

PLOS and SciLifeLab Webinar

SciLifeLab Open Science Initiative

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3 April 2025

Open Science Now!



Open science now!

Scientists need to share. That's the premise presented in this [2011 TED Talk: Open Science Now!](#) by Michael Nielsen, a quantum physicist turned writer who sees the need for a second revolution of open science that translates to the data science world. Using the Polymath Project as an example, Nielsen describes how the online collaboration of mathematicians across the world through a blog site resulted in the resolution of a complex mathematical problem in a matter of 37 days—something that otherwise may have taken years.

Due to today's available technologies, Nielsen sees incredible potential for immediate global collaboration that could advance science at a rate never thought possible. He notes that the current scientific culture, where knowledge hoarding is so prevalent, is a barrier that needs to be overcome. Nielsen wants to propel an open science revolution by changing the values of individual scientists, so that they view the sharing of ideas as a responsibility and requirement of their roles.

UNESCO Open Science Definition



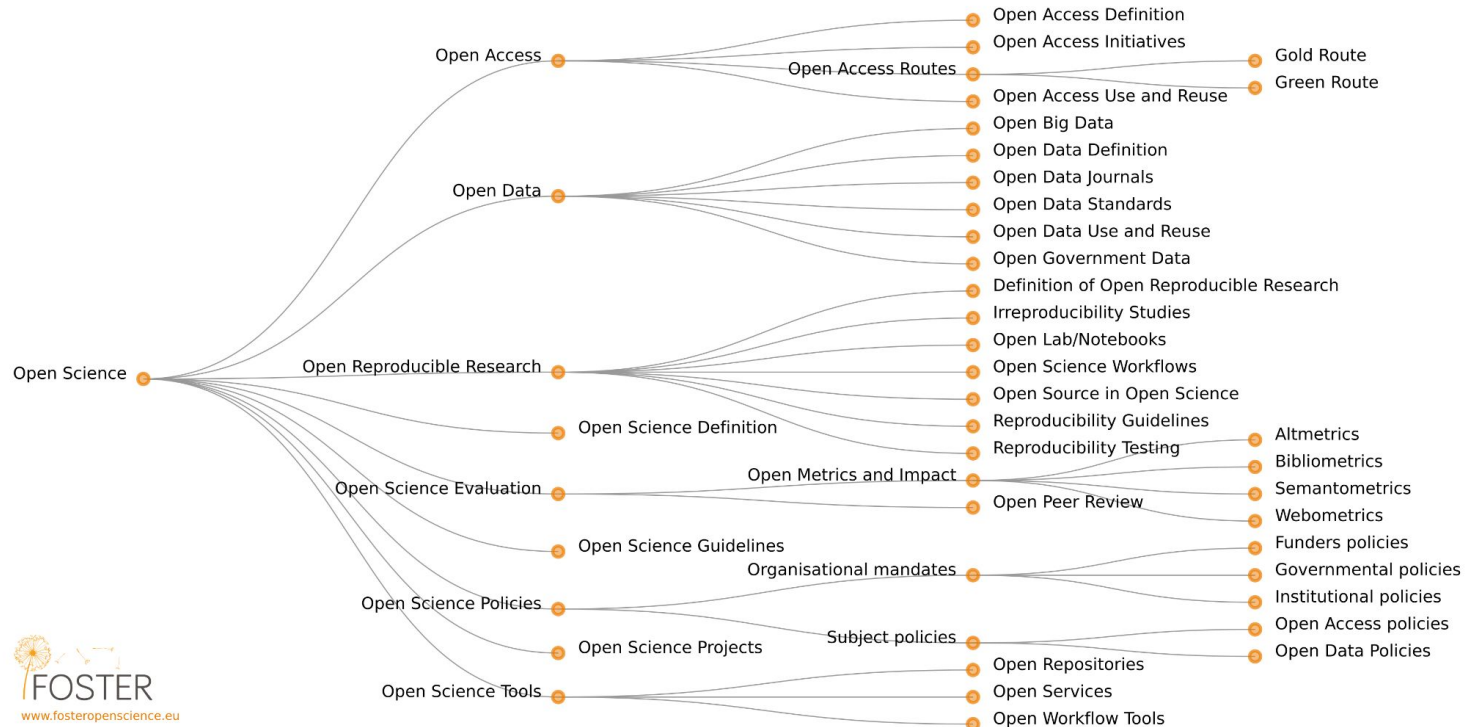
An **inclusive** construct that combines various movements and practices aiming to make multilingual scientific knowledge **openly** available, accessible and reusable for everyone, to increase scientific **collaborations** and **sharing** of information for the benefits of science and **society**, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors **beyond the traditional** scientific community.



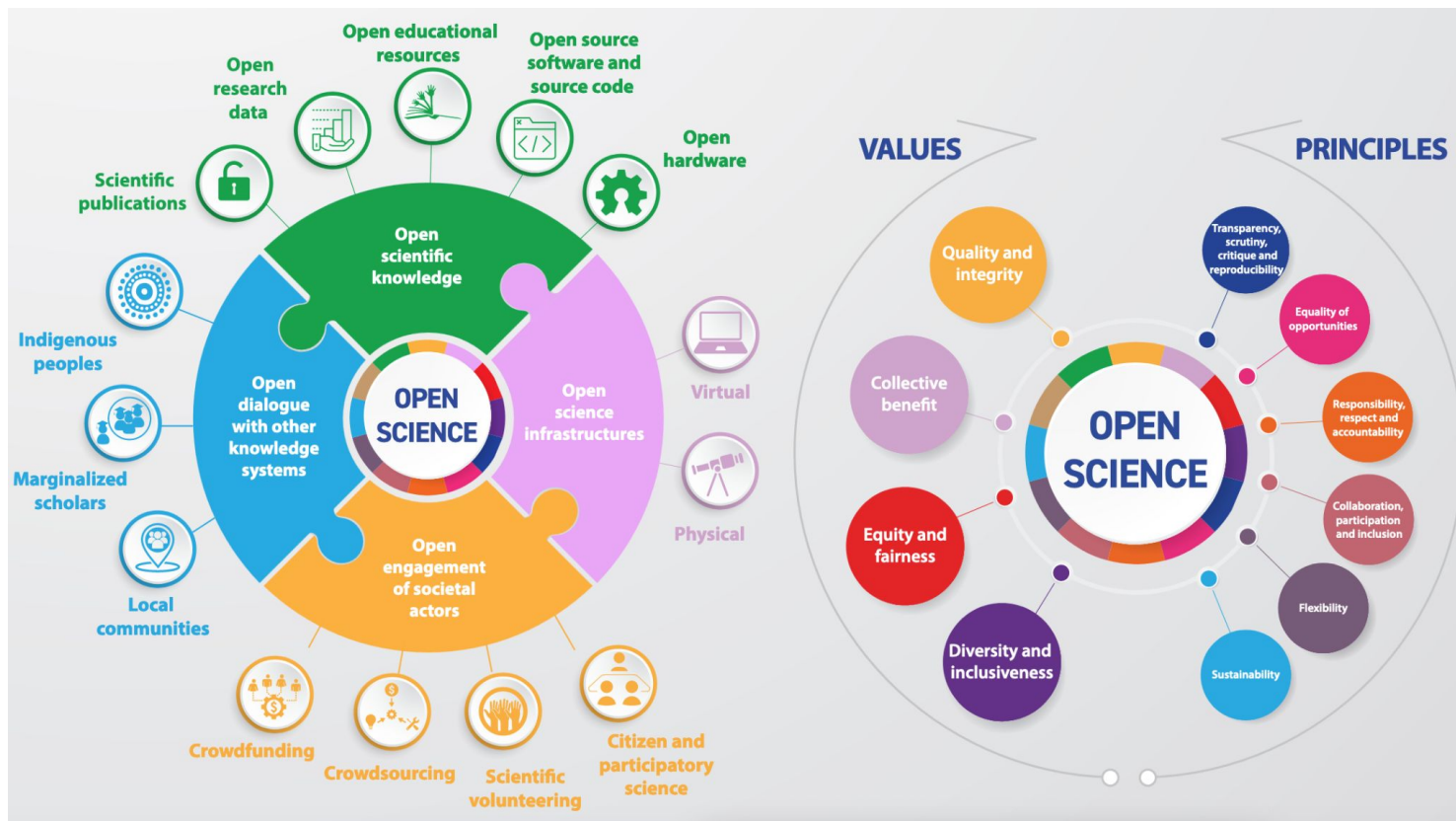
FOSTER - Open Science Taxonomy



Open Science Taxonomy



UNESCO Open Science Recommendations & Toolkit




National Guidelines for Open Science



National guidelines for promoting open science in Sweden

15 januari 2024

 [Open Science \(In English\)](#)

On behalf of the Swedish government, the National Library of Sweden (Kungliga biblioteket, KB) has developed national guidelines for open science. The guidelines are intended to provide support and guidance to actors in Sweden who have an important role to play in the transition to open science.



- **Open Access to Scholarly Publications:** Research publications freely available without any subscription or payment barriers
- **Open Access to Research Data:** Availability/accessibility of research data for reproducibility, to further scientific inquiry
- **Open Research Methods:** Transparency of research methodologies to facilitate replication and validation of research findings
- **Open Educational Resources:** Freely accessible educational materials to enhance learning and teaching practices
- **Public Engagement in Science:** Public, community, citizen science to increase public understanding and trust in science
- **Infrastructures Supporting Open Science:** Develop/support infrastructures for open science ecosystem, including repositories and data management systems

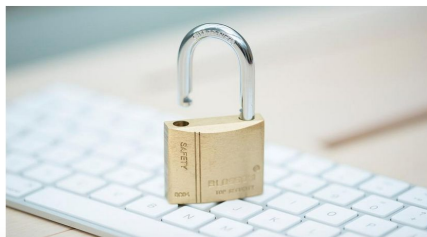


National guidelines for promoting open science in Sweden

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Open Access to Publications, Data, Methods, Educational Resources, Public Engagement in Science, Infrastructures Supporting Open Science

Swedish Research Council Open Data by 2026

Vision: As open as possible, as closed as necessary

The national goal is that the transition to open access to research data shall be fully implemented no later than 2026.

This is the Swedish Research Council's vision:

- Research data that is produced by publicly funded research should be made accessible according to the principle: "as open as possible, as closed as necessary". Open access to research data is part of the transition to an open science system.
- An assessment of the opportunities to make data openly accessible is a natural part of the research process.
- A long-term national coordinating organisation to promote and support open access to and the usability of research data.
- Research infrastructures support open access to research data.
- Fully developed incentive systems that support the transition to open access to research data have been established.

SciLifeLab Data Policy

Examples of potential activities motivated by this Data Policy, that may be developed in the future:

National platforms - part of SciLifeLab infrastructure:







- Require supported projects to commit to FAIR data sharing, and maintain Data Management Plans (DMPs).
- Provide the support and tools necessary for user projects to adhere to FAIR data sharing, including providing platform specific meta-data required for reproducibility and data sharing.
- Make methods and software workflows publicly available.
- Operate in a way that ensures reproducibility and the ability to trace and audit projects.
- Make operational data publicly available when specified in SciLifeLab reporting requirements.

Coalition for Advancing Research Assessment

Our vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research. This requires basing assessment primarily on qualitative judgement, for which peer review is central, supported by responsible use of quantitative indicators.

Open Science Policy Comparisons (July 2023)



						
OA Required	✓	✓	✓	✓	✓	✓
Preprint Required	✓	X	X	X	X	✓
Data Sharing	✓	✓	✓	✓	✓	✓
Code Sharing	✓	✓	✓	✓	✓	✓
Materials/Resource Sharing	✓	X	X	X	X	X
Protocol Sharing	✓	X	X	X	X	X

Open Access on the Rise at SciLifeLab and in the Life Sciences



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Stockholm University: Open access in life sciences on the rise

08 Jul 2024 | [Network Updates](#) | [Update from Stockholm University](#)

These updates are republished press releases and communications from members of the Science|Business Network



90 percent of the articles from SciLifeLab in 2023 were published open access. There are obvious advantages in publishing open access, according to Christopher Erdmann, head of open science at SciLifeLab.

Open science is an important and integrated part of [SciLifeLab](#), the national research infrastructure for molecular biosciences in Sweden. The SciLifeLab Data Centre is located at Uppsala University, serving the entirety of SciLifeLab. Some of the staff at the Data Centre are distributed at other of the SciLifeLab sites, like the one in Stockholm hosted by Karolinska Institutet, Stockholm University and KTH Royal Institute of Technology. There are roughly 40-50 people working at the Data Centre with open science/data in some shape. For instance, there is a team of data stewards that collaborate with [National Bioinformatics Infrastructure Sweden \(NBIS\)](#) to provide data management services, IT/software developers maintaining and implementing data driven services to support the research in our community, and staff supporting data science at the various SciLifeLab nodes.

<https://sciencebusiness.net/network-updates/stockholm-university-open-access-life-sciences-rise>

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Subject Areas

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Animal Behavior and Cognition

Biochemistry

Bioengineering

Bioinformatics

Biophysics

Ecology

Epidemiology*

Evolutionary Biology

Genetics

Genomics

Paleontology

Pathology

Pharmacology and Toxicology

Physiology

Plant Biology

- Scholarly manuscripts made available before peer review (e.g., [bioRxiv](#), medRxiv, arXiv, OSF, Zenodo, also see [ASAPbio](#))
- Help w/ rapid dissemination, visibility, and feedback
- Open, versioned, and establish priority of discoveries
- Option of open peer review (e.g., [PREreview](#))

Additional Paths Towards Open



- Deposit final peer reviewed manuscript in institutional repository, Europe PMC/PMC, [Shareyourpaper.org](https://shareyourpaper.org)
- [Choose a license](#), Creative Commons Attribution 4.0 Generic License ([CC BY 4.0](#)) or an equivalent license and include the license in the paper/metadata/acknowledgement
- [Author Rights: Using the SPARC Author Addendum](#)
- Institutional support for open access publication charges (APCs)

Persistent Identifiers



A national persistent identifier research strategy

Delivering sector-wide cost savings through improved automation and technical integration.



Started 01 Jul 2019

Expected outcome:
Advice

> People ([ORCID iDs](#))

> Outputs ([Crossref](#) and
[DataCite](#) DOIs)

Grants ([Crossref grant DOIs](#))

Organisations ([ROR identifiers](#))

Projects ([RAiDs](#))

Open Science Indicators and Monitoring



ABOUT PRINCIPLES TECHNICAL SPECIFICATIONS NEWS MONITORS CONTACT

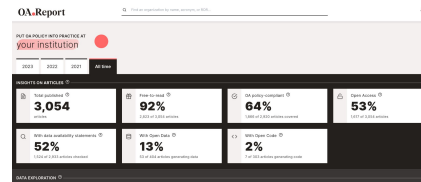
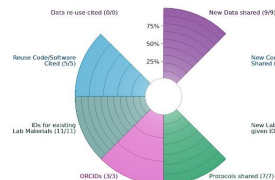
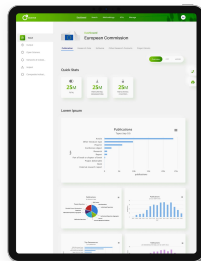


Open science monitoring initiative (OSMI)

OSMI brings together institutions and individuals involved in monitoring open science. OSMI aims to encourage the adoption of open science monitoring principles and to promote their practical implementation.

After being debated during the workshop at Unesco and subsequently reviewed online by more than 20 experts, the principles are now being submitted to Unesco for approval.

MORE INFORMATION →



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




Written by Lauren Cuthbert, Lindsay Morton, and Jon Weylandt
Open Science is on the rise. We can infer as much from the proliferation of Open Access publishing options, the steadily growing trend in better practices, the gradual rollout of new national, institutional, or funder policies.

Examples: UNESCO Open Science Monitoring Initiative, OpenAire, OA.Report/DataSeer.AI, PLoS

Improve Discovery and Accessibility



 **Europe PMC**

AboutToolsDevelopersHelp

Europe PMC plus

Do data resources managed by EMBL-EBI and our collaborators make a difference to your work?
If so, please take 10 minutes to fill in our survey, and help us make the case for why sustaining open data resources is critical for life sciences research.
[Take survey](#)

Search life-sciences literature (44 087 585 articles, preprints and more)

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SearchSave & create alert

Advanced search

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☐ Research articles (32 896)

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☐ Preprints (1 200)

☐ Books & documents (10)

1-25 of 51 765 results

Sort by: ☒ Relevance ☐ Times cited ☐ Date

1 2 3 Next ...

Cerebrospinal fluid α -synuclein adds the risk of cognitive decline and is associated with tau pathology among non-demented older adults.
Liu W, Li W, Liu Z, Li Y, Wang X, Guo M, Wang S, Wang S, Li Y, Jia J
Alzheimers Res Ther, 16(1):103, 10 May 2024
lower α -synuclein group (α -synuclein-L, n = 245) and a higher α -synuclein group (α -synuclein-H, n = 86... disorders α -synuclein-L Lower level of α -synuclein α -synuclein-H Higher level of α -synuclein GSEA Gene
Cited by: 0 articles | PMID: 38725083 | PMCID: PMC11084056

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The background is a dark blue field filled with glowing, curved lines in shades of purple and white. Scattered throughout are binary digits (0s and 1s) and small, pixelated patterns, creating a sense of digital motion and data flow.

Data and Code Accessibility

Open Access, Data/Software Availability

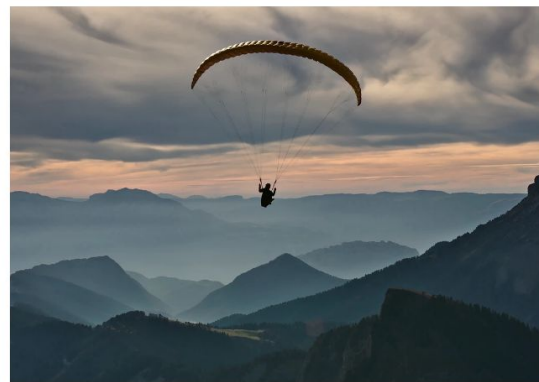


849 SciLifeLab Publications in 2023 ([Dimensions](#))

- 95% Open Access (40% Gold vs 29% Green)
- 86% w/ CC-BY License (for Gold)
- 47% w/ “Data Availability” (20% w/ available “upon request”)
 - Other Challenges: No Links/Citations, References to Uncitable Supplements...

Avoid parachuting into data/software and do more to guide them

Preserve the data/software via a repository (e.g., [Zenodo](#)) and cite



Data Available Upon Request



Data Availability Statement

Research data used in this article are available from the corresponding author on request.

Availability Statement Templates



The [type of data] data used for [brief context, description] in the study are available at [repository, source name] via [DOI, persistent identifier link] with [license, access conditions] [in-text citation in References]

[Version number] of the [software name] used for [brief context, description of what the software was used for] is preserved at [DOI, persistent identifier link], available via [license type, access conditions] and developed openly at [software development platform link]. [in-text citation in References]

Data & Software Shared



Data availability

All primary data associated with each figure has been deposited in a repository; most can be found at <https://doi.org/10.5061/dryad.3tx95x6j7>. Quantitation data of the blots in Figure 3–figure supplement 4 (for the bar graphs in Figures 3C and 3D) can be found at doi (10.5281/zenodo.7057419). Analysis presented in Figure 8–figure supplement 1 can be found at <https://doi.org/10.5281/zenodo.7108943>. All code is available at https://github.com/PfefferLab/Vides_et_al_2022 (copy archived at <https://swh.1:rev:2b50525ee1d48790466d35222956f16615ae96e8>).

The following data sets were generated

Vides EG, Pfeffer SR (2022) **Dryad Digital Repository** Data from: A feed-forward pathway drives LRRK2 kinase membrane recruitment and activation. <https://doi.org/10.5061/dryad.3tx95x6j7>

Limouse C, Vides EG, Adhikari A, Pfeffer SR (2022) **Zenodo** PfefferLab/Vides_et_al_2022: v1.0. <https://doi.org/10.5281/zenodo.7108943>

Lis P, Alessi DR (2022) **Zenodo** Figure 3–Figure Supplement 4 of the paper 'A Feed-forward Pathway Drives LRRK2 kinase Membrane Recruitment and Activation'. <https://doi.org/10.5281/zenodo.7057419>

<https://elifesciences.org/articles/79771>

Citing Data/Software



DOI Citation Formatter

Paste your DOI:

For example 10.1145/2783446.2783605

Select Formatting Style:

Begin typing (e.g. Chicago or IEEE.) or use the drop down menu.

Select Language and Country:

Begin typing (e.g. en-GB for English, Great Britain) or use the drop down menu.

Format

- Include a bracketed description with your data/software citation ([Data set], [Computer software])
- Use DOI Citation Formatter
- The DOI and bracketed description allow the data/software to be indexed in Crossref/DataCite
- This improves discovery and credit for the data/software

Vides, E. G., Adhikari, A., Chiang, C. Y., Lis, P., Purlyte, E., Limouse, C., Shumate, J. L., Spinola-Lasso, E., Dhekne, H. S., Alessi, D. R., & Pfeffer, S. R. (2022). A feed-forward pathway drives LRRK2 kinase membrane recruitment and activation. In eLife (Vol. 11). eLife Sciences Publications, Ltd. <https://doi.org/10.7554/elife.79771>

Resource Identification



Research Resource Identifiers (RRIDs)
Resources (e.g., cell lines, transgenic models, plasmids/clones, antibodies, and other reagents) identification, discovery, and reuse.

Example Identifier: Antibody:
[RRID:AB_9075](#) *Materials & Methods > Recommended Citation: (Millipore Cat# AB1542, RRID:AB_90755)*

[Find RRIDs at SciCrunch](#) (registry for tracking/credit) and
[Add a Resource](#)

The screenshot shows the RRID Portal interface. At the top, there's a navigation bar with 'RRID Portal' and an 'ABOUT' link. Below this is a dark blue header for the 'Resource Summary Report' with buttons for 'New Search' and 'Previous Search Results'. The breadcrumb trail reads: Home / Resource Reports / Antibodies / Resource Summary Report. The main content area is titled 'Antibody Name' and includes a notice: '*NOTICE: Multiple vendors found, please select your record: Millipore - AB1542'. The antibody name is 'Sheep Anti-Tyrosine Hydroxylase (TH, Tyrosine Monooxygenase) Polyclonal antibody, Unconjugated'. Below this is the RRID:AB_90755 and a PDF icon. On the right, there are links for 'PDF REPORT' and 'HOW TO CITE'. A section titled 'Antibody Information' provides the URL (http://antibodyregistry.org/AB_90755), proper citation (Millipore Cat# AB1542, RRID:AB_90755), target antigen (Tyrosine Hydroxylase), and host organism (Sheep).

RRID Portal

ABOUT

Resource Summary Report

New Search Previous Search Results

Home / Resource Reports / Antibodies / Resource Summary Report

Antibody Name *NOTICE: Multiple vendors found, please select your record: Millipore - AB1542

Sheep Anti-Tyrosine Hydroxylase (TH, Tyrosine Monooxygenase)

Polyclonal antibody, Unconjugated

RRID:AB_90755

PDF REPORT HOW TO CITE

Antibody Information

URL: http://antibodyregistry.org/AB_90755

Proper Citation: (Millipore Cat# AB1542, RRID:AB_90755)

Target Antigen: Tyrosine Hydroxylase

Host Organism: Sheep

Sharing Protocols



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operational procedures

- Repository for step-by-step detailed protocols that are indexed (i.e. searchable on the web)
- A platform to organize, exchange, and keep method details up to date
- Allows for versioning tracks who is viewing, exporting, bookmarking these protocols
- Can use this platform to register protocols and cite in methods section of your paper
- Introduction to protocols.io ([video](#))

The background is a dark blue field filled with glowing, out-of-focus elements. It features numerous thin, curved lines in shades of light blue and white, some of which are thicker and more prominent. Scattered throughout are small, bright orange and yellow dots, as well as faint, blurry patterns that resemble binary code (0s and 1s) or digital data streams. The overall effect is one of dynamic, high-tech energy.

Additional Information: Initiatives and Contact



Where to get help?

Data (and Open Science) Team @ SciLifeLab:

datacentre@scilifelab.se (or me directly
christopher.erdmann@scilifelab.uu.se)

Your university/research library, research computing/services

Thank you!



Vetenskapsrådet



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