

# Forschungsdaten-Repositoryen

## Typen, Herausforderungen und Perspektiven

Heinz Pampel, Deutsches GeoForschungsZentrum GFZ

Open-Access-Tage 2012, Wien, 26.09.2012

# Agenda

- Hintergrund
- Forschungsdaten-Repositoryn
- re3data.org
- Vernetzung

# The Royal Society

## **Recommendation 1**

**Scientists should communicate the data they collect and the models they create, via methods that allow free and open access, and in ways that are intelligible, assessable and usable for other specialists in the same or linked fields wherever they are in the world. Where the data justifies it, scientists should make them available in an appropriate data repository. Where possible, communication with a wider public audience should be made a priority, and particularly so in areas where openness is in the public interest.**

The Royal Society. (2012). Science as an open enterprise. The Royal Society Science Policy Centre report 02/12. Retrieved from [http://royalsociety.org/uploadedFiles/Royal\\_Society\\_Content/policy/projects/sape/2012-06-20-SAOE.pdf](http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/sape/2012-06-20-SAOE.pdf)

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The Royal Society. (2012). Science as an open enterprise. The Royal Society Science Policy Centre report 02/12. Retrieved from [http://royalsociety.org/uploadedFiles/Royal\\_Society\\_Content/policy/projects/sape/2012-06-20-SAOE.pdf](http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/sape/2012-06-20-SAOE.pdf)

# EC: Empfehlung an die Mitgliedstaaten

## *E-infrastructures*

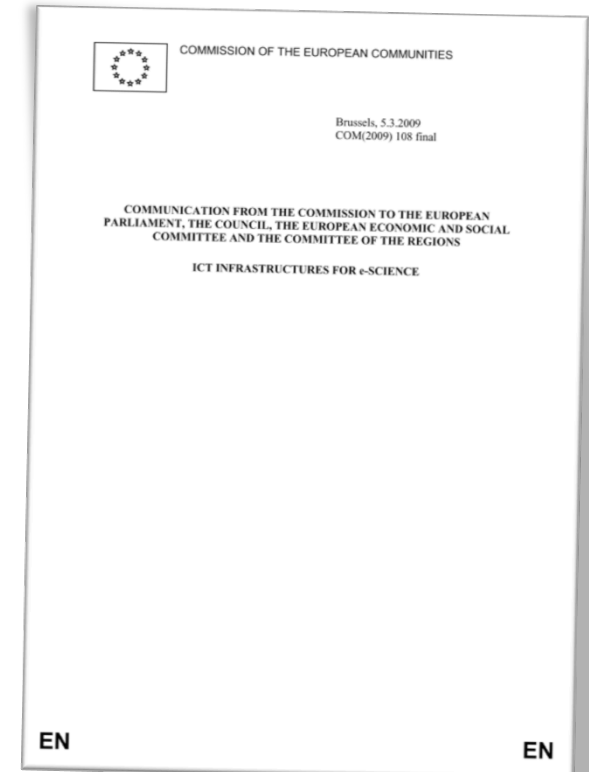
5. Further develop e-infrastructures underpinning the system for disseminating scientific information by:
  - Supporting scientific data infrastructures for dissemination of knowledge, research institutions and funding entities to address all stages of the data life cycle. These stages should include acquisition, curation, metadata, provenance, persistent identifiers, authorisation, authentication and data integrity. Approaches need to be developed to provide a common look and feel to data discovery across disciplines, thus reducing the learning curve required to achieve productivity;

European Commission. (2012). Commission Recommendation on access to and preservation of scientific information. C(2012) 4890 final. Retrieved from [http://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/recommendation-access-and-preservation-scientific-information\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/recommendation-access-and-preservation-scientific-information_en.pdf)

# Forschungsdaten-Repositoryen

- EC: ICT infrastructures for e-science

„The landscape of data repositories across Europe is fairly heterogeneous, but there is a solid basis to develop a coherent strategy to overcome the fragmentation and enable research communities to better manage, use, share and preserve data.“



European Commission. (2009). ICT infrastructures for e-science. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM(2009) 108 final. Retrieved from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0108:FIN:EN:PDF>

# Forschungsdaten-Repositoryen

The screenshot shows the NCBI GEO website. At the top left is the NCBI logo. In the center is the GEO logo with the text "Gene Expression Omnibus". Navigation links include "GEO Publications", "FAQ", "MIAME", "Email GEO", and "Login". A description of GEO is provided: "Gene Expression Omnibus: a public functional genomics data repository supporting submissions. Array- and sequence-based data are accepted. Tools are provided to explore experiments and curated gene expression profiles. [More information >](#)". Below this is a "GEO navigation" section with two main categories: "QUERY" and "BROWSE". The "QUERY" section includes links to "DataSets", "Gene profiles", "GEO accession", and "GEO BLAST", each with an input field and a "GO" button. The "BROWSE" section includes links to "DataSets" and "GEO accessions", with "GEO accessions" further branching into "Platforms", "Samples", and "Series".

GEO, <http://www.ncbi.nlm.nih.gov/geo/>

The screenshot shows the PANGAEA website. At the top is the "PANGAEA" logo. Below it is the tagline "Data Publisher for Earth & Environmental Science". The central feature is a globe logo with the PANGAEA name overlaid. Below the globe is a search bar with tabs for "All", "Water", "Sediment", "Ice", and "Atmosphere". A "Search" button is to the right of the search bar. Below the search bar are links for "Help", "Advanced Search", "Preferences", and "more...". At the bottom, there is a navigation menu: "About - Submit Data - Projects - Software - WDC-MARE - Contact". A Creative Commons license notice is at the very bottom: "This work is licensed under a Creative Commons License".

PANGAEA, <http://www.pangaea.de>

# Forschungsdaten-Repositoryen

## Scientific Drilling Database

Data from Deep Earth Sampling and Monitoring

- + Home
- + About SDDB
- + News
- + Data Publications
- + Catalogue
  - + Authors
  - + Dataset
  - + Research Programs
  - + Sampling Gear
  - + Analytical Parameters
- + Publication Process
- + Admin

GFZ POTSDAM icdp

### Dataset Description

Citation: Demory, Francois; Nowaczyk, Norbert; Witt, An  
Interrelation of down-core variations of the high  
for COND1-603 and COND1-605. *Scientific Drilling*  
/GFZ.SDDB.1003  
[Download Citation \(EndNote\)](#)

Title: Interrelation of down-core variations of the high  
for COND1-603 and COND1-605

Abstract: Down-core variations of the high-resolution magne  
been obtained for kasten and pilot cores from sit  
allowed the transfer of AMS 14C dating performe  
on kasten cores to the pilot cores subjected to p  
discrepancies in the magnetic susceptibility cur  
01-605 (Vydrino Shoulder) measured in 2001 an  
large peaks visible in the first measurement from  
after a 2-year-long storage. This is a first hint for  
chemically unstable greigite.  
[Show in Google Earth](#)

Related Publications:

- N. Fagel, L.Y. Alleman, L. Granina, F. Ha  
André, Vivianite formation and distribution  
Planet. Change 46 (2005), pp. 315-336. d

## The Bern Digital Pantheon Project

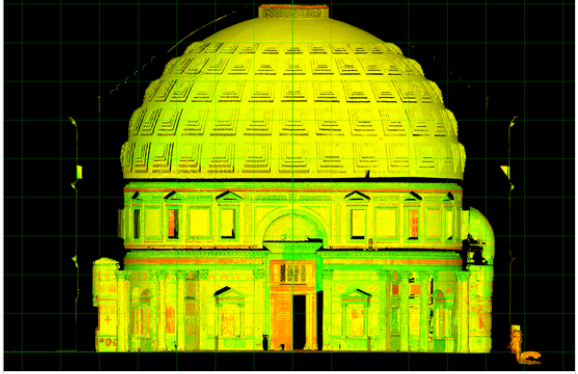
EXCELLENCE CLUSTER TOPOI HUMBOLDT-UNIVERSITÄT ZU BERLIN

Home The Building Research Publications The Team Repository Contact Search

You are here: Home » Repository » BDPP0019

### Repository

first previous Record 198 of 776 next last



**The Bern Digital Pantheon Project: Transverse cross-section, facing north**

The Bern Digital Pantheon Project: Transverse cross-section, facing north. In: Gerd Graßhoff, Markus Wäfler, Jon Albers and Christian Berndt (ed.): Digital Repository of the Bern Digital Pantheon Project. Bern 2009, BDPP0019 (Published online at: <http://www.digitalpantheon.ch/BDPP0019>).

BibTeX:

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timestamp = (2009.05.28),  
editor = {Graßhoff, Gerd and Wäfler, Markus and Albers,  
Jon and Berndt, Christian},  
address = (Bern),  
repository = (Digital Repository of the Bern Digital  
Pantheon Project)  
}
```

Usage of the repository

SDDB, <http://www.scientificdrilling.org>

BDPP, <http://www.digitalpantheon.ch>



# Forschungsdaten-Repositoryn

**PURDUE UNIVERSITY** | Purdue University Research Repository | PURR

Home Browse Content Projects Get Started Contact Us

You are here: Publications > Datasets > Phosphorus and Potassium Influence on Alfalfa ... > About

## Phosphorus and Potassium Influence on Alfalfa Nutrition

By Jeffrey J Volenec

Data from several studies on the influence of phosphorus and potassium nutrition on alfalfa. It includes numeric data such as yield, plant mass, plant counts, and tissue concentration of various nutrients

Listed in [Datasets](#)

Download (XLS)

Additional materials available

Version 1.0 - published on Feb 2011  
doi:10.5072/FK2NG4S08 - cite this

Abstract This is a master file of merged excel files with data from several studies the influence of phosphorus and potassium nutrition on alfalfa. It includes numeric data such as yield, plant mass, plant counts, and tissue concentration of various nutrients. Conventional wisdom states that plants that are poorly fertilized and do not have adequate phosphorus and especially low potassium will become winterkill. This study showed that plants did not necessarily die in winter with low potassium stress.

PURR, <http://research.hub.purdue.edu>

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN UNIVERSITÄTSBIBLIOTHEK UB

Suche:  Home | Browse | Erweiterte Suche | Hilfe

English

Anmelden | Registrieren

**Zitation:** Open Data LMU: Dohrmann, Martin; Göcke, Christian; Janussen, Dorte; Reitner, Joachim; Lüter, Carsten und Wörheide, Gert (2011): *Additional data to "Systematics and spicule evolution in dictyonal sponges (Hexactinellida: Sceptulophora) with description of two new species"*, doi:10.5282/ubm/data.36

- [Anderes \(Sequence data, structure & tree file\)](#)  
11Kb
- [Anderes \(Additional movie M1 Dive4\)](#)  
67Mb
- [Anderes \(Additional movie M2 Dive2\)](#)  
74Mb
- [Anderes \(Additional movie M3 Dive6\)](#)  
249Mb

DOI: <http://dx.doi.org/10.5282/ubm/data.36>

Beschreibung

In this paper we report on recently collected specimens of glass sponges belonging to Farreidae Gray, 1872 and Tretodictyidae Schulze, 1886 (Porifera: Hexactinellida: Hexactinosida). All specimens represent new geographical records for their genera: Coral Sea for *Aenidoscopulia Reisman, 2002* (Farreidae) and *Psilocalyx Iijima, 1927* (Tretodictyidae); W. Atlantic for *Sarostegia Topsent, 1904*.

Open Data LMU, <http://data.ub.uni-muenchen.de>

# Forschungsdaten-Repositoryen

The screenshot shows a Figshare page for a research dataset. At the top, the Figshare logo is on the left, and navigation links for 'My data', 'Browse', and 'Upload' are on the right. A user profile for 'H. Pampel' is also visible. The main title of the dataset is 'Herring Hepatic Transcriptome 34300 contigs.fa'. Below the title, there is a large text area containing three consensus sequences from different contigs, each with its average coverage. To the right of the text area, there are statistics: 3677 views, 7 shares, and a badge indicating 'cites coming soon'. Below these statistics, the publication date is 'Published on 19 Jan 2012 - 16:37 (GMT)' and the file size is 'Filesize is 22.40 MB'. Further down, there are sections for 'Categories' (Molecular biology, Marine Biology), 'Authors' (Steven Roberts), and 'Tags' (contigs, herring, fasta, ngs). At the bottom of the main content area, there are 'Preview' and 'Download' buttons. Below the main content area, there is a social sharing section with 'Share this:' and 'Cite this:' options. The 'Share this:' section includes buttons for Facebook, Twitter, and a '+1' button. The 'Cite this:' section provides the dataset title, author name, retrieval date, and a DOI link. On the right side of the page, there is an 'Export' section with a link to 'Export to Ref. Manager'.

figshare My data  Browse Upload H. Pampel

## Herring Hepatic Transcriptome 34300 contigs.fa

```
>ConsensusfromContig1 Average coverage: 2.00
GTGTGTGTGTGCGTGTGTCTCTACGCCCTCGTCTCTTCACTGTACTCGCTGTCACTGTCT
CGACCGGGGTGCTCAGGCATCTTGGGGTGTGCCCTCTTGGGGTTCAGCCTGGACGAGC
TTGGGGGCTGCTGATTGGATGGCTGTGGCGCTGGGCTCTTCCATTTGGTCTCTGGCCC
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TCTGGCTCAGGCTCGGCCCTCCGGCTCTACTGTTGCCCTCCCGCACCTGACGAGGAGGAGG
AGCAACTGCTGCTGCTGCTTTTGTGTTGGCTCTGCTGCATCATGTGCATGTACATGTTG
TACACCAGGTTGGCCATTTCCGGCATGTTCTTGATCGCCTGGTTGGGCTGGGACGAGCGA
TCTCCAAATAGGCTGGGTGATGACTACTATTAGTCCGTATGTGTAGCTGCATAGGGCGCGG
GTGAGC
>ConsensusfromContig2 Average coverage: 1.64
TCGAGGAGCTGACCGCATGGCTCCTGCAAGAAGCAGCGACTGGTCGAGACCCCTGCGCCTG
CAGCTCGAGATCGGGCAGCAAGCAGGGCGGGCAGCATGACGACGACGGCGGGGGCGCC
AAGGAGACCCTCCAGCAGCCACCGCCAGAGGGCGCTGTTGTGGGGTGAAAGGAGGAGCC
CCGACGTCGTACCCGGCAGCGCTACCACTGCTGCCCTCTCCCGCGCTGGAGGCCATC
CGCGTACCCTGAAAAGAGGAAGCGACCGAGGAAGAGGAGGAGGAGGAGGAGAGAGAG
GAGATGGACGACGTGATGGCGGAGACGAAACGACTGCGATGTCGG
>ConsensusfromContig3 Average coverage: 3.34
CTGGCTATCAGGTGTAATTTCCAGGCACCTCAGTTCATTTTGGGCTTGCTCCAGTTTGTC
TTTAGTCTGTCCAGTTCAGCCTTCATTTTGGAAAATTAAGTTGATGGCAGGGTCGAC
```

3677 views 7 shares cites coming soon

Published on 19 Jan 2012 - 16:37 (GMT)  
Filesize is 22.40 MB

### Categories

- Molecular biology
- Marine Biology

### Authors

Steven Roberts

### Tags

contigs herring fasta ngs

### Export

- Export to Ref. Manager

Preview Download

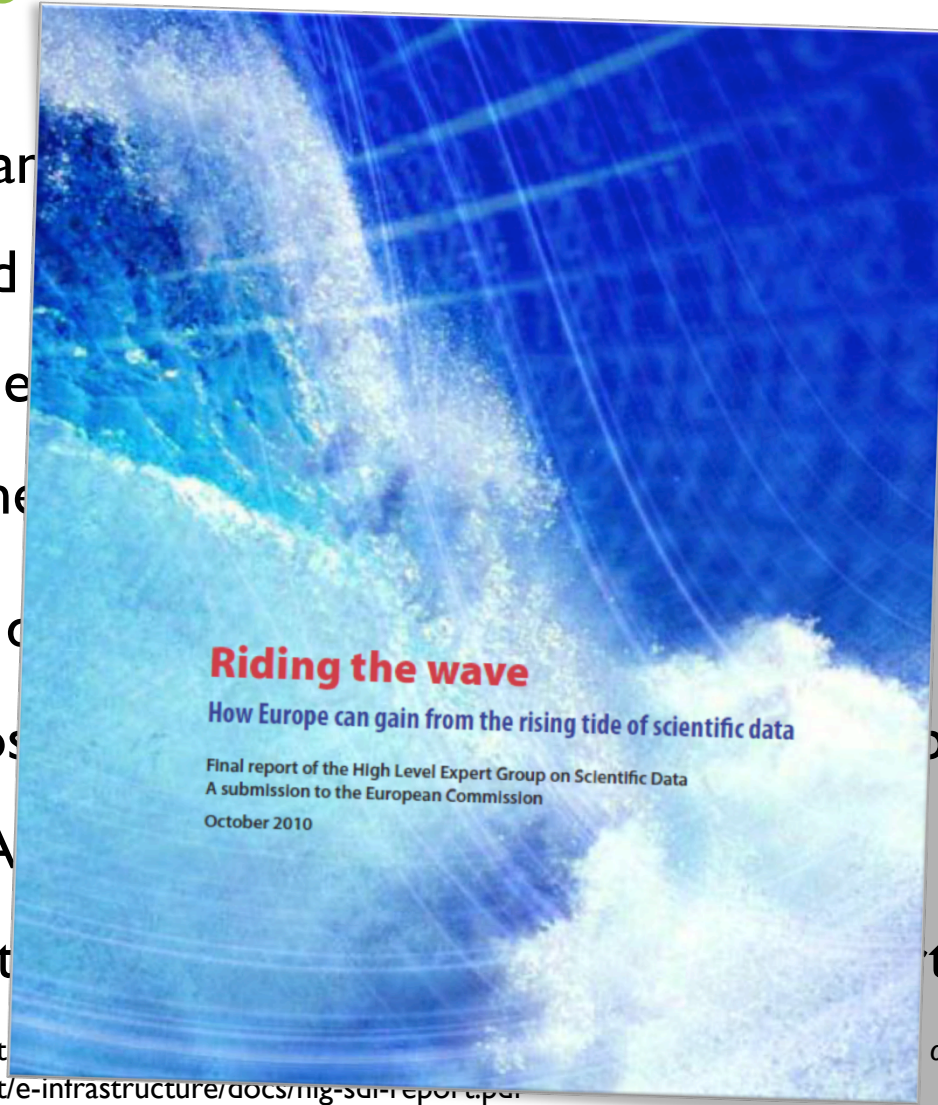
Share this: [f Share](#) 0 [t Tweet](#) 6 [+1](#) 1

Cite this: Herring Hepatic Transcriptome 34300 contigs.fa. Steven Roberts. Figshare.  
Retrieved 10:28, May 11, 2012 (GMT)  
[hdl.handle.net/10779/084d34370fda29bbc67b3c5ecb02575](http://hdl.handle.net/10779/084d34370fda29bbc67b3c5ecb02575)

Figshare, <http://figshare.com>

# Vision 2030

- „Researchers are able to find, access and use data with confidence in the long term and they can evaluate the quality of the data they use.”
- “Producers of data prefer to deposit their data in international standards, open access, and they are able to access, and use the data by themselves.”



High Level Expert Group on Scientific Data  
from [http://cordis.europa.eu/fp7/ict/e-infrastructure/docs/mig-sai-report\\_en.pdf](http://cordis.europa.eu/fp7/ict/e-infrastructure/docs/mig-sai-report_en.pdf)

of scientific data. Retrieved

# Vision 2030

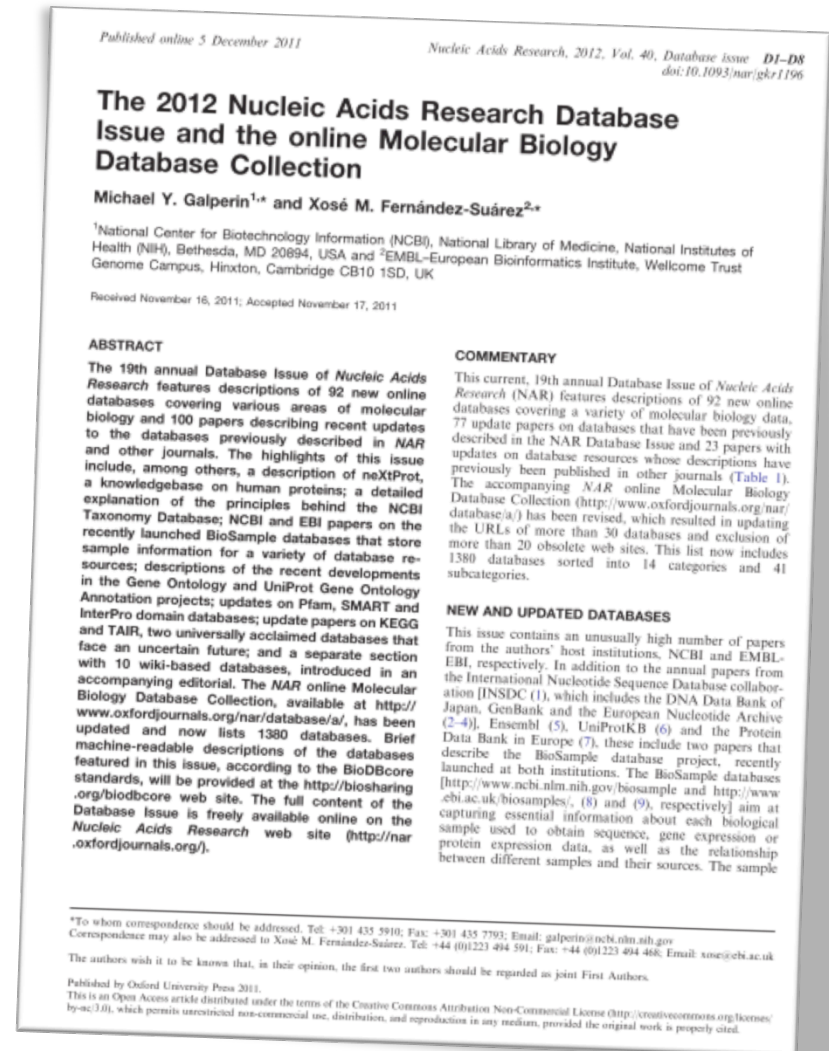
- „Researchers and practitioners from any discipline are able to find, access and process the data they need. They can be confident in their ability to use and understand data, and they can evaluate the degree to which that data can be trusted.“
- “Producers of data benefit from opening it to broad access, and prefer to deposit their data with confidence in reliable repositories. A framework of repositories is guided by international standards, to ensure they are trustworthy.”

High Level Expert Group on Scientific Data. (2010). *Riding the wave. How Europe can gain from the rising tide of scientific data*. Retrieved from <http://cordis.europa.eu/fp7/ict/e-infrastructure/docs/hlg-sdi-report.pdf>

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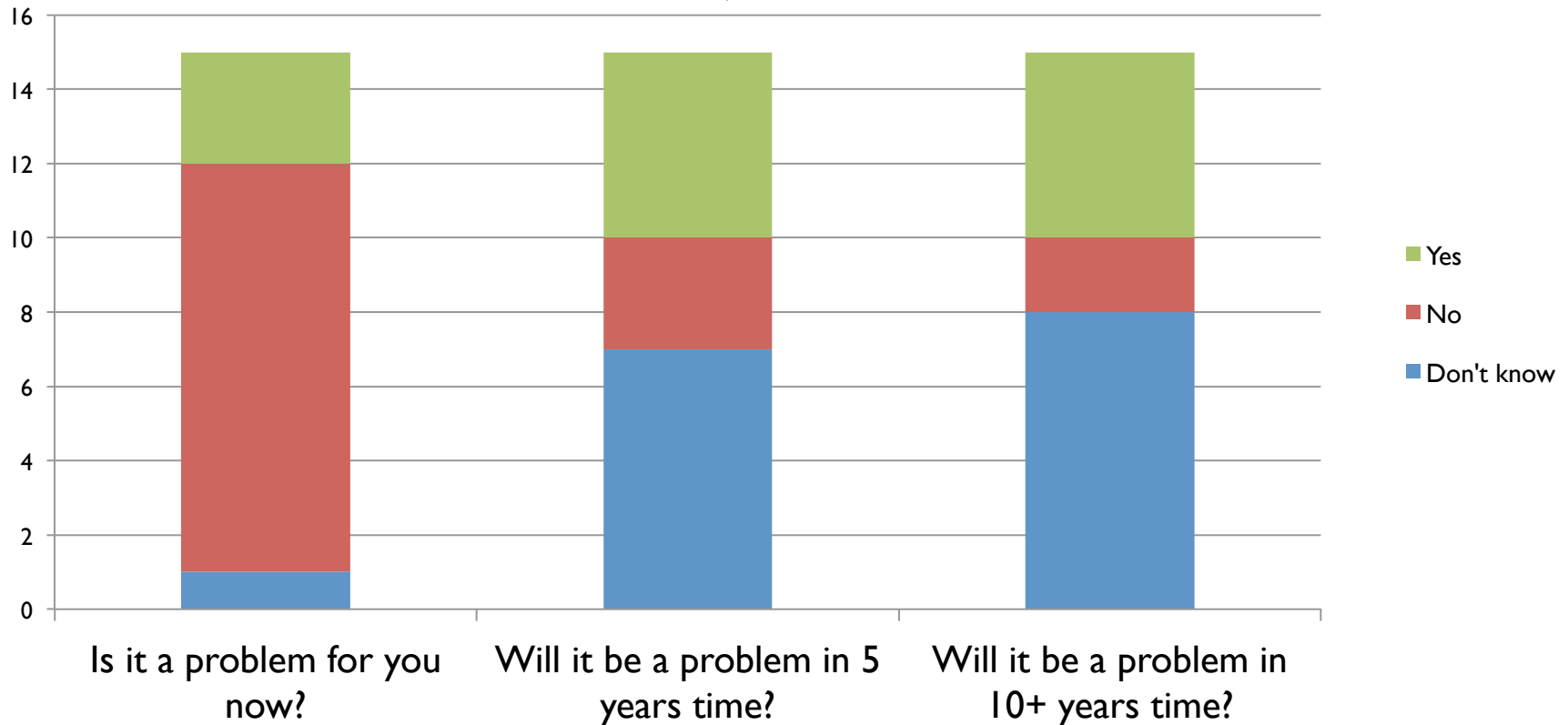
# Beispiel: Biomedizin

- 200 Repositorien
- 100 Institutionen
- 350 Personen
- > 10.000 Nutzerinnen und Nutzer
- 60 Millionen Zugriffe per Monat
- 35 Millionen EUR jährliche Kosten



ELIXIR. (n.d.). *The ELIXIR Strategy for Data Resources. Draft Report from Workpackage 2. The ELIXIR Preparatory Phase*. Retrieved from <http://www.elixir-europe.org/bcms/elixir/Documents/reports/ELIXIR Strategy for Data Resources report.pdf>

## Funding of the repositories - now and in the future, n = 15



# Dauerhafte Finanzierung

IN FOCUS NEWS

INFORMATICS

## Databases fight funding cuts

Online tools are becoming ever more important to biology, but financial support is unstable.

BY MONYA BAKER

In the era of 'big data', it is a bitter blow for scientists to lose access to the online tools they use to analyse and share terabytes of information. Yet funding cuts by the US National Library of Medicine (NLM) are threatening five widely used biological databases, and user communities are now rallying to save them. "The idea that this resource could just disappear is a serious problem for everyone who relies on it," says Mark Musen, a bioinformatician at Stanford University in California, and manager of Protégé, which provides open-source software to organize and interrelate biological data.

Protégé has 200,000 registered users, and the NLM, part of the National Institutes of Health (NIH) in Bethesda, Maryland, has contributed millions of dollars to maintain it. But

### ENDANGERED DATABASES

The US National Library of Medicine (NLM) is cutting resources that biologists say are vital to their research.

Resource	NLM-funded since	Function	Usage	Last NLM award
Protégé	1990	Creating tools to organize and analyse data	200,000 registered users	\$956,625
BioMagResBank	1990	Holds spectroscopy data for biomolecules	500–1,000 unique users per day	\$727,129
Rebase	1994	Identifying families of non-coding DNA across species	8,000 registered users	\$551,544
REBASE	1995	Finding where enzymes bind to and cut DNA	495,844 website hits per month	\$235,911
CASP	2001	Testing techniques to predict protein structure	More than 100 research groups participate	\$515,168

a structural biologist at the University of Wisconsin-Madison, hopes to attract other federal funders to support the database.

shifting commercial priorities.

The least vulnerable databases are those directly run by government agencies, says

Baker, M. (2012). Databases fight funding cuts. *Nature*, 489(7414), 19–19. doi:10.1038/489019a

# re3data.org: Mission

- Aufbau eines “Registry of Research Data Repositories”
- Ziel ist ein weltweites, disziplinübergreifendes, web-basiertes Verzeichnis von Forschungsdaten-Repositories
- Orientierung für Wissenschaftler, Förderer, Verlage, Infrastruktur
- Vernetzung und Standardisierung von Forschungsdaten-Repositories
- Förderung der “cultur of sharing” und der Sichtbarkeit von Daten



# re3data.org: Partner

- Deutsches GeoForschungsZentrum GFZ, LIS
- Humboldt-Universität zu Berlin, IBI
- Karlsruher Institut für Technologie (KIT), KIT Library



- Förderung durch die DFG (2012-2014)



- Vernetzung im Rahmen von DINI



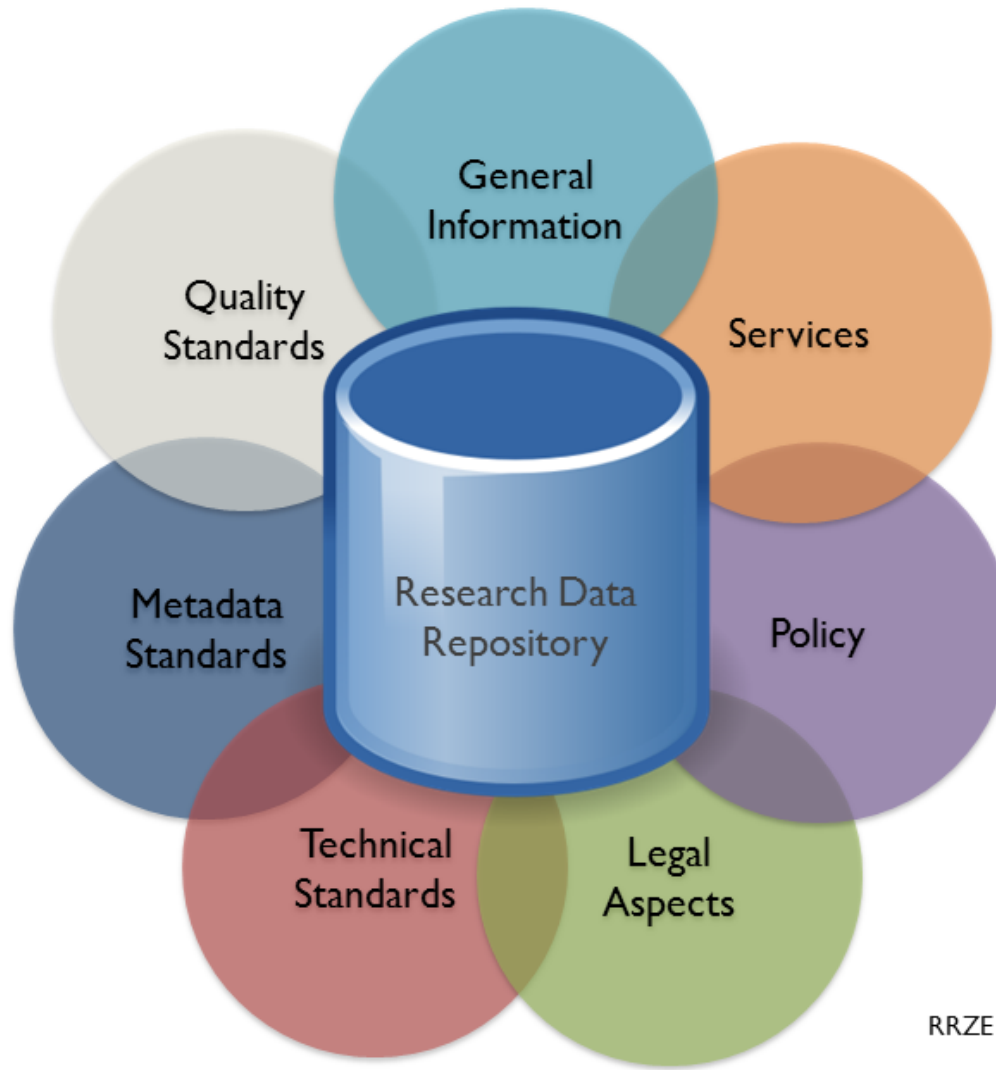
- MoU mit DataCite



# re3data.org: Status quo




- Aktivitäten in der ersten Projektphase:
  - ✓ Konzeption des Registries
  - ✓ Entwicklung eines Metadaten-Schemas
  - ✓ Formulierung von Auswahlkriterien
  - ✓ Technische Entwicklung des Registries
  - ✓ Vernetzung mit relevanten Initiativen
- Onlinegang für Herbst 2012 geplant

# re3data.org: Aspekte



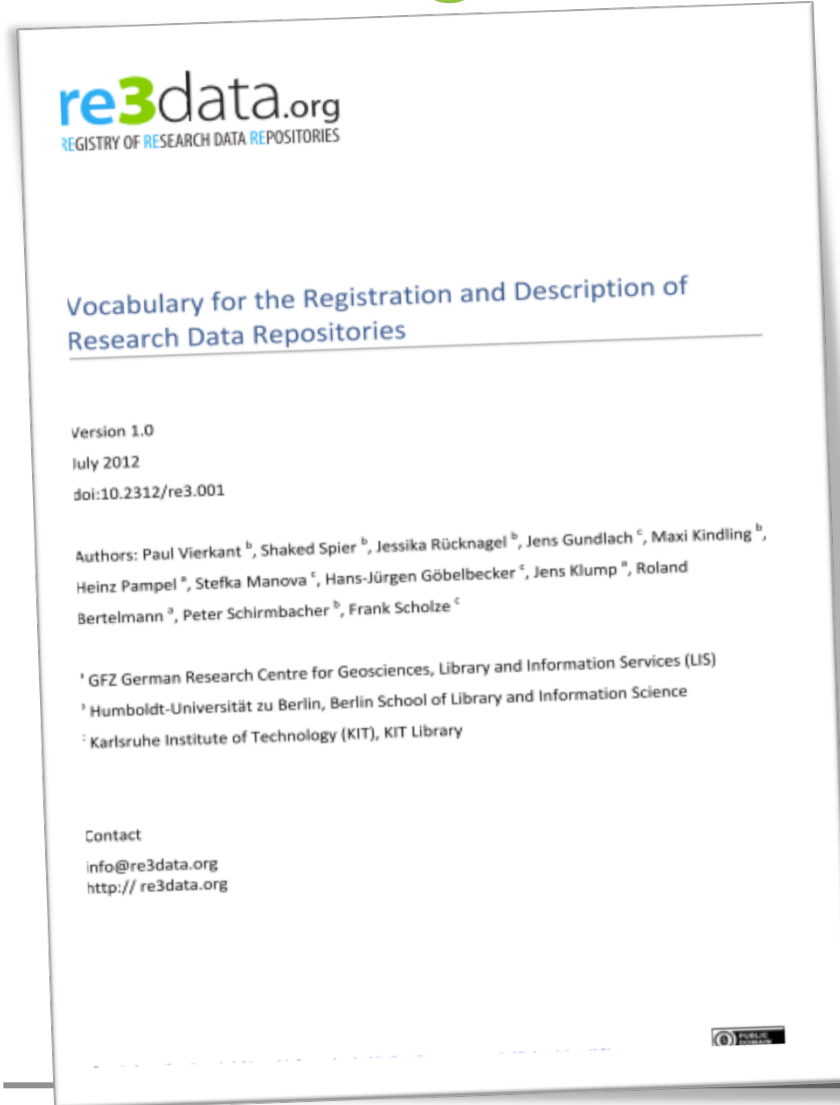
RRZE Icon Set (CC: BY-SA)

# re3data.org: Zugang/Nachnutzung

Access Icons			
Access to Repository	open	open oder restricted	closed
Access to Data	open, (restricted, closed)	restricted, (closed)	closed
Upload	open oder restricted	open oder restricted	-

Orange unterlegte Werte werden für das jeweilige Icon benötigt, die Werte in Klammern können vorkommen.

# re3data.org: Vokabular



- Vierkant, P., Spier, S., Rücknagel, J., Gundlach, J., Kindling, M., Pampel, H., Manova, S., et al. (2012). Vocabulary for the Registration and Description of Research Data Repositories. Version 1.0. doi:10.2312/re3.001

# re3data.org: Vernetzung

- Vernetzung mit weiteren Projekten (in Auswahl)
  - DFG: KOMFOR, LAUDATIO, RADIESCHEN, ...
  - EU: APARSEN, OpenAIREplus, ODE, EUDAT, ...
  - Helmholtz Open Access Koordinationsbüro
- DINI-Wiki zum Thema im Aufbau
  - AG Elektronisches Publizieren
  - AG Virtuelle Forschungsumgebungen
- Mailingliste: [forschungsdaten@listserv.dfn.de](mailto:forschungsdaten@listserv.dfn.de)



## Vocabulary to describe Research Data Repositories online

3

Posted on [July 26, 2012](#) by [re3data.org team](#)

The first draft of the re3data.org vocabulary to describe research data repositories and its documentation is [online](#) (version 1.0). The vocabulary will be used to index research data repositories gathering issues such as:

- general information (e.g. subject)
- information on the provider (e.g. responsible institutions)
- information on legal aspects (e.g. licenses)
- information on technical, metadata and quality standards (e.g. software, api and certificates).

### PARTNERS



# Danke für Ihre Aufmerksamkeit!

# re3data.org: Team

- Humboldt-Universität zu Berlin, Institut für Bibliotheks- und Informationswissenschaft:
  - Peter Schirnbacher (Leitung), Maxi Kindling, Paul Vierkant, Jessika Rücknagel, Shaked Spier
- Helmholtz-Zentrum Potsdam, Deutsches GeoForschungsZentrum GFZ, LIS
  - Roland Bertelmann (Leitung), Jens Klump, Heinz Pampel
- Karlsruher Institut für Technologie (KIT), KIT-Bibliothek
  - Frank Scholze (Leitung) Hans-Jürgen Goebelbecker, Jens Gundlach, Stefka Manova



info@re3data.org

http://re3data.org



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# Referenzen

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- Vierkant, P., Spier, S., Rücknagel, J., Gundlach, J., Kindling, M., Pampel, H., Manova, S., et al. (2012). *Vocabulary for the Registration and Description of Research Data Repositories. Version 1.0*. doi:10.2312/re3.001