SND and SciLifeLab

2023-11-07

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SciLifeLab Data Centre

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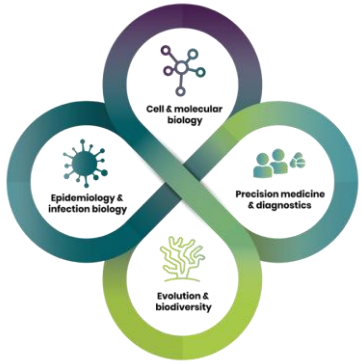
What is SciLifeLab?

National infrastructure

Research community



Data-driven life science program

SciLifeLab

National life science coordination

National data services and resources

Training Hub

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

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

- **Translation to healthcare & society**
- **Training:** 3000 participants/yr

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

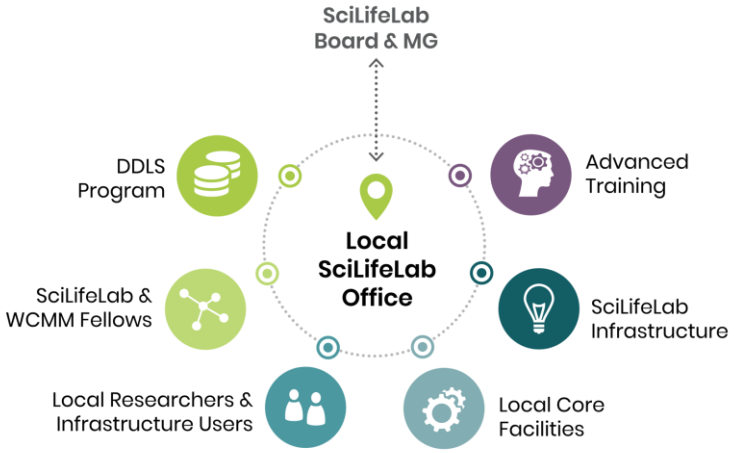
- **Collaborations**
- **Recruitments**

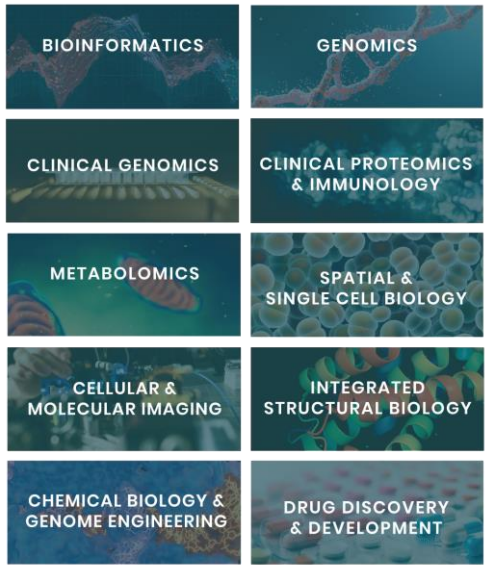
Data-driven life science

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

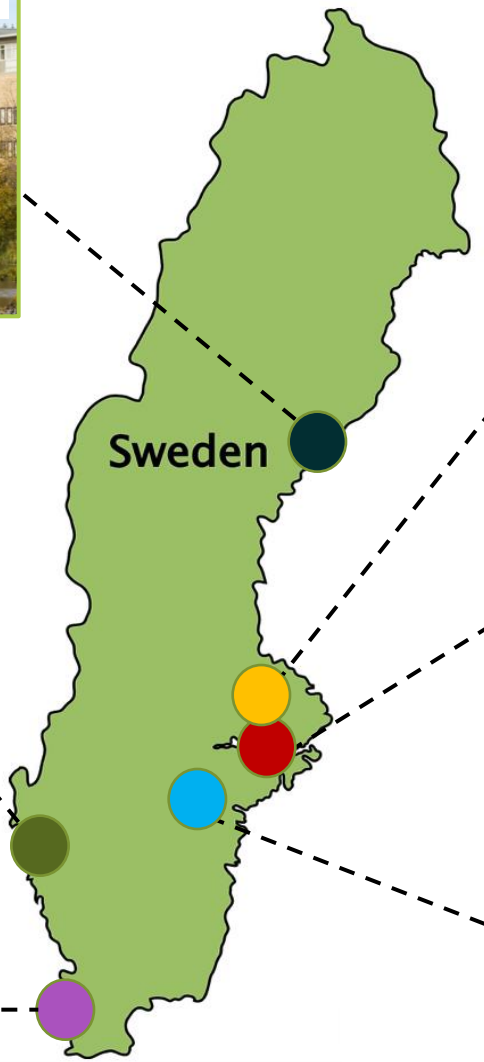




SciLifeLab – Umeå

SciLifeLab - Gothenburg

SciLifeLab
- Lund



SciLifeLab Uppsala (Navet)

SciLifeLab Stockholm (CS)

SciLifeLab – Linköping

National Bioinformatics Infrastructure Sweden

Summary of NBIS

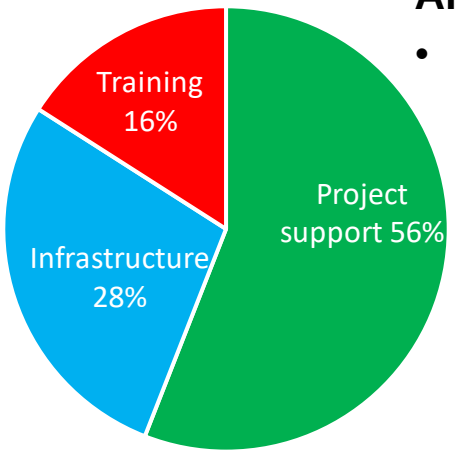
SciLifeLab Bioinformatics Platform

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:

ELIXIR

- **Data**

  Sustain core data resources

- **Tools**

  Services & connectors to drive access and exploitation

- **Compute**

  Access, Exchange & Compute on sensitive data

- **Standards**

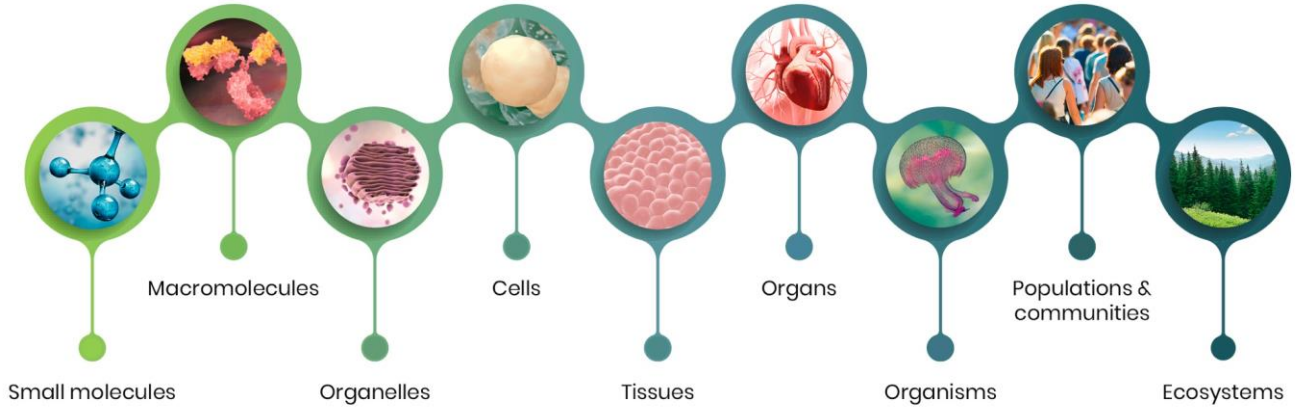
  Integration and interoperability of data and services.

- **Training**

  Professional skills for managing and exploiting data

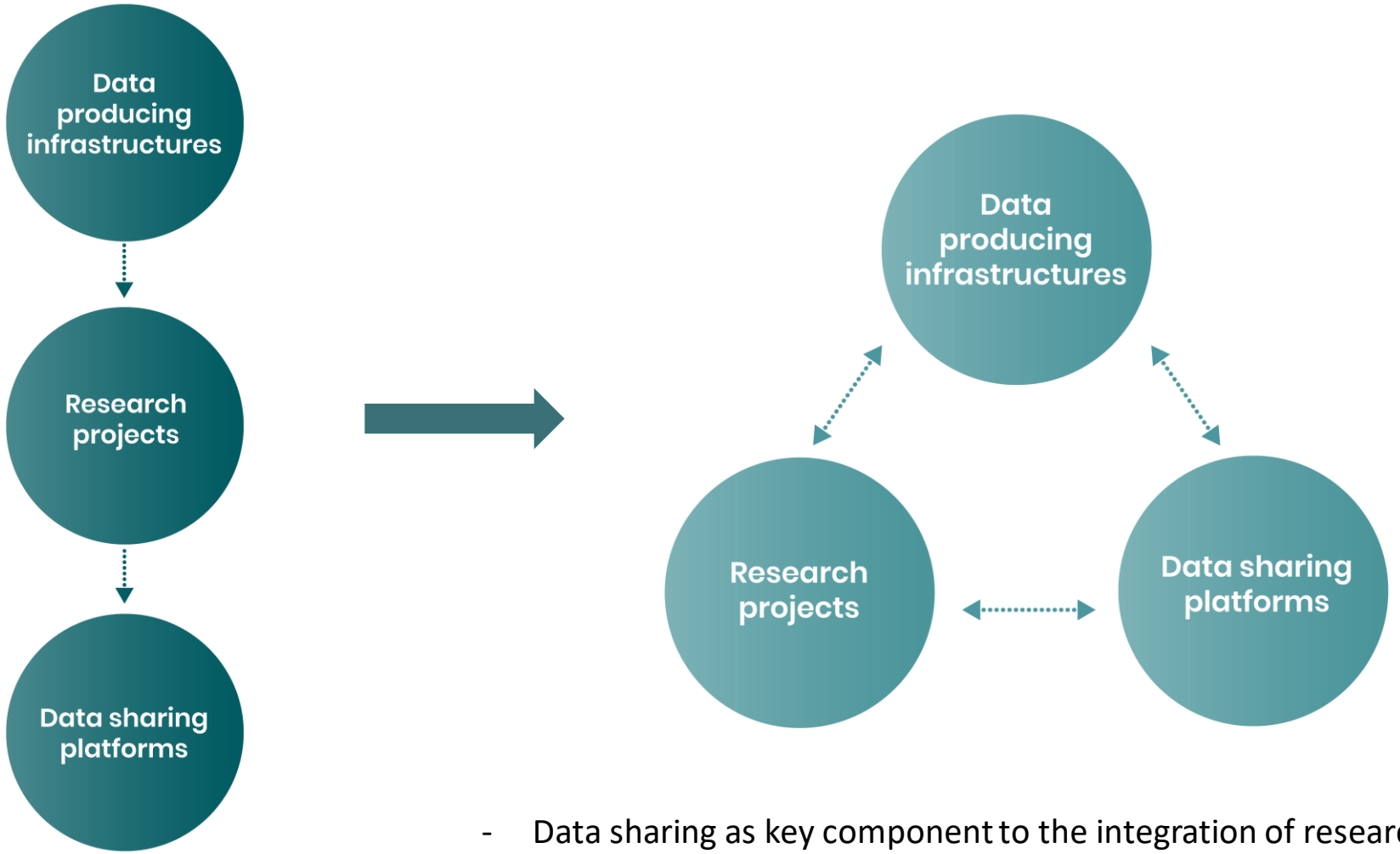
Data sharing in life science

- 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



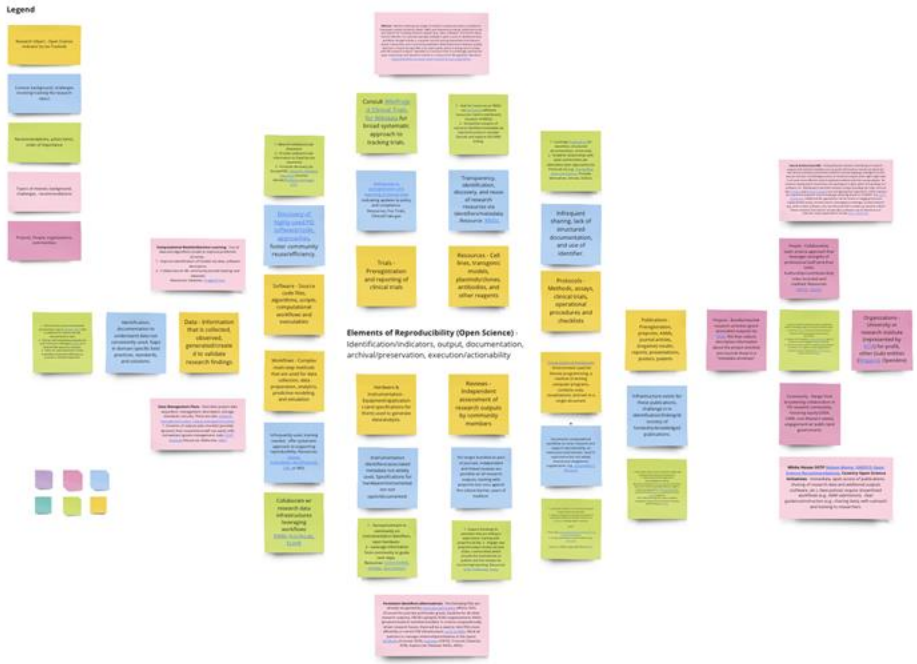
- Data sharing as key component to the integration of research and infrastructure
- Bringing FAIR already to the start of the data lifecycle

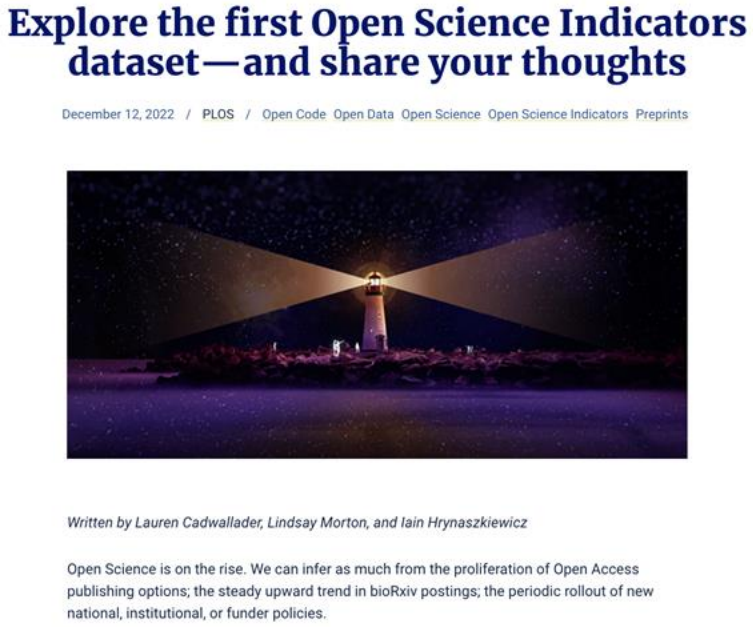
Open Science Policies & Recommendations

International to national policies and recommendations driving open science in research

Credit: Chris Erdmann

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.

Credit: Chris Erdmann

Outreach & Training

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

NBIS

elixir

Open Life Science

The Turing Way

EMBL-EBI

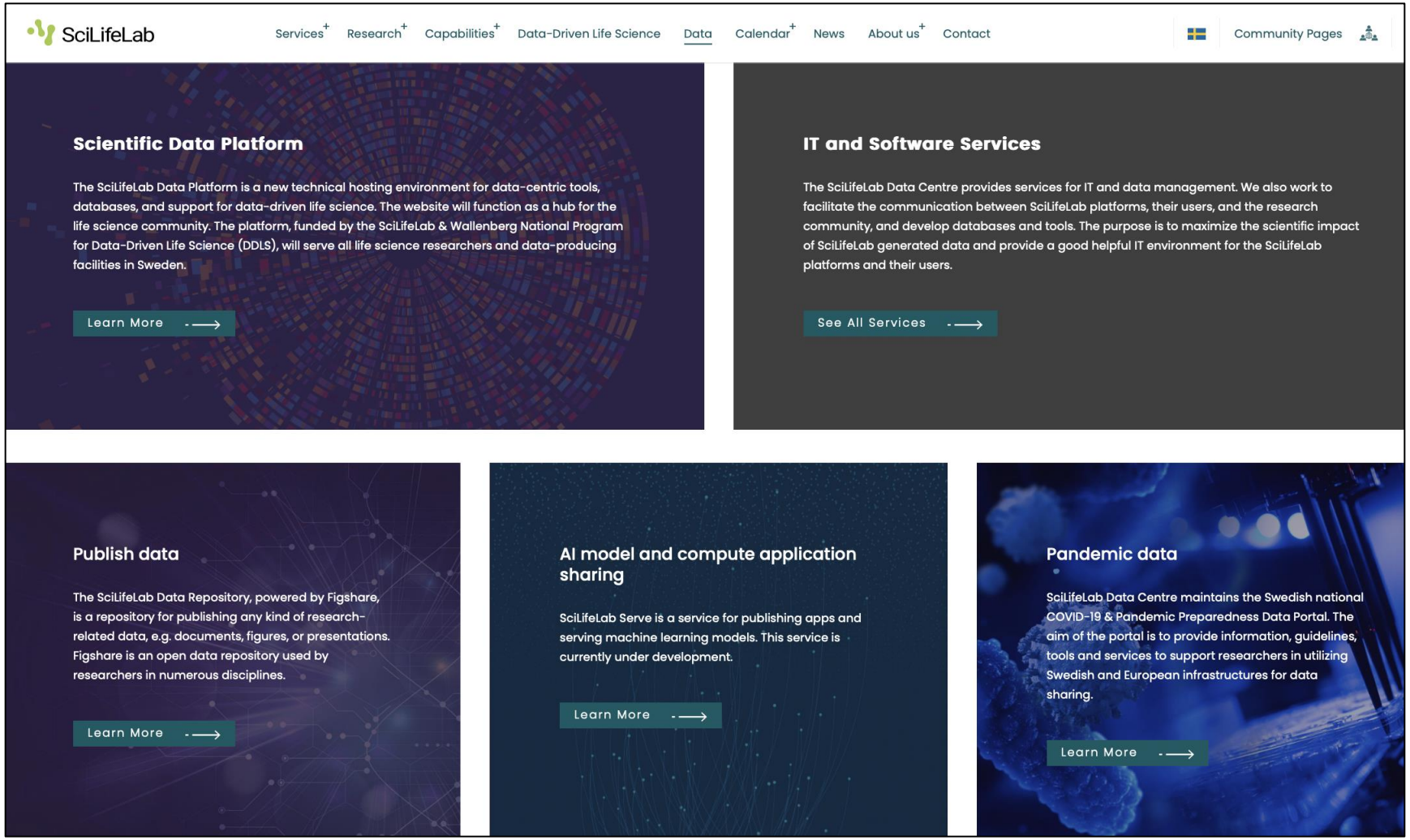
netherlands eScience center

SciLifeLab

Credit: Chris Erdmann

researchdata.se

Contact Data Centre



https://www.scilifelab.se/data

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...and catch us on Slack!