

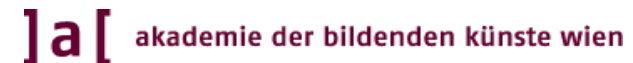


FAIR DATA
AUSTRIA

CYVERSE AUSTRIA (CAT)

AN INTERACTIVE, WEB-BASED, ANALYTICAL PLATFORM THAT ALLOWS
SIMULTANEOUS ACCESS TO AND ANALYSIS OF RESEARCH DATA

CLAIRE JEAN-QUARTIER, HERMANN SCHRANZHOFER, 3.5.2022



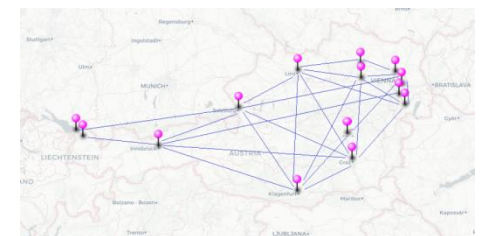
EVENT SERIES „RESEARCH DATA MANAGEMENT IN AUSTRIA“

The event series "Research Data Management in Austria" is aimed at researchers and/or research support staff and serves to promote networking and exchange on the topic of research data management, writing a data management plan, and similar related topics.

- Slides and recording on the project website soon:
forschungsdaten.at/en/fair-data-austria/materials/



RepManNet



PRESENTERS – RDM TEAM @ TU GRAZ

Claire Jean-Quartier: is a research assistant involved in the IDE@S project. Focusing data science she has been engaged in interdisciplinary topics related to wet and dry biomedical research next to the aspect of sustainability. Her fascination for natural and technical sciences lead to basic research involving all data steps from data generation, mining, processing to sharing and quality assurance. These experiences demonstrated the challenge for open science and the necessity of RDM.



Hermann Schranzhofer: is Project Senior Scientist and has his focus on Data Stewardship. Therefore he is involved in the development of services and policies for research data management. Hermann studied physics at the Graz University of Technology and finished his PhD in materials science at the Montanuni Leoben. Before he joined the RDM Team, he worked for 15 years at the Institute of Thermal Engineering at Graz University of Technology in research and development.



<https://www.tugraz.at/sites/rdm/support/rdm-team/>

CONTENT

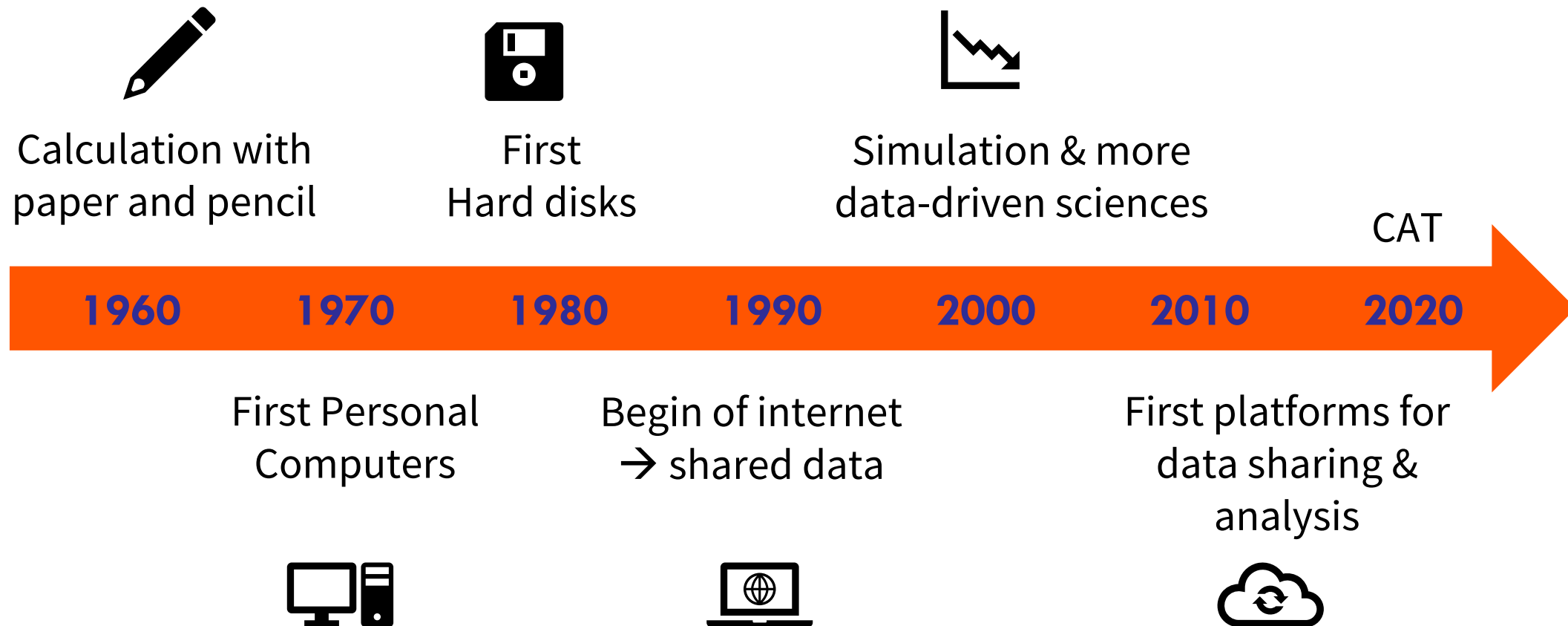
- Background Presentation
- Demonstration
- Q&A



<https://www.tugraz.at/sites/cat>

This material is based upon work supported by the National Science Foundation under Grant Nos. DBI-0735191, DBI-1265383, and DBI-1743442 URL: www.cyverse.org

INTRODUCTION (HISTORICAL)

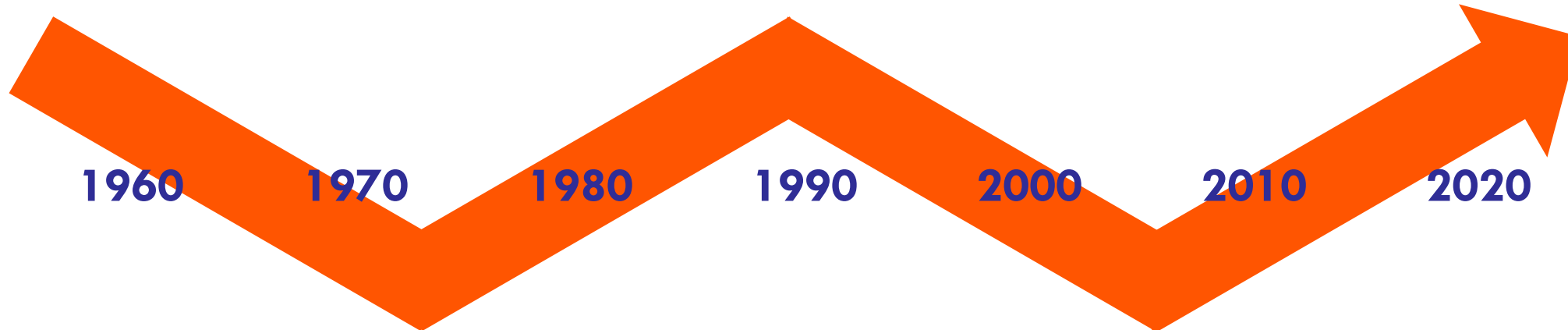


FROM LOCAL TO SHARED

Punch cards had to be carried to **shared** computers

Complex analysis → **shared** high performance computers

Data **sharing** & collaborative work via platforms



Personal computers could be used **locally**

Enhanced PCs & distributed calculations - **local**



DATA PLATFORMS FOR ANALYTICS NEXT TO CYVERSE?

- Google (Colab, Drive, Sheets a.o.)
 - Microsoft (365, Onedrive, Power BI)
 - Nextcloud (In-Apps)
 - SAS (Viya),
 - Cohesity,
 - Mendeley Data Monitor,
- a.o.



Erich Hohenstein, 2022-04-14, Intro to Goolge Colab on <https://levelup.gitconnected.com/google-colab-what-is-it-how-to-use-it-and-why-should-i-care-721bb8a88c90>



<https://nextcloud.com>



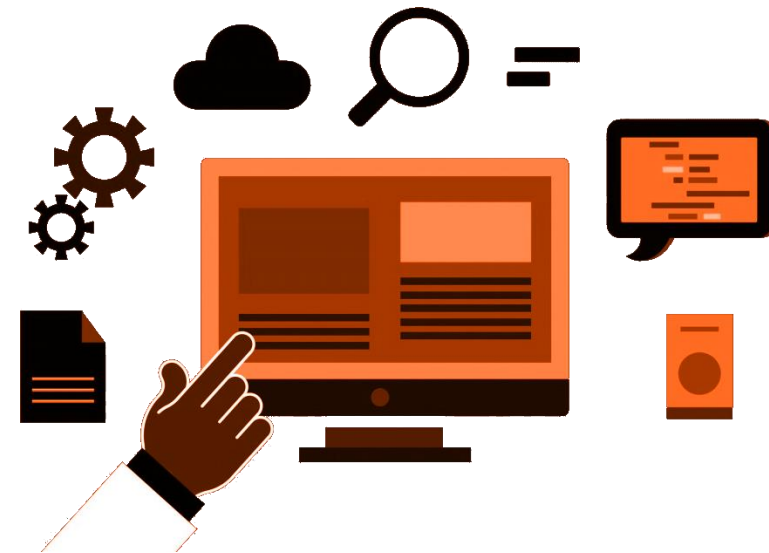
<https://www.cohesity.com/>



Andrea Negri, 2017-01-13, SAS Viya is perfect for IT Nerds at <https://blogs.sas.com/content/brightdata/2017/01/13/sas-viya-perfect-for-it-needs/>

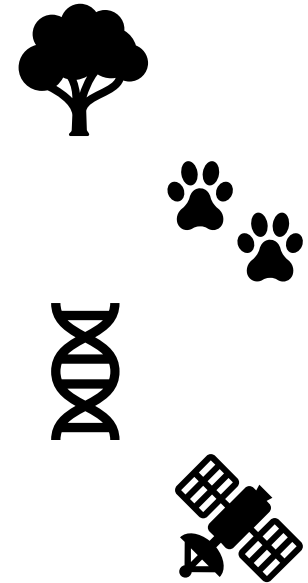
BENEFITS COMPARED TO LOCAL WORKING

- No installation on local machines
- Usage via web browser or command line
- Data **access** from everywhere
- HPC & **shared** resources

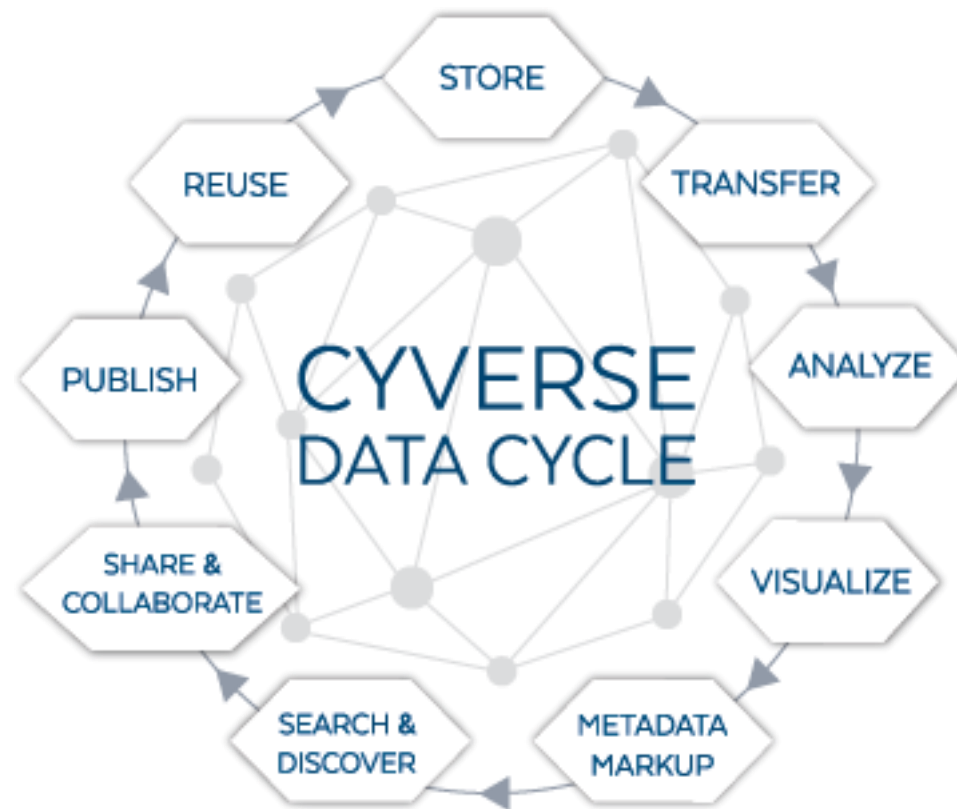


CYVERSE

- 2008 “iPlant” – cyberinfrastructure for **plant sciences**
- 2013 renewed for all non-human **life science** research
- 2016 renamed to CyVerse
- Current project phase funded until 2023
focus on **genomics/transcriptomics** & **geospatial** analysis



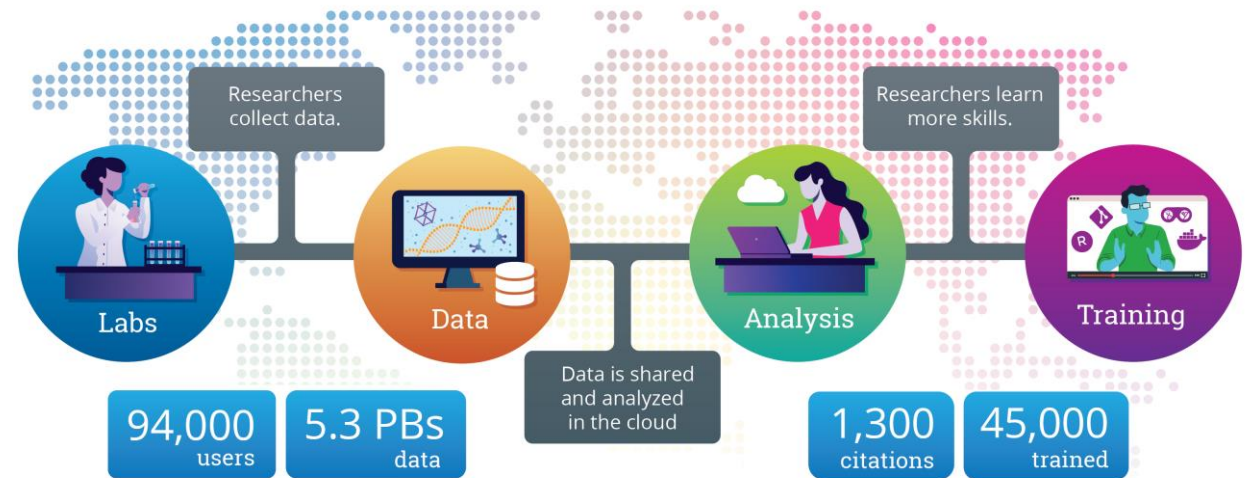
RESEARCH DATA MANAGEMENT WITH CYVERSE



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WHAT IS CYVERSE

- Cyberinfrastructure
- Secure temporary data storage
- Interactive data analysis & HPC
- Web browser & command line
- Data sharing & integration of own resources
- Education

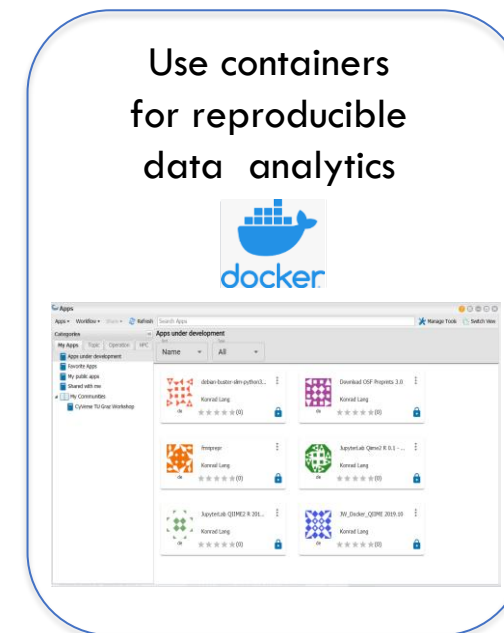
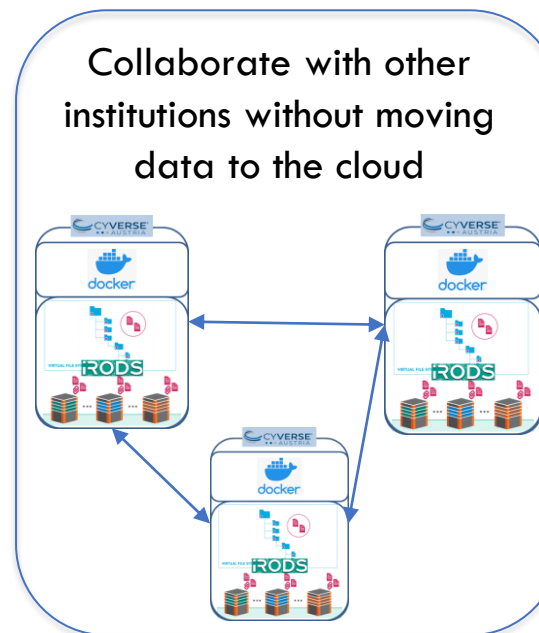
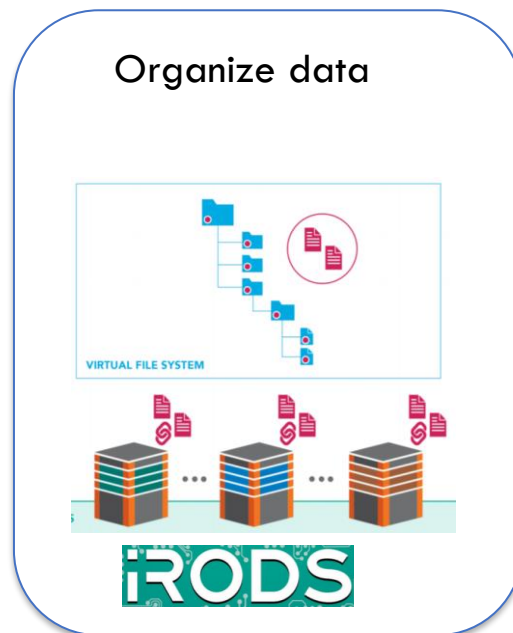


CyVerse US

PLATFORM FOR RDM & DATA ANALYSIS



- *Data storage & analysis infrastructure for huge datasets to enable data-driven discovery*



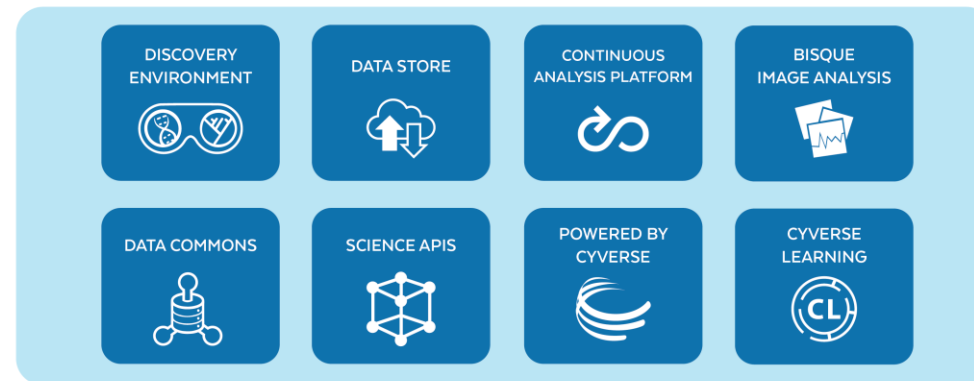
<https://www.tugraz.at/sites/rdm/tools/cyverse/>

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www.cyverse.org

CYBERINFRASTRUCTURE

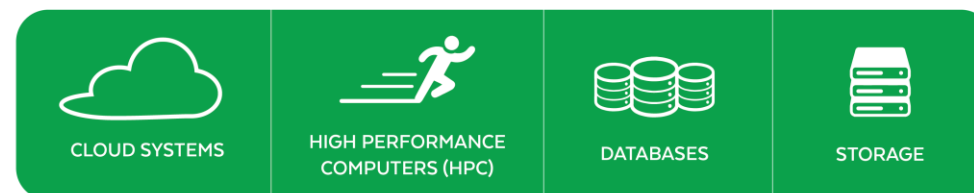
PRODUCTS



SERVICES

FEDERATED STORAGE	SINGLE SIGN-ON	VIRTUALIZATION	CONTAINER ORCHESTRATION	JOB SCHEDULING	NATIONAL CI
iRODS	CAS KEYCLOAK OAUTH 2	OPENSTACK	KUBERNETES	CONDOR	XSEDE

HARDWARE RESOURCES



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CYVERSE AUSTRIA

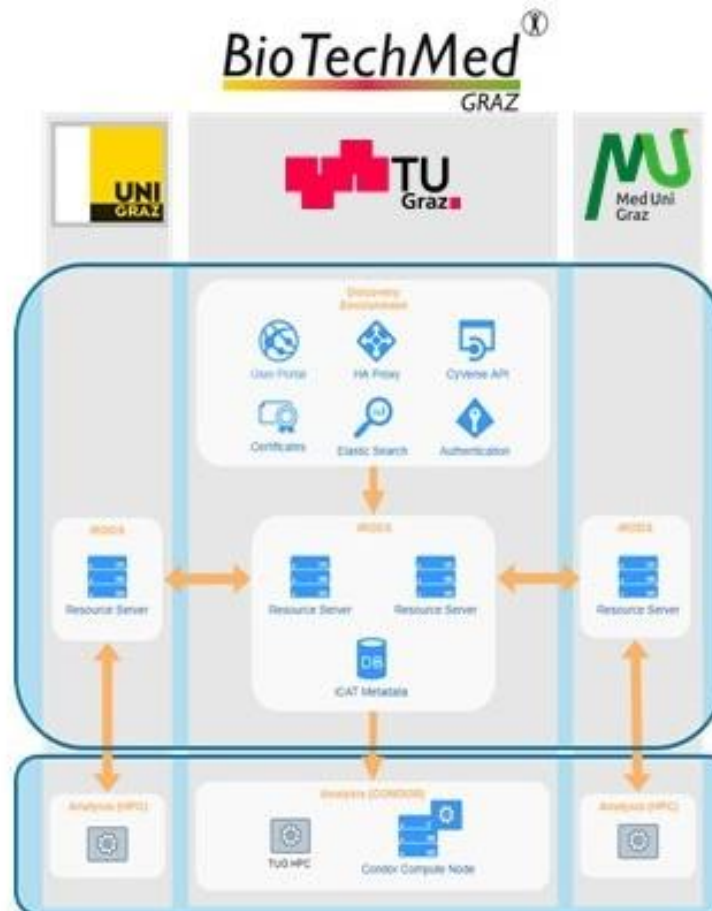
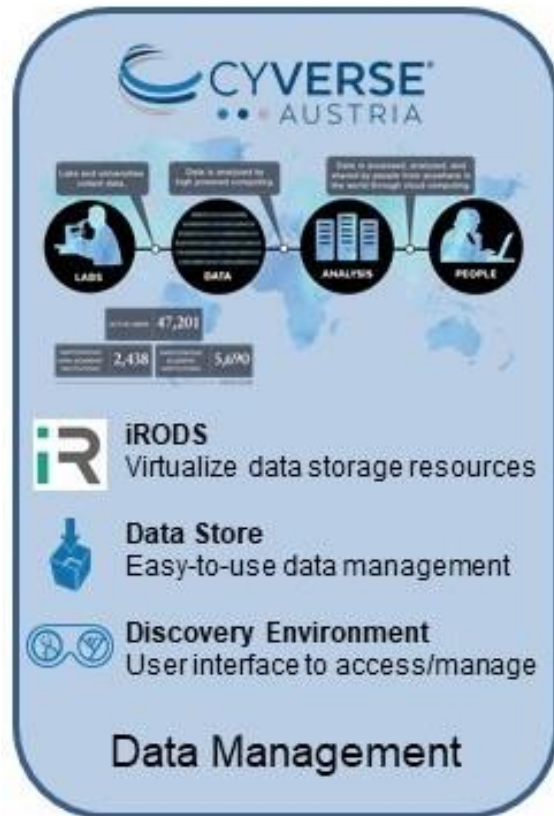
CAT Austria as collaborative project funded by BioTechMed-Graz 2018-2021,
implemented end of 2019 - Team behind:

Stefanie Lindstaedt, Manfred Stepponat, David Garcia de Marina, Sarah Stryeck, Konrad Lang, Richard Hohensinner



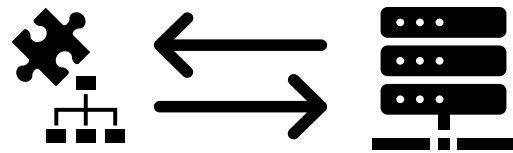
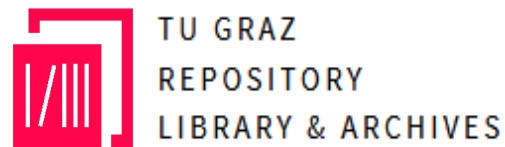
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CYVERSE AUSTRIA & BIOTECHMED



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OUTLOOK FUTURE IMPLEMENTATIONS

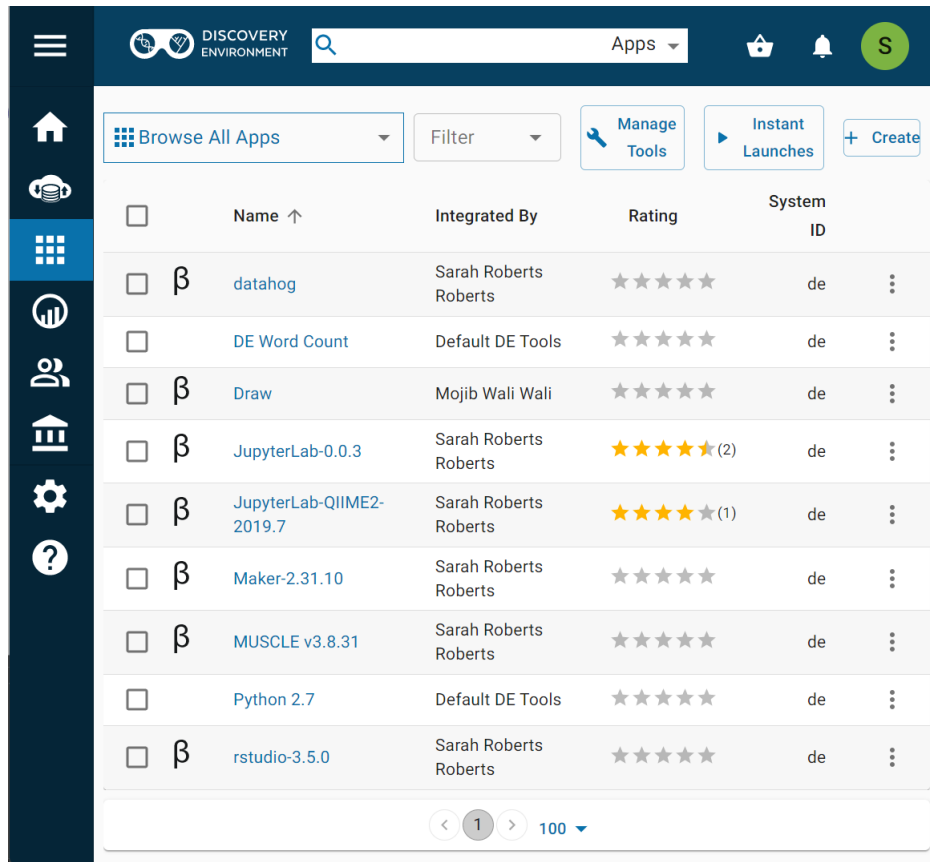


- Connection between CyVerse and **InvenioRDM**
- Connection between CyVerse and **eLabFTW**
- Integration of **additional** Apps
- **Connection** to other platforms

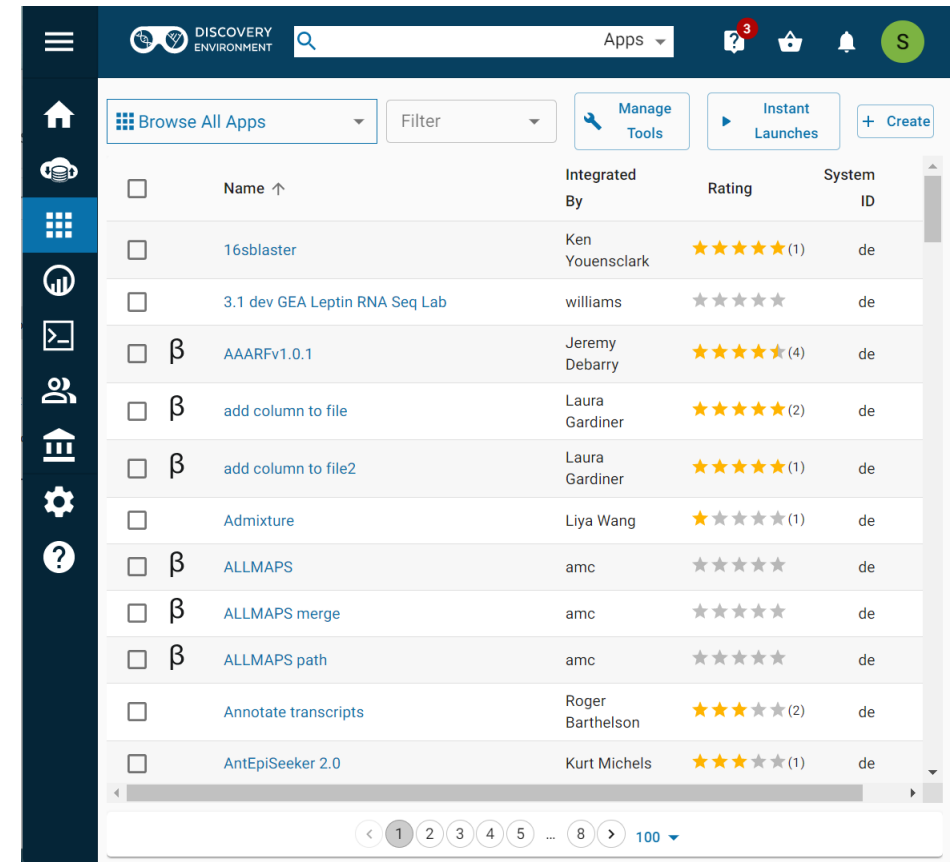
<https://www.tugraz.at/sites/rdm/tools/>
<https://repository.tugraz.at>

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OUTLOOK FUTURE IMPLEMENTATIONS



<input type="checkbox"/>	Name ↑	Integrated By	Rating	System ID
<input type="checkbox"/>	β datahog	Sarah Roberts Roberts	★★★★★	de
<input type="checkbox"/>	DE Word Count	Default DE Tools	★★★★★	de
<input type="checkbox"/>	β Draw	Mojib Wali Wali	★★★★★	de
<input type="checkbox"/>	β JupyterLab-0.0.3	Sarah Roberts Roberts	★★★★★(2)	de
<input type="checkbox"/>	β JupyterLab-QIIME2-2019.7	Sarah Roberts Roberts	★★★★★(1)	de
<input type="checkbox"/>	β Maker-2.31.10	Sarah Roberts Roberts	★★★★★	de
<input type="checkbox"/>	β MUSCLE v3.8.31	Sarah Roberts Roberts	★★★★★	de
<input type="checkbox"/>	Python 2.7	Default DE Tools	★★★★★	de
<input type="checkbox"/>	β rstudio-3.5.0	Sarah Roberts Roberts	★★★★★	de



<input type="checkbox"/>	Name ↑	Integrated By	Rating	System ID
<input type="checkbox"/>	16sblaster	Ken Youensclark	★★★★★(1)	de
<input type="checkbox"/>	3.1 dev GEA Leptin RNA Seq Lab	williams	★★★★★	de
<input type="checkbox"/>	β AAARFv1.0.1	Jeremy Debarry	★★★★★(4)	de
<input type="checkbox"/>	β add column to file	Laura Gardiner	★★★★★(2)	de
<input type="checkbox"/>	β add column to file2	Laura Gardiner	★★★★★(1)	de
<input type="checkbox"/>	Admixture	Liya Wang	★★★★★(1)	de
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<input type="checkbox"/>	β ALLMAPS path	amc	★★★★★	de
<input type="checkbox"/>	Annotate transcripts	Roger Barthelson	★★★★★(2)	de
<input type="checkbox"/>	AntEpiSeeker 2.0	Kurt Michels	★★★★★(1)	de

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RDM TEAM @ TU GRAZ

rdmteam@tugraz.at



Ilire Hasani-Mavriqi
Head of RDM Team

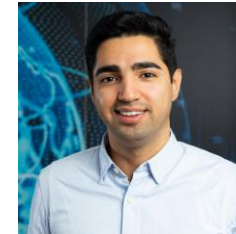
Hermann Schranzhofer
Data steward



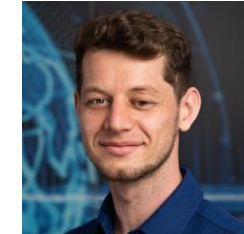
Alexander Gruber
Data steward



Claire Jean-Quartier
Data steward



Mojib Wali
Technical lead



David Eckard
Software developer



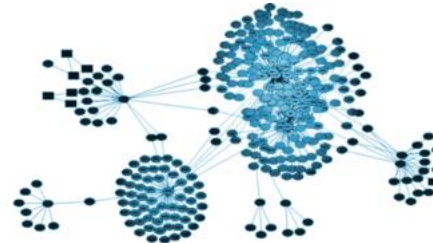
Miguel Rey Mazón
Project Manager

<https://www.tugraz.at/sites/rdm/support/rdm-team/>

SAVE THE DATE

Innovative Data Environment at Styria

- May, 9th 2022, 11-12 am



<https://ideas.tugraz.at>

SAVE THE DATE

Licenses for Research Data

- May, 19th 2022, 10-11 am



KONTAKT

fairdata_wp1@mlist.tugraz.at

forschungsdaten.at/projekte/fda/