

Forschungsdaten-Repositoryen

Informationsinfrastrukturen für nachnutzbare Forschungsdaten

Heinz Pampel, Deutsches GeoForschungsZentrum GFZ

12. Oracle Bibliotheken Summit, Bonn, 21.06.2012

Agenda

- Hintergrund
- Forschungsdaten-Repositoryen
- re3data.org
- Perspektive

Hintergrund

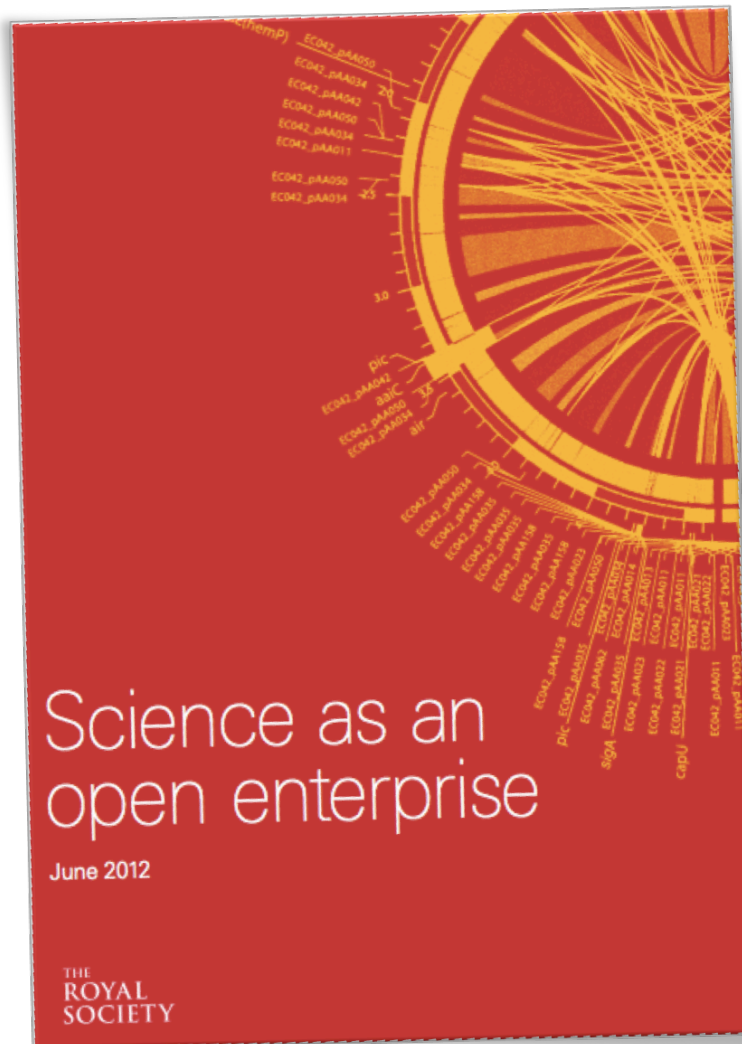
- Forschungsdaten sind wertvoll und einzigartig
- Neue Technologien fördern datenintensive Forschung
- Breite Diskussion über die dauerhafte Zugänglichkeit und Nachnutzung der Daten
- Data Policies als Motor der Diskussion
- Je nach Disziplin diverse Herausforderungen

Enquete-Kommission Internet und digitale Gesellschaft

699 Die Enquete-Kommission empfiehlt dem Bund, Projekte voranzutreiben, die verbindliche
700 Standards für Zugänglichkeit und Erhalt der digitalen Datenbestände aus öffentlicher
701 Forschung entwickeln. Sie empfiehlt weiter die Unterstützung der
702 Wissenschaftsorganisationen bei der Normierung und Standardisierung von (Meta-)Daten,
703 Quellenbezeichnungen (u.a. persistent identifiers) und anderen Formaten. Die Vernetzung
704 von Daten und Repositorien setzt eine eindeutige Referenzierung sowie die Interoperabilität
705 von Daten voraus. Die Interoperabilität muss – ohne Brüche – die Integration von
706 Dienstleistungen in den Arbeitsablauf von Wissenschaftlerinnen und Wissenschaftlern
707 gewährleisten. Zur Implementierung von Standards sowie der Zugänglichkeit gehören
708 auch Fragen der Qualitätssicherung, der Barrierefreiheit und der technischen
709 Voraussetzungen. Entsprechende Akteure sollten darüber hinaus bei der Entwicklung von
710 Standards und Werkzeugen für die Datenanalyse, Datenanreicherung und Datenpublikation
711 unterstützt werden. Die Auswahl der erhaltenswerten Datenbestände soll den
712 Fachdisziplinen obliegen.

Enquete-Kommission Internet und digitale Gesellschaft, 2012.

The Royal Society



„Scientists should communicate the data they collect and the models they create, to 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 data justify 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.

Data Policies: Förderer

- **NIH, 2003**
 - „The NIH endorses the sharing of final research data to serve these and other important scientific goals. The NIH expects and supports the timely release and sharing of final research data from NIH-supported studies for use by other researchers. Starting with the October 1, 2003 receipt date, investigators submitting an NIH application seeking \$500,000 or more in direct costs in any single year are expected to include a plan for data sharing or state why data sharing is not possible.“
- **DFG, 2012**
 - „Wenn aus Projektmitteln systematisch (Mess-)Daten erhoben werden, die für die Nachnutzung geeignet sind, legen Sie bitte dar, welche Maßnahmen ergriffen wurden bzw. während der Laufzeit des Projektes getroffen werden, um die Daten nachhaltig zu sichern und ggf. für eine erneute Nutzung bereit zu stellen. Bitte berücksichtigen Sie dabei auch - sofern vorhanden - die in Ihrer Fachdisziplin existierenden Standards und die Angebote bestehender Datenrepositorien.“

HORIZON 2020

Document	Reference	Proposal
Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)	COM(2011) 809 final 2011/0401 (COD)	„Free, open and unrestricted access to interoperable data and information will be encouraged.“
Proposal for a Regulation of the European Parliament and of the Council laying down the rules for the participation and dissemination in 'Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)	COM(2011) 810 final 2011/0399 (COD)	„With regard to dissemination through research publications, open access shall apply under the terms and conditions laid down in the grant agreement. With regard to dissemination of other results, including research data, the grant agreement may lay down the terms and conditions under which open access to such results must be provided, in particular in ERC frontier research or any other appropriate areas.“

European Commission, n.d.

Data Policies: Journals

- **Nature, 2011**
 - „Data sets must be made freely available to readers from the date of publication, and must be provided to editors and peer-reviewers at submission, for the purposes of evaluating the manuscript. For the following types of data set, submission to a community-endorsed, public repository is mandatory. Accession numbers must be provided in the paper. Examples of appropriate public repositories are listed below.“
- **AGU, 1996**
 - „Data sets cited in AGU publications must meet the same type of standards for public access and long-term availability as are applied to citations to the scientific literature. Thus data cited in AGU publications must be permanently archived in a data center or centers that meet the following conditions: a) are open to scientists throughout the world. b) are committed to archiving data sets indefinitely. c) provide services at reasonable costs.“

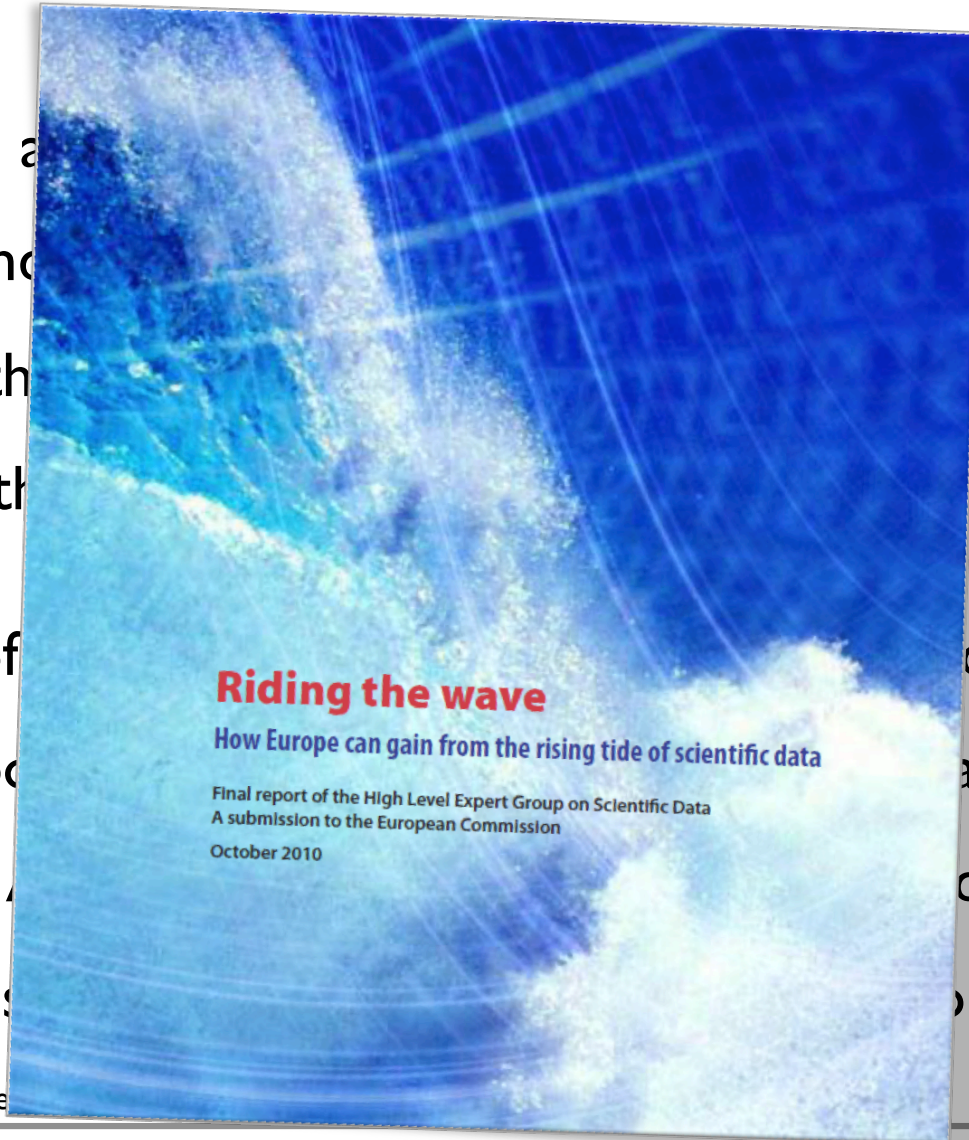
Opportunities for Data Exchange (ODE)



Schäfer et al., 2011.

Vision 2030

- „Researchers are able to find, access and use data with confidence in the quality and trustworthiness of the data, and they can evaluate the data for their own purposes.“
- “Producers of data prefer to deposit their data in open access, and accessible international repositories. Data is available and used by researchers worldwide, and is trustworthy.”



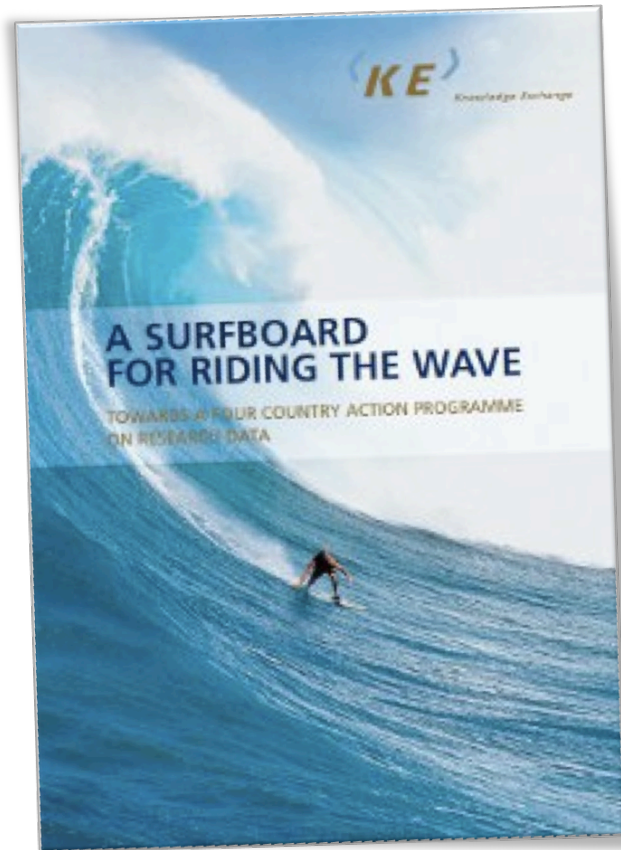
High Level Expert Group on Scientific Data

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.

Handlungsfelder zur Realisierung der Vision 2030



- Anreize für Wissenschaftler
- Ausbildung und Training der beteiligten Akteure
- Aufbau und Vernetzung der Infrastrukturen
 - „The three main challenges in developing an ecosystem of data repositories are (1) gaps in the present data infrastructure and (2) connectivity issues (between the workflow of researchers and the institutional data infrastructure and between institutional and national data infrastructures) and (3) long-term financial basis.”
- Finanzierung der Aktivitäten

Van der Graaf, M., & Waaijers, L. 2011.

Publikationsstrategien

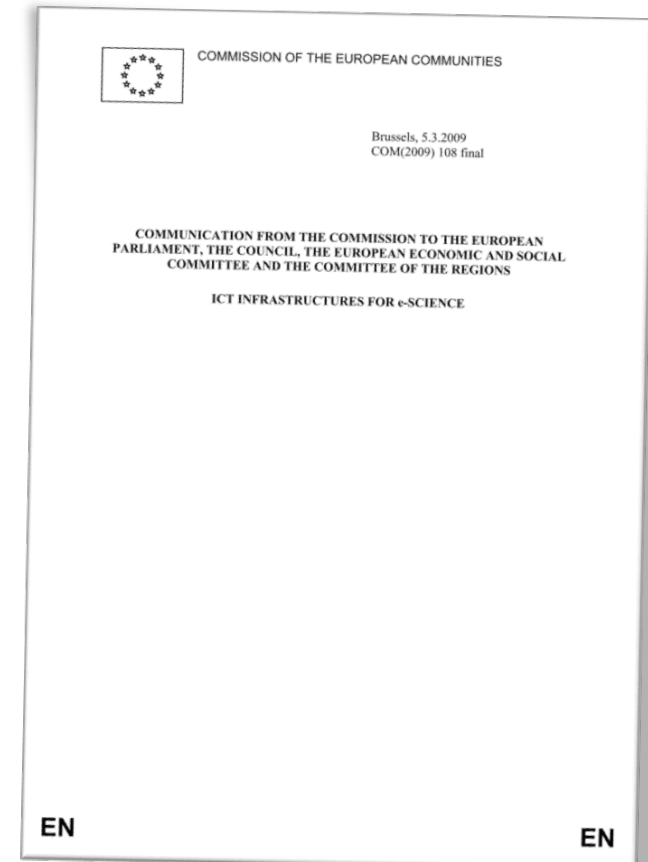
- Die Veröffentlichung von Forschungsdaten als eigenständiges Informationsobjekt in einem Repository (oder einem anderen „Ort“)
- Die Veröffentlichung von Forschungsdaten als Anreicherung einer (interpretativen) Text-Publikation („Enriched Publication“)
- Die Veröffentlichung von Forschungsdaten mit textueller Dokumentation, als sogenanntes „Data Paper“

Angelehnt an Dallmeier-Tiessen, S. , 2011.

Forschungsdaten-Repositoryen

- EC: ICT infrastructures for e-science, 2009

„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.

Forschungsdaten-Repositoryen

The screenshot shows the top navigation bar of the NCBI GEO website. It includes the NCBI logo, the GEO logo (Gene Expression Omnibus), and links for GEO Publications, FAQ, MIAME, and Email GEO. Below the navigation bar, there is a description of the Gene Expression Omnibus as a public functional genomics data repository. The main content area is titled 'GEO navigation' and features two main sections: 'QUERY' and 'BROWSE'. The 'QUERY' section includes buttons for 'DataSets', 'Gene profiles', 'GEO accession', and 'GEO BLAST', each with an associated input field and a 'GO' button. The 'BROWSE' section includes buttons for '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 interface. At the top, it features the PANGAEA logo and the tagline 'Data Publisher for Earth & Environmental Science'. Below this is a globe icon with the PANGAEA logo overlaid. The main navigation bar includes buttons for 'All', 'Water', 'Sediment', 'Ice', and 'Atmosphere', followed by a search input field and a 'Search' button. Below the search bar, there are links for 'Help', 'Advanced Search', 'Preferences', and 'more...'. At the bottom, there is a footer with links for 'About', 'Submit Data', 'Projects', 'Software', 'WDC-MARE', and 'Contact', and a statement: '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
Intercorrelation of down-core variations of the hig for COND1-603 and COND1-605. *Scientific Drilling* /GFZ.SDDB.1003
[Download Citation \(EndNote\)](#)

Title: Intercorrelation of down-core variations of the hig for COND1-603 and COND1-605

Abstract: Down-core variations of the high-resolution magr 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

Home The Building Research Publications The Team Repository Contact Search

You are here: [Home](#) > [Repository](#) > BDPP0019

Repository

[first](#) [previous](#) Record 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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@other(BDPP0019,
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title = (Transverse cross-section, facing north),
year = (2009),
keywords = (Medium Visualisation Building Interior),
owner = (berndt),
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-Repositoryen

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 (1)

Version 1.0 - published on Feb 22, 2011
doi:10.5072/FK2NG4S08 - cite this

Abstract This is a master file of merged excel files with 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. 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>

The University of Edinburgh

Information Services

DSpace Startseite > Information Services (IS) > Vice Principal's Office > Dokumentanzeige

A survey of undergraduate technology use and attitudes

Download Dataset

Zur Langanzeige

Titel: A survey of undergraduate technology use and attitudes

Autor: Macleod, Hamish; Paterson, Jessie

Datum: 2012-05-09

Citation: Macleod, Hamish; Paterson, Jessie. (2012). A survey of undergraduate technology use and attitudes, 2011 [Dataset]. University of Edinburgh.

Permanent Identifier: <http://hdl.handle.net/10283/144>

Dataset Description (abstract): An award from ELESIG (The Evaluation of Learners' Experience of eLearning Special Interest Group) provided an opportunity to continue the long and successful collection of information about how our students view ICT at the University of Edinburgh. The original work started in the 1990s but lapsed in recent years due to data collection issues. During the second semester in 2010-11, using a paper questionnaire, first and second years across the University were targeted. The findings raised a number of interesting points, for example: some students still find IT challenging, although laptop ownership is high, students do not seem to be planning to carry their laptops to the campus; Facebook appears to be used significantly for academic purposes.

Dateien	Description	Größe	Format	Anzeige	Beschreibung
ICTSurvey.csv	Data file in CSV format	46.51Kb	Text	Download	Data file in CSV format
ICTSurvey.sav	Data file in SPSS format	29.83Kb	Unbekannt	Download	Data file in SPSS format
ICTSurvey-codebook.rtf	Codebook in Rich Text Format	1.563Mb	RTF	Download	Codebook in Rich Text Format
ICTSurvey-codebook.spv	Codebook in SPSS format	137.5Kb	Unbekannt	Download	Codebook in SPSS format

DataShare, <http://datashare.is.ed.ac.uk/>

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 in the center. A user profile for 'H. Pampel' is on the right. The main title is 'Herring Hepatic Transcriptome 34300 contigs.fa'. Below the title, there is a large text area containing FASTA sequence data for three contigs. To the right of the sequence, there are statistics: 3677 views, 7 shares, and a badge indicating 'cites coming soon'. Below these are the publication date (19 Jan 2012) and file size (22.40 MB). The 'Categories' section lists 'Molecular biology' and 'Marine Biology'. The 'Authors' section lists 'Steven Roberts'. The 'Tags' section includes 'contigs', 'herring', 'fasta', and 'ngs'. The 'Export' section has a link for 'Export to Ref. Manager'. At the bottom left, there are 'Preview' and 'Download' buttons, and a social sharing section with 'Share' (0), 'Tweet' (6), and '+1' (1) buttons. A citation information box is also present.

figshare My data [search] Browse Upload H. Pampel

Herring Hepatic Transcriptome 34300 contigs.fa

```
>ConsensusfromContig1 Average coverage: 2.00
GTGTGTGTGTGCGTGTGCTCTACGGCTCGTCTCTTCACTGTACTCGGTGTCAGTGTCT
CGACCGGGGTGCTCAGGCATCTTGGGGTGTGCCTCCTCTTGGGGTTACGCTGGACGAGC
TTGGGGGTGCTGATTGGATGGCTGTGGCGTGGGCTCTTCCATGTTCTGCTGGCC
TCAGGGTCCGCCCTTCTGGGCTTGGCGGAGCCTCAGTCTCTGCAGCTGCGTCTGCC
TCTGGCTCAGGCTCGGCCCTCGGCTCTACTGTTGCCCTCCCGCACCTGACGAGGAGGAGG
AGCAACTGCTGCTGCTGCTTTGCTGTTGGCTCTGCTGCATCATGTGCATGTACATGTTG
TACACCAGGTTGGCCATTTCCGGCATGTTCTTGATCGCTGGTTGGGCTGGGACGAGCGA
TCTCCAAATAGGCTGGGTGTAGTACTCATTAGTCCGTATGTGTAGTGCATAGGGCGCGG
GTGAGC

>ConsensusfromContig2 Average coverage: 1.64
TCGAGGAGCTGACGCGCATGGCTCCTGCAGAAAGCAGCGACTGGTCGAGACCTGCGCCTG
CAGCTCGAGATCGGGCAGCAAGCAGGGCGGGGACGATGACGACGACGGCGGGGGCGCC
AAGGAGACCTCCAGCAGCCACCGCCAGAGGGCGCTGTTGTGGGGTGAAGGAGGAGCCC
CCGACGTCGTACCCGCGGACGCCATCCACTGCTGCCCTCTCCCGCCGCTGGAGGCCATC
CGCGTCAACCGTGAAGAGGAAGCGACCGAGGAAGAGGAGGAGGAGGAGGAGAGAGAG
GAGATGGACGACGTGATGGCGGAGACGAAACGACTGCGATGTCGG

>ConsensusfromContig3 Average coverage: 3.34
CTGGCTATCAGGTGTAATTTCCAGGCACCTCAGTTCAATTTGGGCTTGCTCCAGTTTGTG
TTTGTCTGTTCCAGTTTACGCTTCAATTTTGGAGAAATTAAGTTGATGGCAGGGTTCGAC
```

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 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

Figshare, <http://figshare.com>

Beispiel: Biomedizin

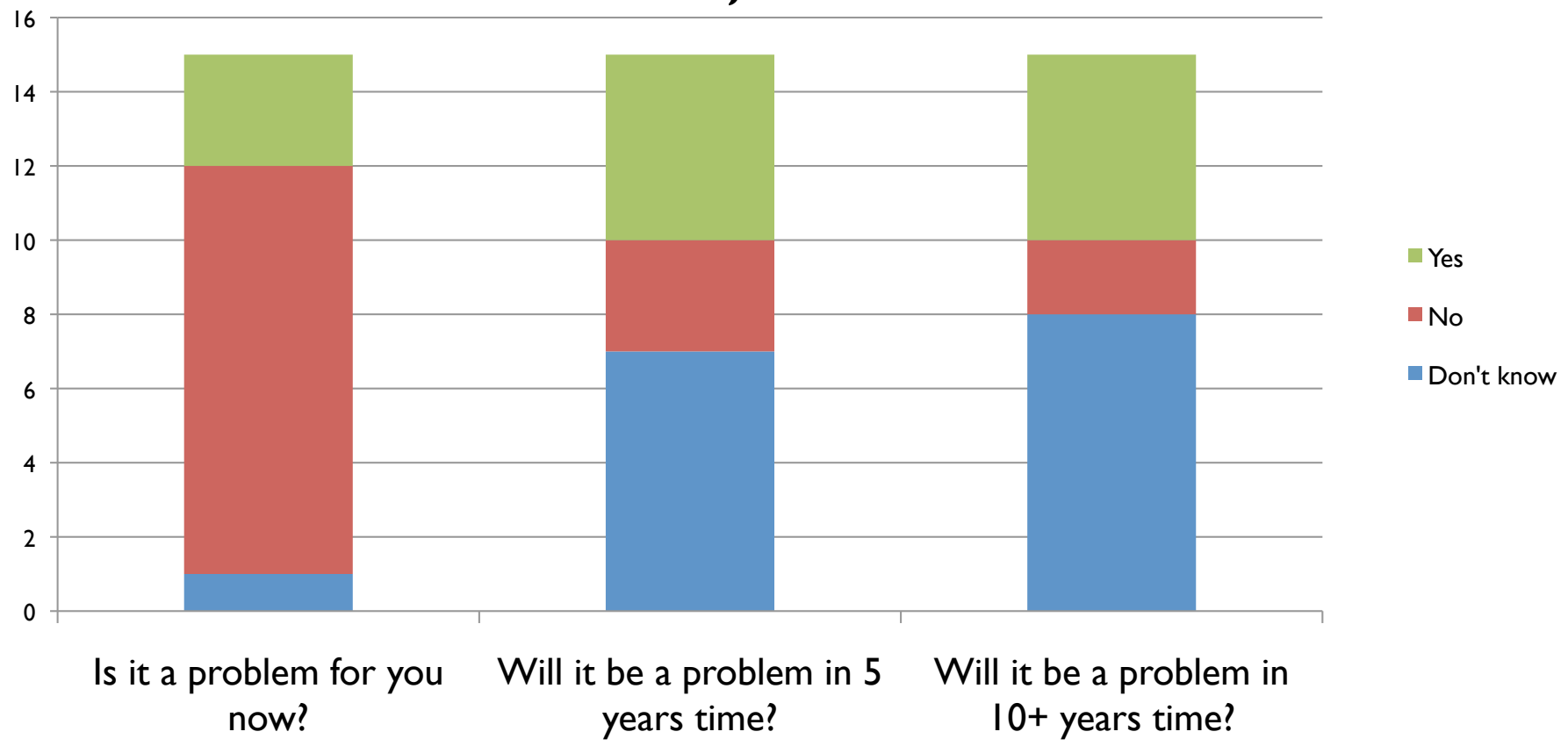
- 200 Repositorien
- 100 Institutionen
- 350 Personen
- > 10.000 Nutzerinnen und Nutzer
- 60 Millionen Zugriffe per Monat
- 35 Millionen EUR jährliche Kosten

ELIXIR, n.d.

preliminary results

APARSEN

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



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 Daten-Repositories
- Förderung der Sichtbarkeit von Daten
- Schaffung einer “cultur of sharing”

re3data.org: Partner

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



- Förderung durch die DFG (2012-2014)



- Vernetzung im Rahmen von DINI



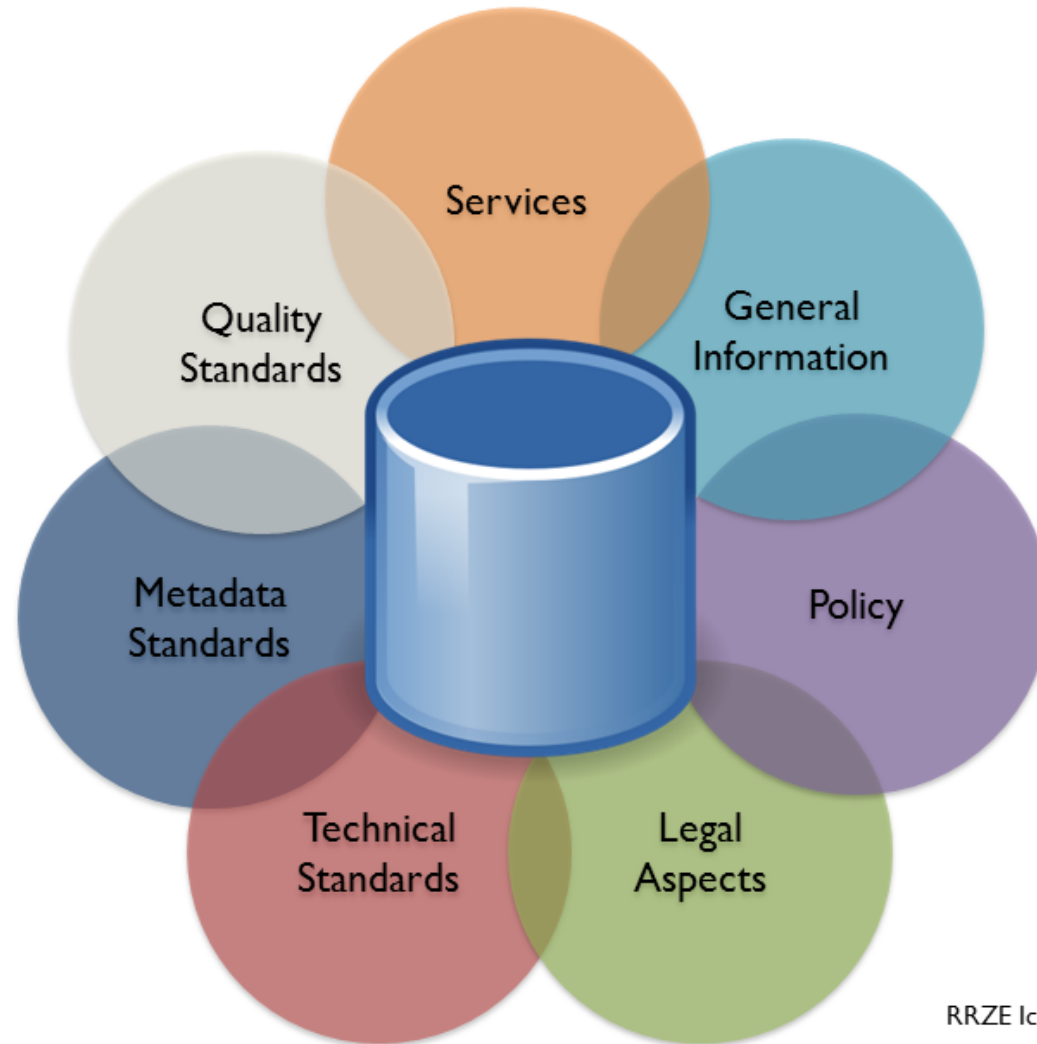
- MoU mit DataCite



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)

Perspektive

- Weiterentwicklung der Repositorien-Landschaft
- Forschung und Entwicklung nötig („Erfolgsfaktoren“)
- Anforderung: „Open Infrastructures for Open Science“
- Zentrale Herausforderung:
 - Standardisierung
 - Vernetzung
 - Finanzierungsmodelle
- Schaffung einer “cultur of sharing”

Danke für die Aufmerksamkeit!

- GFZ:
 - Roland Bertelmann
 - Jens Klump
 - Heinz Pampel
- HU:
 - Peter Schirnbacher
 - Maxi Kindling
 - Paul Vierkant
- KIT:
 - Frank Scholze
 - Hans-Jürgen Goebelbecker
 - Jens Gundlach
 - Stefka Manova

The screenshot shows the re3data.org website. At the top, the logo 're3data.org' is displayed with the tagline 'REGISTRY OF RESEARCH DATA REPOSITORIES'. Below the logo is a navigation bar with links for 'Home', 'About', 'Partners', 'Contact', and 'Imprint', along with a search box. The main content area features a news article titled 'Memorandum of Understanding between DataCite and re3data.org', posted on April 13, 2012, by the re3data.org team. The article text states: 'We are pleased to announce a Memorandum of Understanding between DataCite and re3data.org. With this Memorandum of Understanding DataCite and re3data.org define their efforts to enhance accessibility and visibility of data sets. DataCite is an international consortium to facilitate easier access to scientific research data on the internet, increase acceptance of research data as legitimate, citable contributions to the scientific record, and to support data archiving that will allow results to be verified and re-purposed for future study.' To the right of the article, there is a 'PARTNERS' section with logos for GFZ (Helmholtz Centre Potsdam), Humboldt-Universität zu Berlin, and KIT (Karlsruhe Institute of Technology).

info@re3data.org

http://re3data.org



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Literatur

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- Deutsche Forschungsgemeinschaft. (2012). Leitfaden für die Antragstellung. DFG-Vordruck 54.01 - 1/12. Retrieved from http://www.dfg.de/formulare/54_01/54_01_de.pdf
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