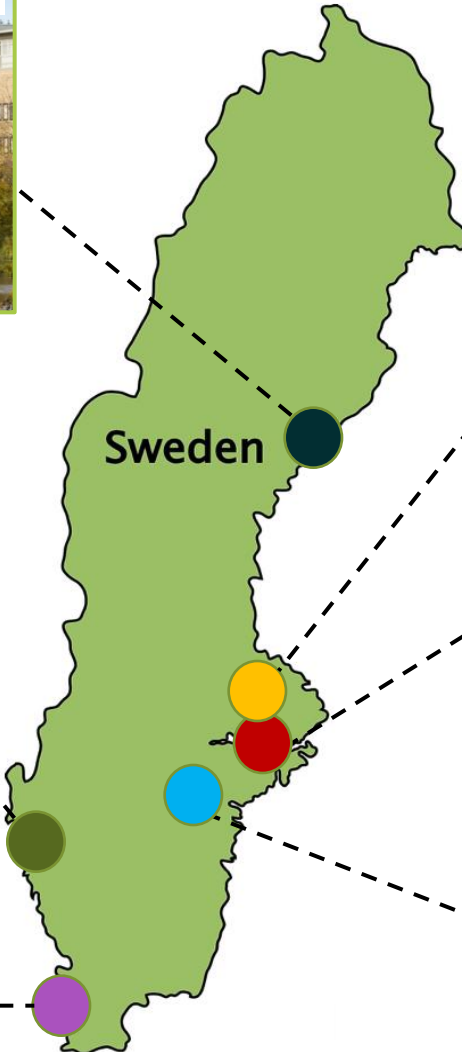


BIOINFORMATICS	GENOMICS
CLINICAL GENOMICS	CLINICAL PROTEOMICS & IMMUNOLOGY
METABOLOMICS	SPATIAL & SINGLE CELL BIOLOGY
CELLULAR & MOLECULAR IMAGING	INTEGRATED STRUCTURAL BIOLOGY
CHEMICAL BIOLOGY & GENOME ENGINEERING	DRUG DISCOVERY & DEVELOPMENT

SciLifeLab – Umeå



SciLifeLab - Gothenburg



SciLifeLab Uppsala (Navet)



SciLifeLab Stockholm (CS)



SciLifeLab – Linköping





NBIS

Summary of NBIS

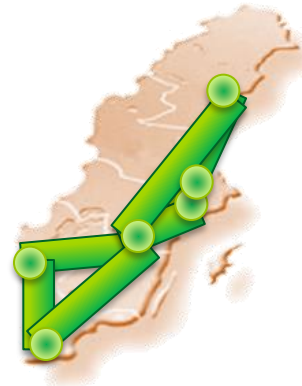
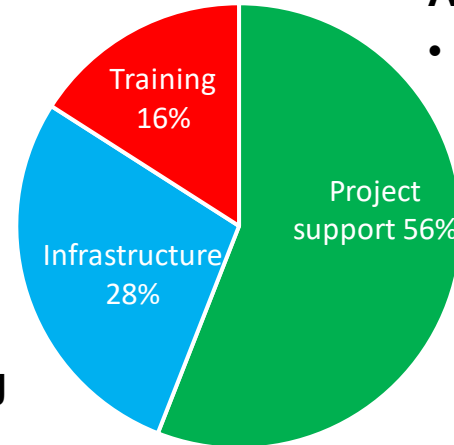
SciLifeLab Bioinformatics Platform

Vision and Mission:

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 in total ~120 staff



Analysis of biological data

• Support

- Genomics/NGS/Metagenomics
 - Genome annotation and assembly
 - MS-Proteomics and Protein bioinformatics
 - Systems biology and Metabolomics
 - Bioimage informatics and spatial omics
 - 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>

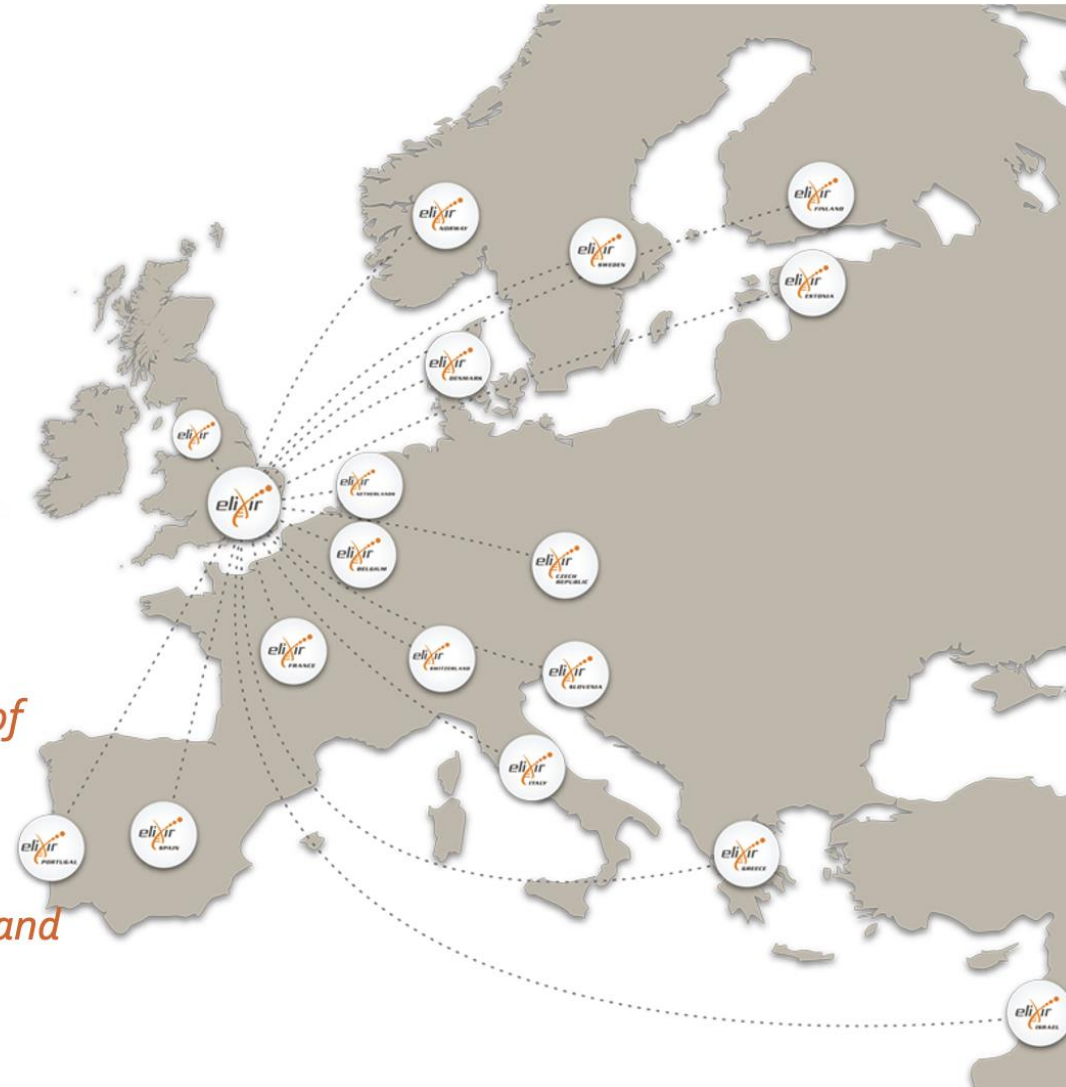
- The Swedish node in ELIXIR – the European infrastructure for biological information

Funding from:





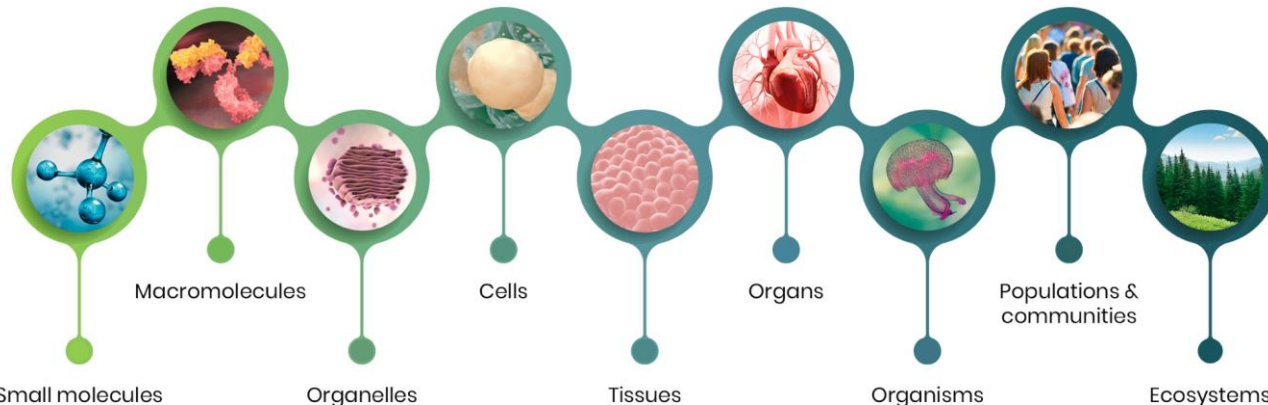
- **Data**
Sustain core data resources
- **Tools**
Services & connectors to drive access and exploitation
- **Compute**
Access, Exchange & Compute on sensitive data
- **Standards**
Integration and interoperability of data and services.
- **Training**
Professional skills for managing and exploiting data



Data sharing in life science



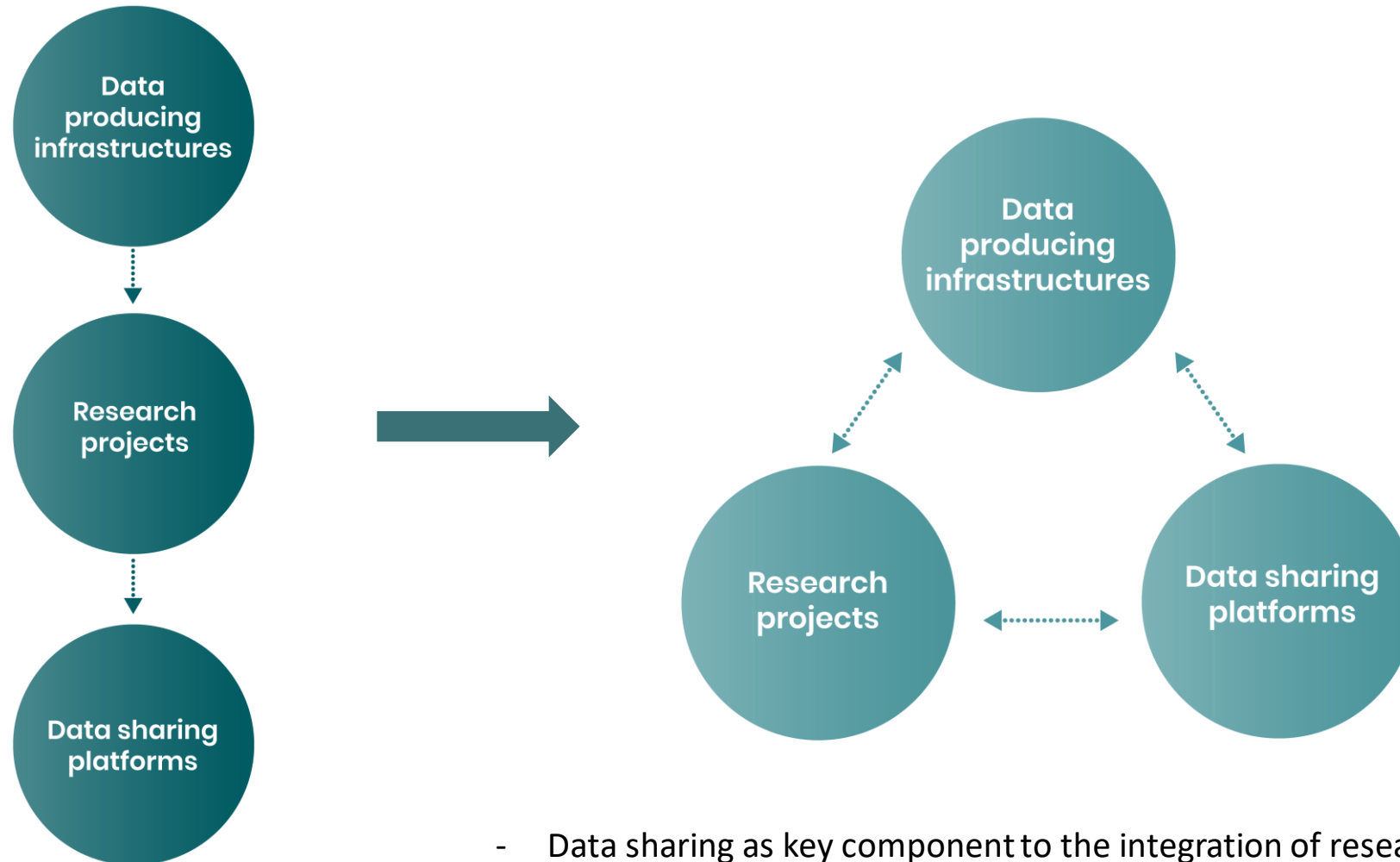
- First database of DNA sequences 1980
- European Bioinformatics Institute 1995
- Mirroring of sequence data EU – USA – Japan
- Over 350 PB life science data available at EBI
- Data sharing is a global driving force for life science research
- FAIR as a concept started from life science
- Reproducibility and transparency
- Strong bottom-up development of meta-data standards



Interactions SND - SciLifeLab



Integrating infra, research and data



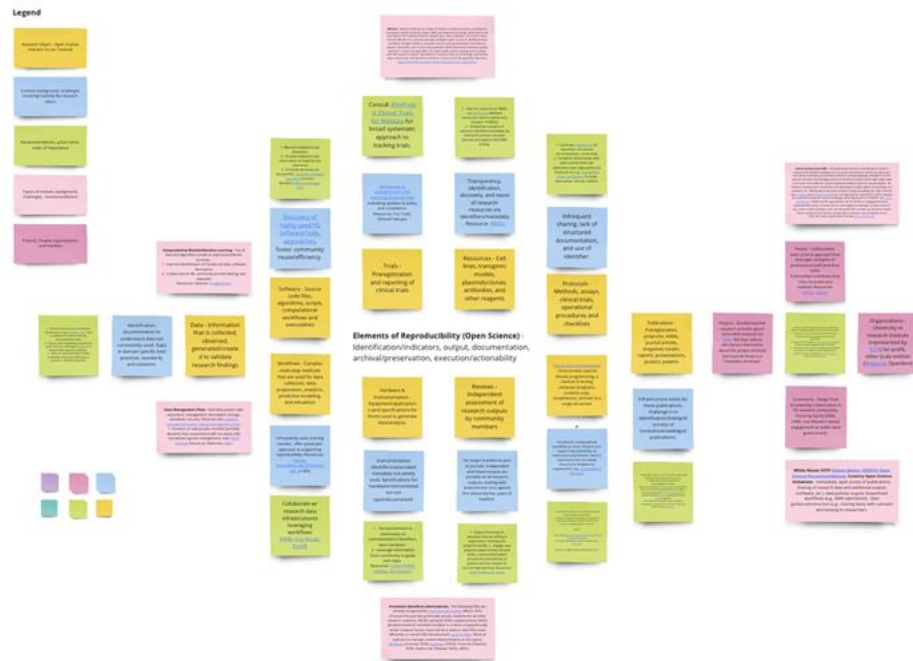
- Data sharing as key component to the integration of research and infrastructure
- Bringing FAIR already to the start of the data lifecycle



Open Science Policies & Recommendations

International to national policies and recommendations driving open science in research

Mapping open science and prioritizing indicators to ultimately help with understanding research quality and reproducibility.



Explore the first Open Science Indicators dataset—and share your thoughts

December 12, 2022 / PLOS / Open Code Open Data Open Science Open Science Indicators Preprints



Written by Lauren Cadwallader, Lindsay Morton, and Iain Hrynaszkiewicz

Open Science is on the rise. We can infer as much from the proliferation of Open Access publishing options; the steady upward trend in bioRxiv postings; the periodic rollout of new national, institutional, or funder policies.

Outreach & Training



Networked and embedded in communities, working collaboratively on special topics in open science.



researchdata.se

Contact Data Centre



SciLifeLab Services⁺ Research⁺ Capabilities⁺ Data-Driven Life Science **Data** Calendar⁺ News About us⁺ Contact

Community Pages

Scientific Data Platform

The SciLifeLab Data Platform is a new technical hosting environment for data-centric tools, databases, and support for data-driven life science. The website will function as a hub for the life science community. The platform, funded by the SciLifeLab & Wallenberg National Program for Data-Driven Life Science (DDL), will serve all life science researchers and data-producing facilities in Sweden.

[Learn More](#)

IT and Software Services

The SciLifeLab Data Centre provides services for IT and data management. We also work to facilitate the communication between SciLifeLab platforms, their users, and the research community, and develop databases and tools. The purpose is to maximize the scientific impact of SciLifeLab generated data and provide a good helpful IT environment for the SciLifeLab platforms and their users.

[See All Services](#)

Publish data

The SciLifeLab Data Repository, powered by Figshare, is a repository for publishing any kind of research-related data, e.g. documents, figures, or presentations. Figshare is an open data repository used by researchers in numerous disciplines.

[Learn More](#)

AI model and compute application sharing

SciLifeLab Serve is a service for publishing apps and serving machine learning models. This service is currently under development.

[Learn More](#)

Pandemic data

SciLifeLab Data Centre maintains the Swedish national COVID-19 & Pandemic Preparedness Data Portal. The aim of the portal is to provide information, guidelines, tools and services to support researchers in utilizing Swedish and European infrastructures for data sharing.

[Learn More](#)

<https://www.scilifelab.se/data>

<https://data.scilifelab.se>

Email: datacentre@scilifelab.se

...and catch us on Slack!