



# **SciLifeLab's Open Science Unit: A Roadmap for Advancing and Supporting Open Science and FAIR Principles Across a Life Sciences Organisation and Beyond**

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18 October 2024

The background is a dark blue, abstract digital space. It features numerous glowing white and light blue lines that curve and swirl, creating a sense of motion and depth. Scattered throughout are strings of binary code (0s and 1s) in various colors, including white, light blue, and orange. The overall aesthetic is futuristic and data-oriented.

# SciLifeLab, Data Centre Overview



# What is SciLifeLab?

Founded in 2010 by Karolinska Institutet, KTH Royal Institute of Technology, Stockholm University and Uppsala University

National hub **enabling** life science research that would otherwise not be possible

Government appointed mission as a **national research infrastructure**

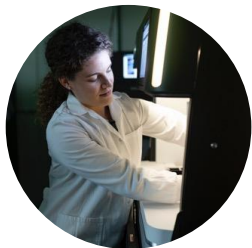
**Research community** gathering scientists across universities and disciplines

Today, activities at **all major Swedish universities** with sites launched in Linköping, Lund, Gothenburg and Umeå

... and collaborations with healthcare, industry, other governmental agencies and international organizations



# Areas of activities



## Provide excellent and impactful life science infrastructure

10 service areas and 40 units  
1,600 users and 3,500 projects yearly  
600 technology experts



## Strengthen research communities, capabilities, and global partnerships

300 group leaders across all sites  
Capabilities: Precision Medicine, Pandemic Laboratory Preparedness, Planetary Biology  
Drug Discovery & Development  
International collaborations e.g. EMBL



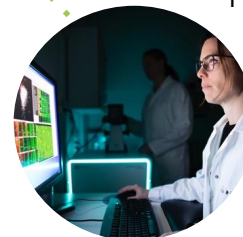
## Facilitate the transformation of life science data into knowledge

SciLifeLab & Wallenberg Program for Data-Driven Life Science (DDLs)  
Computational and data science base for open and FAIR data sharing  
AI and data science expertise in life science



## Attract scientific excellence and provide advanced training

SciLifeLab and DDLs Fellows program  
Training hub  
PhD and postdoc training



## Innovation and bridge-building for the benefit of society

Collaborations across sectors and borders, with industry and healthcare

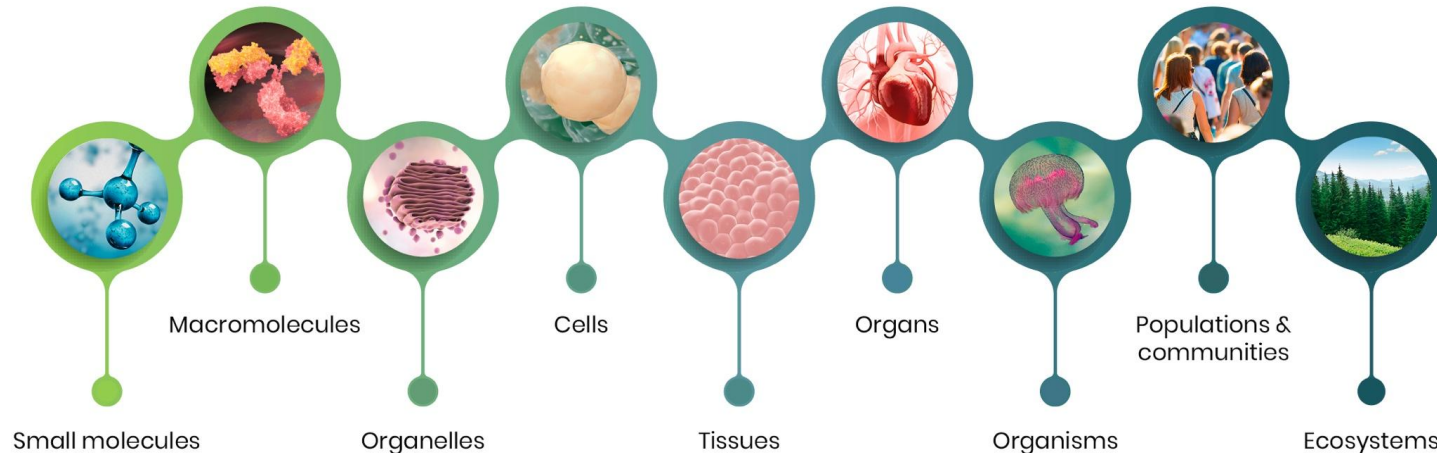


# Supporting projects from all areas of life science



SciLifeLab infrastructure:

- Provides **advanced technologies, unique instruments and expert-know how**
- **Open to all academic researchers** in Sweden on equal terms
- Open to industry, healthcare, other governmental agencies and international users (subject to capacity)
- Enables to study the molecular aspects of life **from the atomic to ecosystems scale**
- Applicable across **disciplines and research fields** in life science



# Infrastructure users and data



**~3 700**

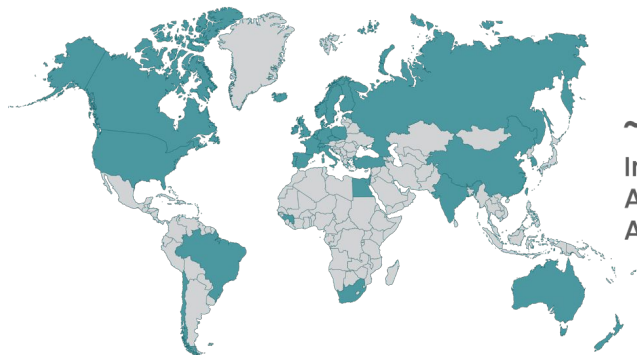
projects  
in 2022

**~1 800**

individual users  
in 2022

**>10 petabytes**

of data generated annually by  
the infrastructure (equal to  
10,000 terabytes)



**~100 international users**

In 2022, projects from Asia,  
Africa, Europe, Oceania, North  
America and South America.



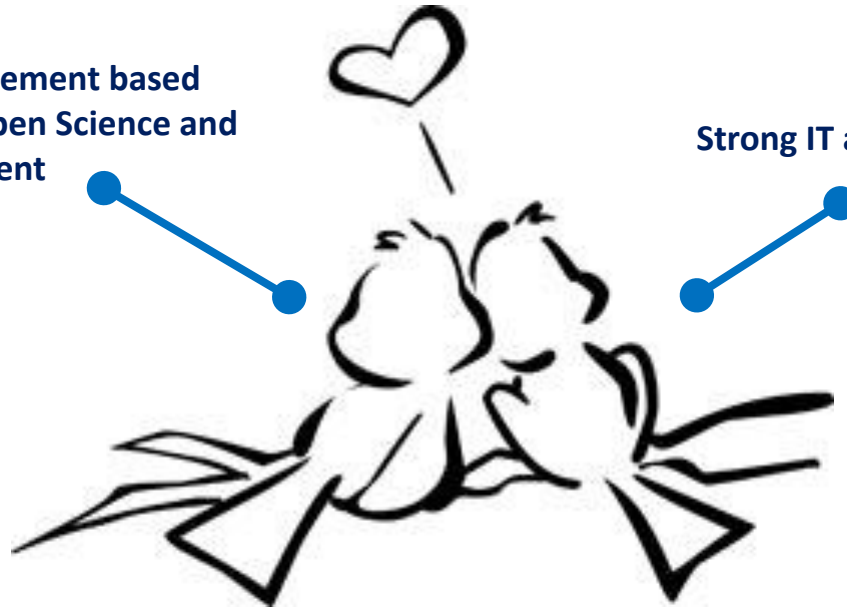
# SciLifeLab Data Centre Philosophy

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Research data management based on FAIR principles, Open Science and community engagement

Strong IT and e-infrastructure



# This is the SciLifeLab Data Centre



## Management and admin



**Johan Rung**  
Head of DC



**Anna Henriksson**  
Administrator



**Mathias Brännvall**  
Coordinator



**Lars-Owe Ivarsson**  
IT administration

## Open Science



**Chris Erdmann**  
Head of Open Science



**Matthias Hörtenhuber**  
System developer,  
nf-core



**Harshita Gupta**  
System developer,  
Training Hub



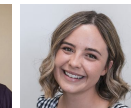
**Arthur Rosendahl**  
System developer



**Sonja Mathias**  
System developer



**Rickard Hammarén**  
System developer



**Suné Joubert**  
Project coordinator

## RDM Services and support



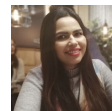
**Hanna Kultima**  
Vice Head of DC  
Head of Services & Support



**Elisabeth Sundström**  
Project leader



**Anna Asklöf**  
Data steward



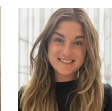
**Parul Tewatia**  
Data steward



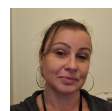
**Angela Fuentes Pardo**  
Data steward



**Katarina Öjefors Stark**  
Data steward



**Natasha Benzia Onsson**  
Data steward



**Joanna Sendacka**  
Data steward

## Associated staff



**Soumi Chaki**  
Application expert,  
NSC



**Xuan Gu**  
Application expert,  
NSC



**Wojtek Potrzebowski**  
Data science  
coordinator,  
LU

## IT systems and infrastructure



**Jonas Svensson**  
Head of IT systems  
and infrastructure



**Ann-Charlotte Sonnhammer**  
Information security & legal



**Konstantin Dossis**  
Solutions architect



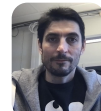
**Lars Rosenquist**  
Senior infosec  
advisor



**Erik Sjölund**  
IT specialist  
Kubernetes



**Ina Odén Österbo**  
Product Owner



**Valentin Georgiev**  
Systems Developer



**Alvaro Revuelta**  
Systems Developer  
CTO



**Jonas Hagberg**



**Aishling Cooke**  
Senior engineering  
manager



**Hans Åkerman**  
IT specialist  
Kubernetes

## Data science systems



**Ola Spjuth**  
Head of AI



**Liane Hughes**  
Project leader



**Senthilkumar Panneerselvam**  
System developer



**Arnold Kochari**  
Project leader



**Nikita Churikov**  
Data engineer  
(AI)



**Johan Alfredéen**  
Data engineer  
(AI)



**Hamza Imran Saeed**  
Data engineer (AI)



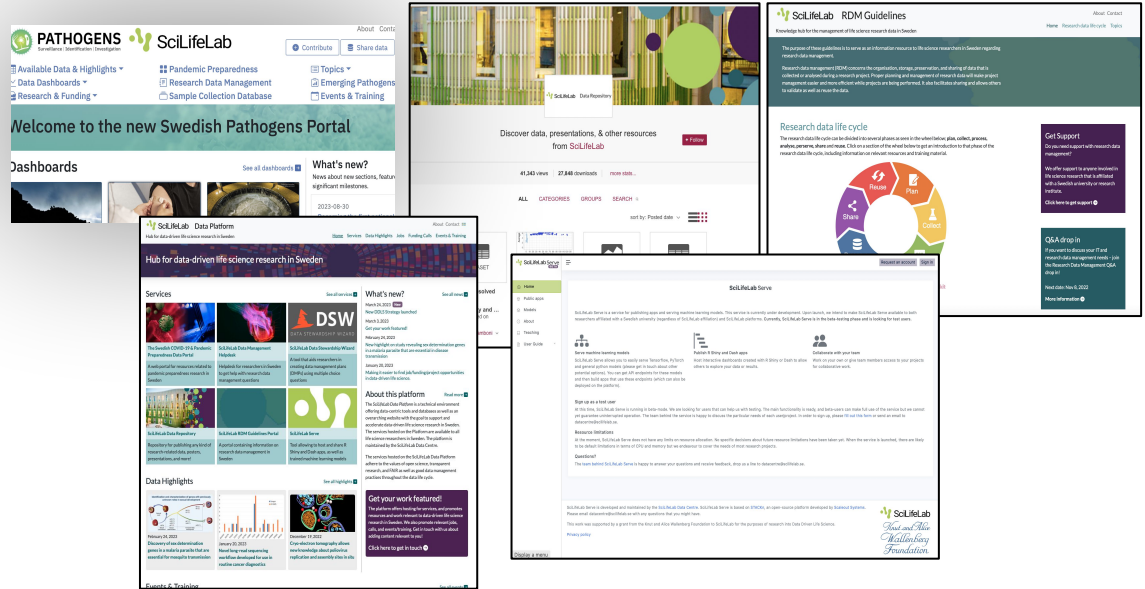
**Kazi Jahurul Islam**  
Systems Developer

18 nationalities  
23 M / 18 F  
40% PhD  
Developers / engineers / data stewards

# Data Centre develops and operates data services



- Pathogens Portal
- RDM Services & Guidelines (NBIS)
- Data Stewardship Wizard
- Serve
- FAIR Storage
- Data Delivery System
- Nf-core
- Seminar Series / Events
- Collaborations: EMBL-EBI, VIB, CSC, CERN, SDSC...





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# Open Science Drivers, Monitoring, Policy, Guidance



# UNESCO Open Science Definition

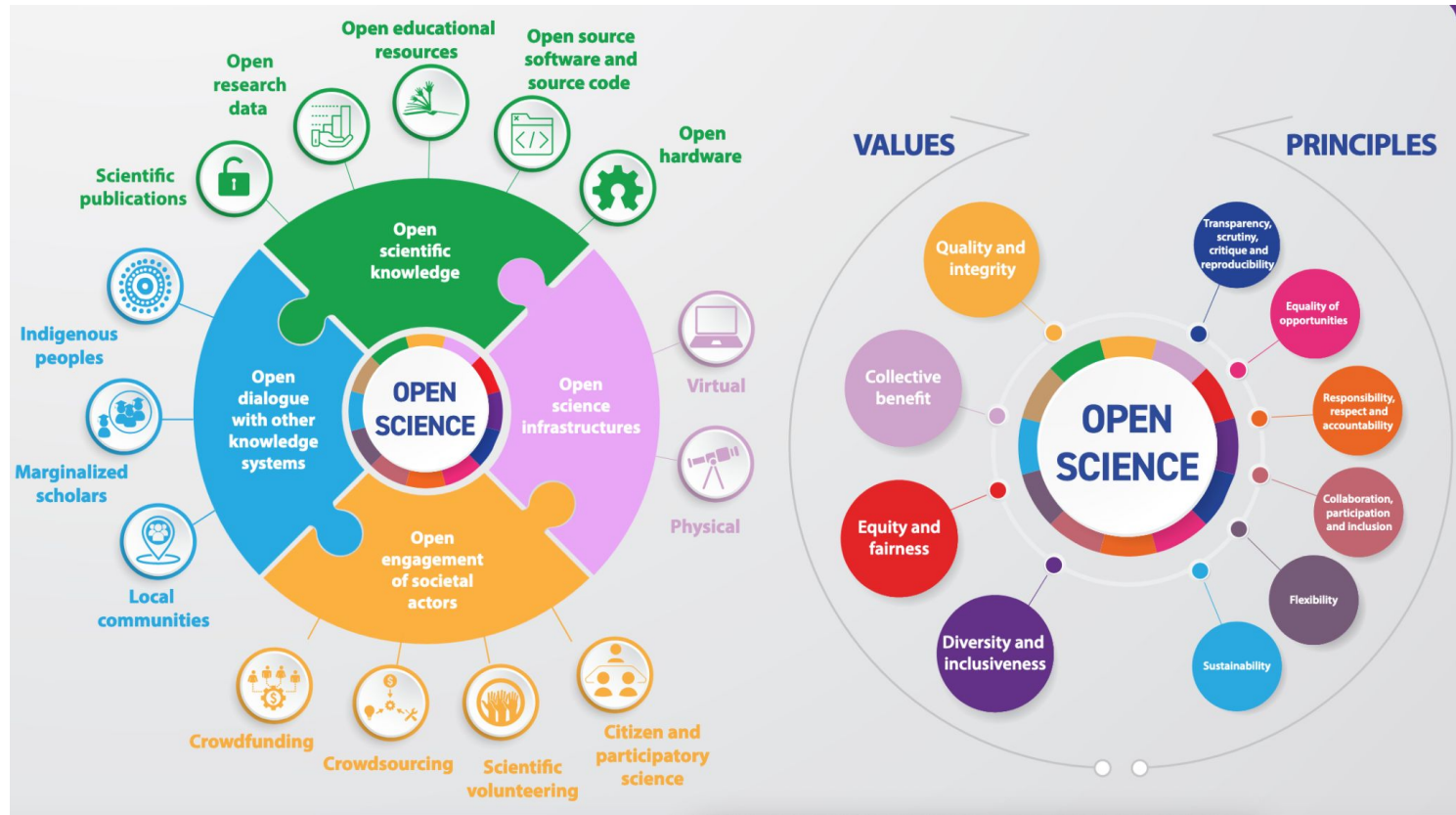
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An **inclusive** construct that combines various movements and practices aiming to make multilingual scientific knowledge **openly** available, accessible and reusable for everyone, to increase scientific **collaborations** and **sharing** of information 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.



# UNESCO Open Science Recommendations & Toolkit





## 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.

# 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

# 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

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SciLifeLab board no. 56, 220309  
Appendix 3

## SciLifeLab Data Policy (version 1.1.)

As the national infrastructure for life science and operator of the large life science research program (KAW-funded Data Driven Life Science, DDLS), SciLifeLab has a leading role in shaping the future of research data practices. In line with this responsibility, we hereby express our firm commitment to the values of 1) Open Science, 2) Transparent research, and 3) FAIR (Findable, Accessible, Interoperable, Reusable) principles as described in the following documents:

<https://www.scilifelab.se/wp-content/uploads/2022/06/SciLifeLab-data-policy.pdf>



# SciLifeLab Data Policy

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*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.

<https://www.scilifelab.se/wp-content/uploads/2022/06/SciLifeLab-data-policy.pdf>

# Open Science Policy Comparisons (July 2023)



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

# 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

December 12, 2022 / [PLOS](#) / [Open Code](#) [Open Data](#) [Open Science](#) [Open Science Indicators](#) [Preprints](#)



Written by Lauren Cadwallader, Lindsay Morton, and Iain Hrynaszkiewicz

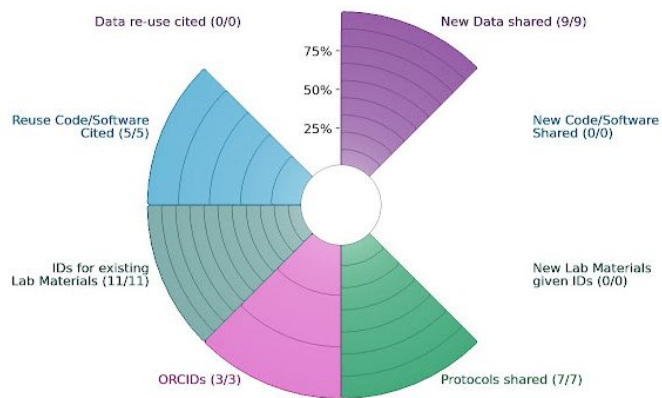
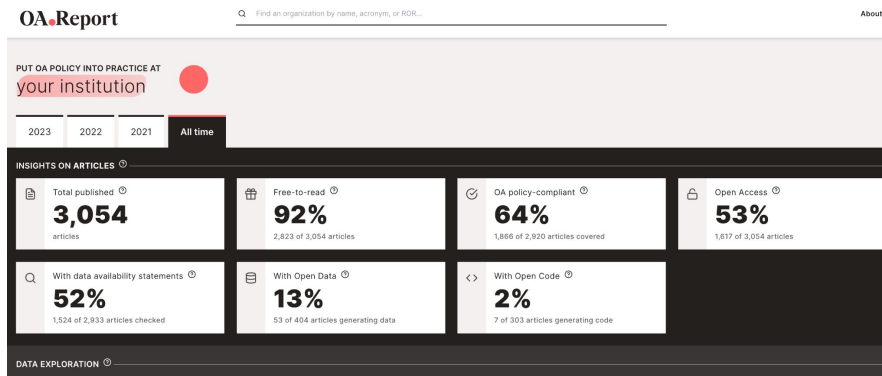
Open Science is on the rise. We can infer as much from the proliferation of Open Access publishing options; the steady upward trend in bioRxiv postings; the periodic rollout of new national, institutional, or funder policies.

Examples: UNESCO Open Science Monitoring Initiative, PLoS

# Monitoring Open Science and FAIR



- Dashboard that tracks SciLifeLab open and FAIR research outputs (publications, data, software, protocols, etc.)
- Mining and indexing service to improve discovery of these outputs (e.g., Europe PMC)



**Europe PMC** About Tools Developers Help 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.  
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synuclein

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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  $\alpha$ -synuclein group ( $\alpha$ -synuclein-L, n = 245) and a higher  $\alpha$ -synuclein group ( $\alpha$ -synuclein-H, n = 86... disorders  $\alpha$ -synuclein-L Lower level of  $\alpha$ -synuclein  $\alpha$ -synuclein-H Higher level of  $\alpha$ -synuclein GSEA Gene Cited by: 0 articles | PMID: 38725083 | PMCID: PMC11084056  
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# FAIR & Persistent Identifiers (PIDs)



## FAIR Guiding Principles (GO FAIR)

Meant to **improve the Findability, Accessibility, Interoperability, and Reuse** of digital assets.

Emphasise **machine-actionability** (i.e., the capacity of computational systems to find, access, interoperate, and reuse data with none or minimal human intervention) to assist with the computational nature of research.

### 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](#))

Identifiers assist with the exchange of metadata

# State of FAIR



 National Institute of Allergy and Infectious Diseases

## Key Insights from the Preliminary NIAID Landscaping Report

Summary & Strategic Recommendations from GO FAIR US  
Presented July 2024

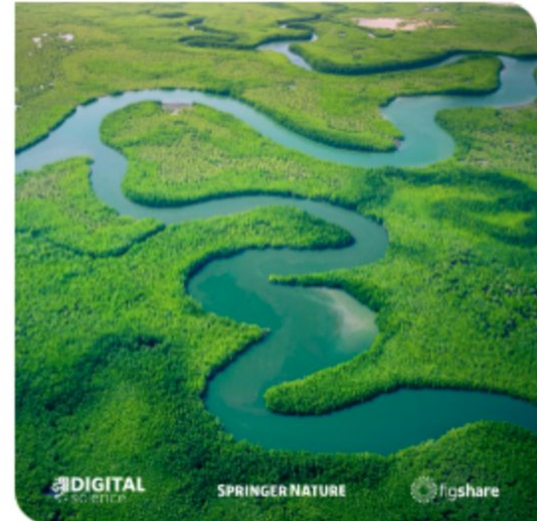
A Digital Science Report

November 2023

## The State of Open Data 2023

The longest-running longitudinal survey and analysis on open data.

With opening remarks from Springer Nature's CEO, Harsh Jagadeesan, and Digital Science's CEO, Daniel Hoak. Authors Mark Hahné, Graham Smith, Niki Scapellato, Henning Schoenberger and Laura Day.



 DIGITAL  
science

 SPRINGER NATURE

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# Community of Practice

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A group of people that collaboratively work with SciLifeLab and the Data Centre to tackle challenges together ranging from developing systems to disseminating best practices.

Forms of participation can range from providing feedback on new feature via Slack to joining a webinar to speak about research aspects of a service.

We will recruit roughly 20 community members, from diverse backgrounds (e.g., early career, international, infrastructure developers) with the hope of growing the community over time.

Our hope is to make this a prestigious role similar to being a member of a review board and where there is some form of compensation.

Image from -  
<https://www.swoopanalytics.com/blog/building-communities>

The background is a dark blue, almost black, space filled with glowing white and light blue lines that curve and swirl, creating a sense of depth and movement. Scattered throughout are small, glowing binary digits (0s and 1s) and some faint, illegible text fragments, suggesting a digital or data-driven environment.

# Accessibility of Publications

# 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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# 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

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## Data Availability Statement

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



# Availability Statement Templates

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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

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## 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](https://github.com/PfefferLab/Vides_et_al_2022) (copy archived at <https://swh:1:rev:2b50525ee1d48790466d3522956f16615ae96e8>).

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.

- 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>

# Improve Discovery and Accessibility



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# Importance of Data Management, Choosing a Repository

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Data Stewardship Wizard:

<https://dsw.scilifelab.se/>

Resources for data management (including repositories):

<https://data-guidelines.scilifelab.se/resources/>

SciLifeLab Data Repository:

<https://figshare.scilifelab.se/>

Contact:

[data-management@scilifelab.se](mailto:data-management@scilifelab.se)

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# Supporting and Sustaining Research Software



# EVERSE, ReSA, Steps Forward



**ADORE**  
SOFTWARE

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## 2024 International Research Software Funders Workshop

**Towards a monitoring framework to benchmark the ADORE software recommendations and improve the sustainability of research software**

Save the dates: September 11-13, 2024, in Uppsala, Sweden

The SciLifeLab Data Centre and the Research Software Alliance (ReSA) are hosting an international workshop in Uppsala **September 11-13, 2024**. And the European Virtual Institute for Research Software Excellence (EVERSE) is hosting a satellite workshop on **September 10** in Uppsala (and online).



**National guidelines  
for promoting open  
science in Sweden**





## Research software is a critical part of research

The [Amsterdam Declaration on Funding Research Software Sustainability](#) is setting the future international agenda and comprehensively changing the way funders deal with research software.

[GET INVOLVED](#)

[Read the Declaration](#)



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Additional Information:  
Web Presence and Contact

# Open Science Roles, Online Presence



- Currently building team (roles in Open Science Communities, Metrics, Software, FAIR Metadata, Semantic Technologies)
- Planning to set up a help desk (and resources) for SciLifeLab, Life Sciences community

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## Open Science at EMBL

For a positive culture change in life science research

[Home](#) [Open Science Guide](#) [What We Do](#) [Who We Are](#)

### We're dedicated to making science open and accessible to the global scientific community.

We aim to improve societal outcomes from EMBL's scientific programme through openness, transparency, and the open publication of results in the form of research articles, software and data.

EMBL's databases and software are freely available to the scientific community wherever possible, and we encourage open access publication.

EMBL's Open Science Policy covers public availability of research outputs and services, research assessment and fair attribution of credit for EMBL researchers.

[EMBL's Open Science policy](#)

*"Open science has always been part of the fabric of EMBL. I am very pleased that we can announce this new policy, at a time when the world needs to share knowledge and accelerate research more than ever before."*

**Edith Heard**, Director General of EMBL in 2021 on the occasion of the release of the EMBL Open Science Policy

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## TALK OPENLY DEVELOP OPENLY

For open source practitioners committed to Open Source Program Offices (OSPO).

TODO is an open community of practitioners who aim to create and share knowledge, collaborate on practices, tools, and other ways to run successful and effective Open Source Program Offices and similar Open Source initiatives. TODO Group is formed by its [Community](#) participants and ambassadors, [OSPO Associates](#) and [General Members](#).

[ABOUT US](#)

# Questions?

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# Thank you!



Vetenskapsrådet



**[Visit us: scilifelab.se/data](https://scilifelab.se/data)**



Scilifelab-data-centre

@SciLifeLab\_DC

The background is a dark blue, almost black, space filled with glowing white and orange lines that curve and swirl, creating a sense of depth and movement. Scattered throughout are small, glowing characters, including binary digits (0s and 1s) and various symbols, giving the impression of a digital or data-driven environment.

# Appendix - Additional Slides - Open Science 101



The background is a dark blue, abstract digital space. It features numerous glowing white and light blue lines that curve and swirl, creating a sense of motion and depth. Scattered throughout are small, glowing binary digits (0s and 1s) and some faint, illegible text, suggesting a data stream or a complex network. The overall aesthetic is futuristic and technological.

# ORCID & Digital Presence

# ORCiD & Digital Presence



https://orcid.org/0000-0003-1374-6015

AuthorCarpentry | R Programming | Professional | Personal | GoToMeet.Me | Geographic access blo... | Adobe Document Clo...

## ORCID

Connecting Research and Researchers

6,865,856 ORCID IDs and counting. See more...

### Hugh P. Shanahan

**ORCID ID**  
@https://orcid.org/0000-0003-1374-6015

Print view

**Also known as**  
Hugh Shanahan

**Websites**  
Lab page

**Keywords**  
Computational Biology, Bioinformatics, FAIR Data

**Other IDs**  
Scopus Author ID: 7004258684

#### Biography

Hugh Shanahan has a background in Computational Biology, focussing on transcriptomics and metagenomics combined with a deep background in Computational and Theoretical Physics. He completed his PhD in 1994 in Lattice QCD and completed postdocs in Glasgow, Cambridge and Tsukuba before moving into Bioinformatics in 1999. In 2005 he joined the department of Computer Science at Royal Holloway, University of London where he is now Reader.

- Since 2015 he been a co-chair of the CODATA-RDA schools in Research Data Science that has delivered training in Data Science methods for researchers to students from approximately 40 countries. He is a member of the FAIRFAIR consortium which is focussed on the development of an overall knowledge infrastructure on academic quality data management, procedures, standards, metrics and related matters, based on the FAIR principles.

#### Employment (2)

Royal Holloway University of London: Egham, Surrey	2014-01-01 to 2017-12-31   Senior Lecturer (Computer Science)	Employment	Source: Hugh P. Shanahan	★ Preferred source
Royal Holloway University of London: Egham, Surrey	2005-01-01 to 2013-12-31   Lecturer (Computer Science)	Employment	Source: Hugh P. Shanahan	★ Preferred source

#### Education and qualifications (3)

University of Edinburgh: Edinburgh, Edinburgh	1991-10-01 to 1994-09-01   Ph.D. (Physics)	Education	Source: Hugh P. Shanahan	★ Preferred source
University College Cork: Cork, Cork	1990-10-01 to 1991-06-01   MSc (Experimental Physics)	Education	Source: Hugh P. Shanahan	★ Preferred source

ORCID - Unique, PID for researchers/authors which you can link to your publications, data, software, and more.

Stall, S., Specht, A., Amato, J. G., Corrêa, P. L. P., Curivil, F. A. L., David, R., Erdmann, C., et al. (2023). **Digital Presence Checklist**. Zenodo. <https://doi.org/10.5281/zenodo.7841734>

# How to link your ORCID w/ Crossref (for publications)



## How to add works to your ORCID iD using CrossRef


YouTube · Ebling Library · 30 Mar 2017



<https://www.youtube.com/watch?v=sfWP1tqHknI>

# How to link your ORCID w/ DataCite (for data, software, etc)



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Integrations from Registered Service Providers

Code Examples in GitHub

MORE DATACITE SERVICES

- DataCite Service Status
- DataCite Public Data File
- DataCite Citation Formatter
- DataCite Profiles
  - DataCite and ORCID**
  - ORCID Auto-Update
  - Troubleshooting Guide
- DataCite Statistics
- Data Citation Corpus

USAGE AND CITATIONS

- > Views and Downloads
- > Citations and References
  - Displaying Usage and Citations in your Repository

## DataCite and ORCID

DataCite provides Persistent Identifiers (DOIs) for all research outputs. ORCID provides Persistent Identifiers (ORCID iDs) for all researchers. The two organisations work closely together to identify research and connect it to the researchers that created it.

DataCite's integration with ORCID's API means it is quick and easy for researchers to link any works which have a DataCite DOI to their ORCID profile.

Here we describe the two ways in which your works with a DataCite DOI can be linked to your ORCID profile.

### What is a claim?

In DataCite, when a work (a DOI) is sent to an ORCID record via either of the methods outlined below, this is known as a "claim" and simply means a request has been sent to ORCID to connect a specific DOI to an ORCID profile. Failed claims will also be listed in the settings of your [Profiles](#) account.

## 1. ORCID Search & Link Wizard

The [ORCID Search & Link wizard](#) allows you to manually add your works to your ORCID record from DataCite Commons.

<https://support.datacite.org/docs/datacite-and-orcid>



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# Accessibility of Publications

# Preprints



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# bioRxiv

THE PREPRINT SERVER FOR BIOLOGY

Advanced Search

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

## Subject Areas

All Articles

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


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- 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
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- Institutional support for open access publication charges (APCs)

# Check your openness




 Europe PMC [About](#) [Tools](#) [Developers](#) [Help](#) [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](#)

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Advanced search

Free full text access 

Full text in Europe PMC (41 004)

Link to free full text (3 753)

Type 

Research articles (32 896)

Review articles (17 334)

Preprints (1 200)

Books & documents (10)

1-25 of 51 765 results


Sort by:  Relevance  Times cited  Date [1](#) [2](#) [3](#) [Next](#) ...

**Cerebrospinal fluid  $\alpha$ -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  $\alpha$ -synuclein group ( $\alpha$ -synuclein-L, n = 245) and a higher  $\alpha$ -synuclein group ( $\alpha$ -synuclein-H, n = 86... disorders - synuclein-L. Lower level of  $\alpha$ -synuclein  $\alpha$ -synuclein-H Higher level of  $\alpha$ -synuclein GSEA Gene  
Cited by: 0 articles | PMID: 38725083 | PMCID: PMC11084056  
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- Academic search/databases like [Europe PMC](#) are able to index openly accessible research and therefore curate and improve the discoverability, accessibility of it
- Search your profile/papers to see what level of openness you are and what publications are linked to data, software, etc.  
(See link your ORCID/publications feature)

The background is a dark blue, almost black, space filled with glowing white and orange lines that curve and swirl, creating a sense of motion and depth. Scattered throughout are strings of binary code (0s and 1s) and some faint, illegible text, suggesting a digital or data-driven environment.

# Preserving and Citing Software

# Release Code (GitHub), Preserve, and Cite w/ Zenodo



## Referencing and citing content

You can use third-party tools to cite and reference content on GitHub.

## Issuing a persistent identifier for your repository with Zenodo

To make your repositories easier to reference in academic literature, you can create persistent identifiers, also known as Digital Object Identifiers (DOIs). You can use the data archiving tool [Zenodo](#) to archive a repository on GitHub.com and issue a DOI for the archive.

### Tips:

- Zenodo can only access public repositories, so make sure the repository you want to archive is [public](#).
- If you want to archive a repository that belongs to an organization, the organization owner may need to [approve access](#) for the Zenodo application.
- Make sure to include a [license](#) in your repository so readers know how they can reuse your work.

- 1 Navigate to the [login page](#) for Zenodo.
- 2 Click **Log in with GitHub**.
- 3 Review the information about access permissions, then click **Authorize zenodo**.

The screenshot shows the Zenodo website interface. At the top, there is a blue header with the Zenodo logo, a search bar, and navigation links for 'Upload' and 'Communities'. The user's account is identified as 'zenodo@michael@fox.org'. Below the header, there is a breadcrumb trail: 'Home / Account / GitHub'. On the left side, there is a 'Settings' sidebar with options: Profile, Change password, Security, Linked accounts, Applications, Shared links, and GitHub (which is highlighted in blue). The main content area is titled 'GitHub' and features the text 'Software preservation made simple!' with a 'Connect' button. Below this, a message states: 'To get started, click "Connect" and we will get a list of your repositories from GitHub.'

# Software Journals (e.g., JOSS)



The Journal of  
Open Source Software

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The Journal of Open Source Software is a  
**developer friendly, open access journal**  
for research software packages.

Committed to publishing quality research software with zero  
article processing charges or subscription fees.

[Submit a paper to JOSS](#)[👉 Volunteer to review](#)[📖 Explore Papers](#)[📄 Documentation](#)[📄 Learn More](#)

# Software Citation Files (.CFF, GitHub)



## About CITATION files

You can add a CITATION file to your repository to help users correctly cite your software.

### About CITATION files

You can add a `CITATION.cff` file to the root of a repository to let others know how you would like them to cite your work. The citation file format is plain text with human- and machine-readable citation information.

Example `CITATION.cff` file:

```
cff-version: 1.2.0
message: "If you use this software, please cite it as below."
authors:
- family-names: "Lisa"
  given-names: "Mona"
  orcid: "https://orcid.org/0000-0000-0000-0000"
- family-names: "Bot"
  given-names: "Hew"
  orcid: "https://orcid.org/0000-0000-0000-0000"
title: "My Research Software"
version: 2.0.4
```



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# Resources and Protocols

# 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](#)

RRID Portal ABOUT ▾

## Resource Summary Report

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](#)

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Antibody Information ⓘ

URL: [http://antibodyregistry.org/AB\\_90755](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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## Bring structure to your research

A secure platform for developing and sharing reproducible methods.

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computational workflows

clinical trials

operational procedures

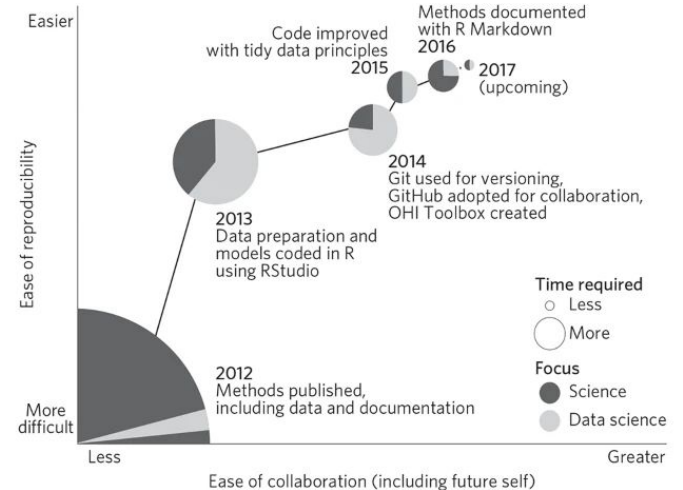
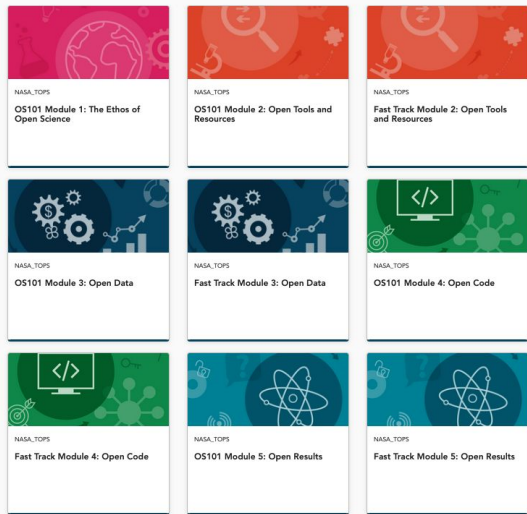
- Repository for step-by-step detailed protocols that are indexed (i.e. searchable on the web)
- A platform to organize, exchange, and keep method details up to date
- Allows for versioning tracks who is viewing, exporting, bookmarking these protocols
- Can use this platform to register protocols and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

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# Additional Sources



# TOPS Open Science 101, Turing Way, Our Path to Better Science (OpenScapes)



- <https://openscience101.org/>
- <https://the-turing-way.netlify.app/index.html>
- <https://www.nature.com/articles/s41559-017-0160>
- <https://openscapes.org/>