

The German ELIXIR Node

10th November 2026, Vienna

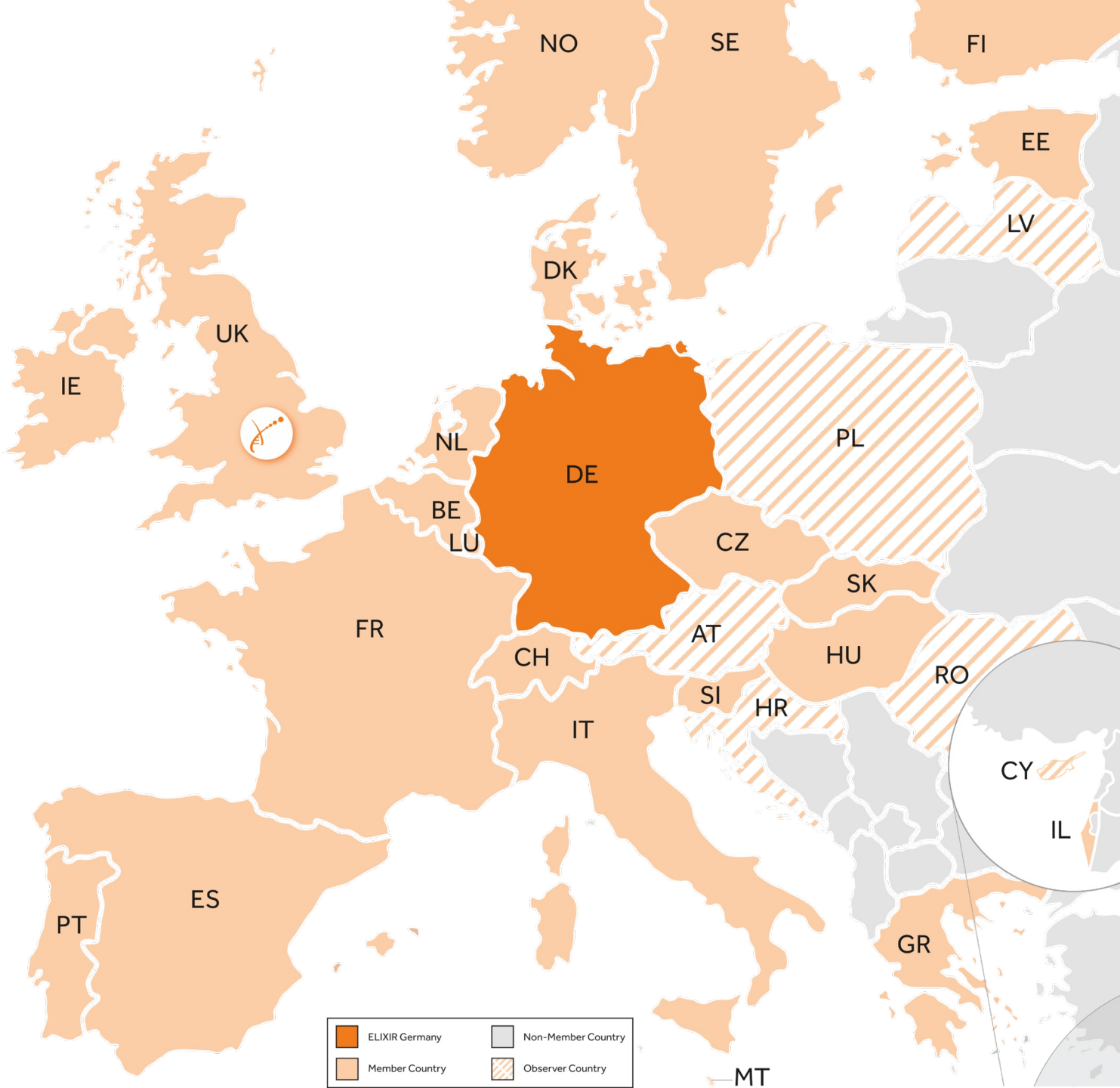
***Alexander Sczyrba**, HoN, Forschungszentrum Jülich*
***Oliver Kohlbacher**, HoN, University of Tübingen*
***Irena Maus**, NoC, Forschungszentrum Jülich*

elixir-europe.org

The German ELIXIR Node

- **German Network for Bioinformatics Infrastructure (de.NBI),** national network established 2015

- **Since 2016** de.NBI represents **ELIXIR Germany**



The Scale and Complexity of de.NBI

- 01 Representing Entity - Forschungszentrum Jülich
- 24 Contractual partners
- 08 Thematic Service Centers
- 150 Members
- Scientific foc
  - Humar
  - Microb
  - Plant B
  - RNA Bi
  - Bioinformatics for Proteomics
  - Integrative Bioinformatics
  - Reference Databases
  - Data Management and Systems Biology

It has been a long journey to get where we are today.

The path wasn't easy, but it was absolutely worth it!

... for nearly a decade, we have been shaping and growing the network.



>> www.denbi.de

The evolution of ELIXIR Germany



Alexander Sczyrba
Head of Node



Oliver Kohlbacher
Head of Node



Irena Maus
Node Coordinator

de.NBI

Launch of the BMBF project - **de.NBI**

March — 2015

August — 2016

Signing the ELIXIR Germany **Consortium Agreement**

July — 2016

Establishment of **de.NBI Cloud**

November — 2019

Launch of the de.NBI Industrial Forum

elixir GERMANY

Signing the ELIXIR **Collaboration Agreement**

February — 2020

December — 2020

German government secures **long-term funding** for de.NBI (ELIXIR Germany) through the **Helmholtz Association**

JÜLICH Forschungszentrum

End of the BMBF project & transition to FZ Jülich

December — 2021

December — 2023

Reassembled consortium & updated Service Delivery Plan

January — 2024

December — 2024

Renewed ELIXIR Collaboration Agreement

September — 2025

SAB renewed

2022 2026

de.NBI BMBF project

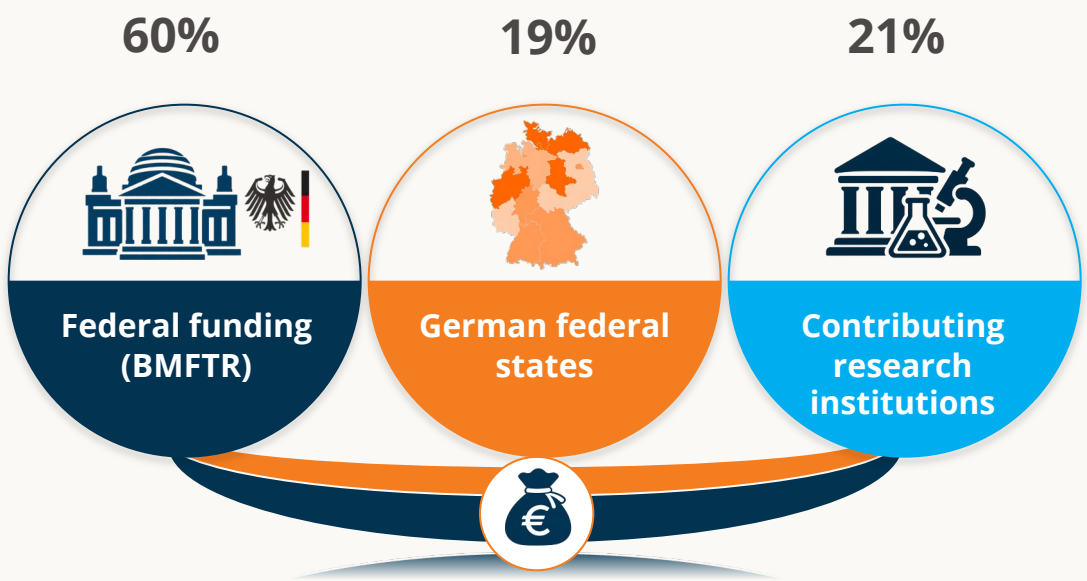
Federal Ministry of Education and Research

Restructuring

de.NBI (ELIXIR-DE) 2.0

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The Funding Model



- **2015 - 2021:** de.NBI received federal project funding from German Ministry of Research and Education (BMBF)
- **2021 - 2022:** Node restructuring, again with temporary federal funding
- **Since 2024:** Transition to long-term funding consisting of:
  - Federal (BMFTR) funding via the Helmholtz Association
  - Funding from several German federal states
  - Matching funds from contributing research institutions
    - Current total operating budget around 11.1 M€/year (federal and state) + 5.5 M€/year (institutional) funding

Service Portfolio of the German Node



Software & Data

115 bioinformatics tools, workflows, databases, and consulting services for the life sciences



Training

Bioinformatics training with a broad range of courses



de.NBI Cloud

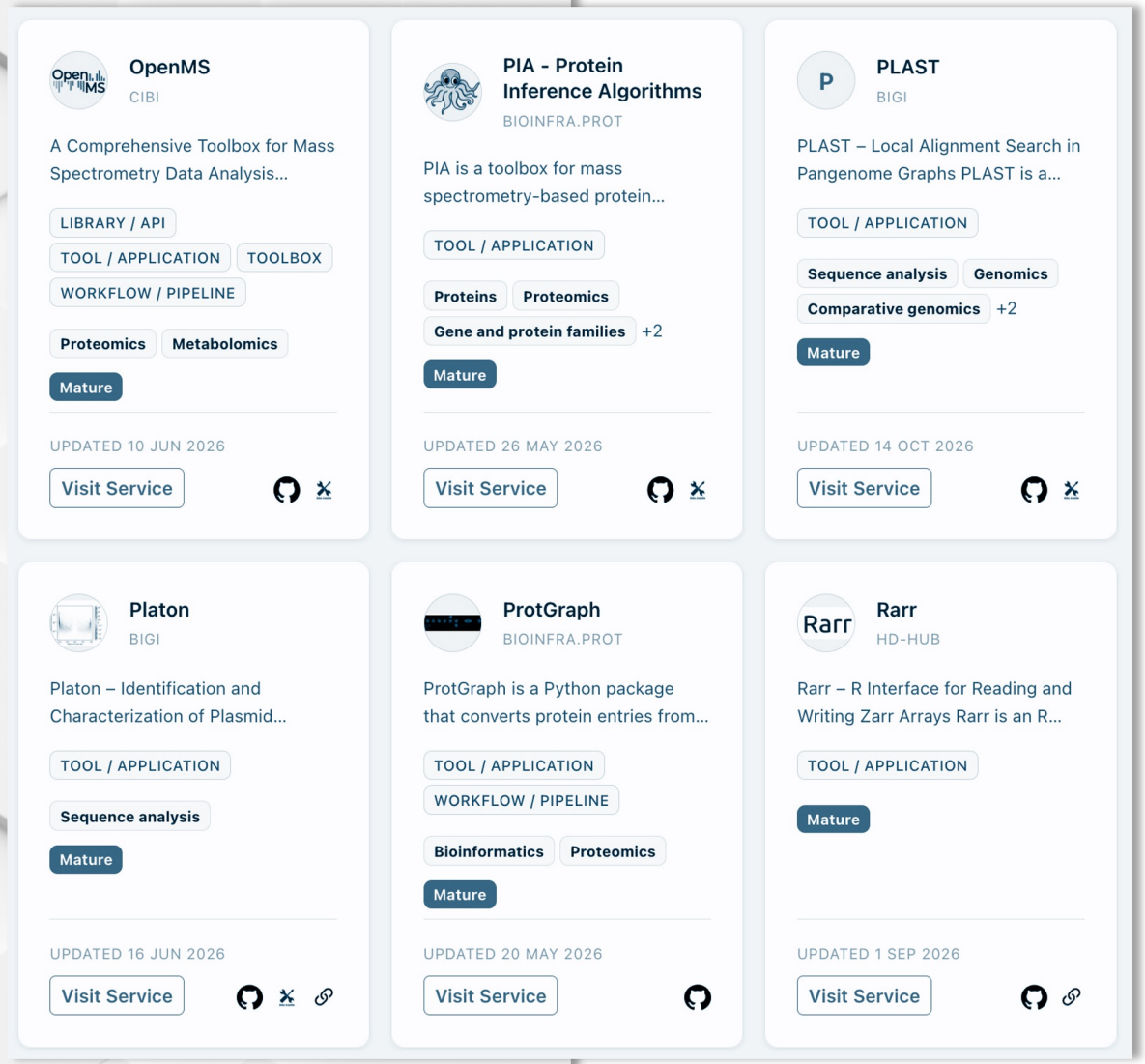
Compute resources for academia in Germany free of charge



Industrial Forum

Transfer of expertise between academia and industry

Software & Data Categories



OpenMS
CIBI

A Comprehensive Toolbox for Mass Spectrometry Data Analysis...

LIBRARY / API
TOOL / APPLICATION
TOOLBOX
WORKFLOW / PIPELINE

Proteomics
Metabolomics

Mature

UPDATED 10 JUN 2026

Visit Service

PIA - Protein Inference Algorithms
BIOINFRA.PROT

PIA is a toolbox for mass spectrometry-based protein...

TOOL / APPLICATION

Proteins
Proteomics
Gene and protein families +2

Mature

UPDATED 26 MAY 2026

Visit Service

PLAST
BIGI

PLAST – Local Alignment Search in Pangenome Graphs PLAST is a...

TOOL / APPLICATION

Sequence analysis
Genomics
Comparative genomics +2

Mature

UPDATED 14 OCT 2026

Visit Service

Platon
BIGI

Platon – Identification and Characterization of Plasmid...

TOOL / APPLICATION

Sequence analysis

Mature

UPDATED 16 JUN 2026

Visit Service

ProtGraph
BIOINFRA.PROT

ProtGraph is a Python package that converts protein entries from...

TOOL / APPLICATION
WORKFLOW / PIPELINE

Bioinformatics
Proteomics

Mature

UPDATED 20 MAY 2026

Visit Service

Rarr
HD-HUB

Rarr – R Interface for Reading and Writing Zarr Arrays Rarr is an R...

TOOL / APPLICATION

Mature

UPDATED 1 SEP 2026

Visit Service

- **Workflow / Pipeline**
- **Web application**
- **Toolbox**
- **Tool / Application**
- **Library / API**
- **Database**
- **Consulting / Support**

https://www.denbi.de/services

Services are provided by network partners

From Resources (Services) to Research Impact

Core services supporting the scientific community through two initiatives



>> https://elixir-europe.org/platforms/data/core-data-resources
>> https://globalbiodata.org/what-we-do/global-core-biodata-resources/list-of-current-global-core-biodata-resources/

The de.NBI Cloud

LS LOGIN ⟷ eduGAIN

LinkedIn
Apple
Google
ORCID
GitHub
LifeScience Hostel

Registration and Login

- LifeScience Login account and membership in the de.NBI Virtual organisation is needed
- account usable for authentication in the Cloud

Submit an Application

- select a project type and resources of your need
- submit the application naming a responsible PI for the project

Review Process

- review by the Cloud Access Committee
- frequent updates on the review process
- resources get allocated

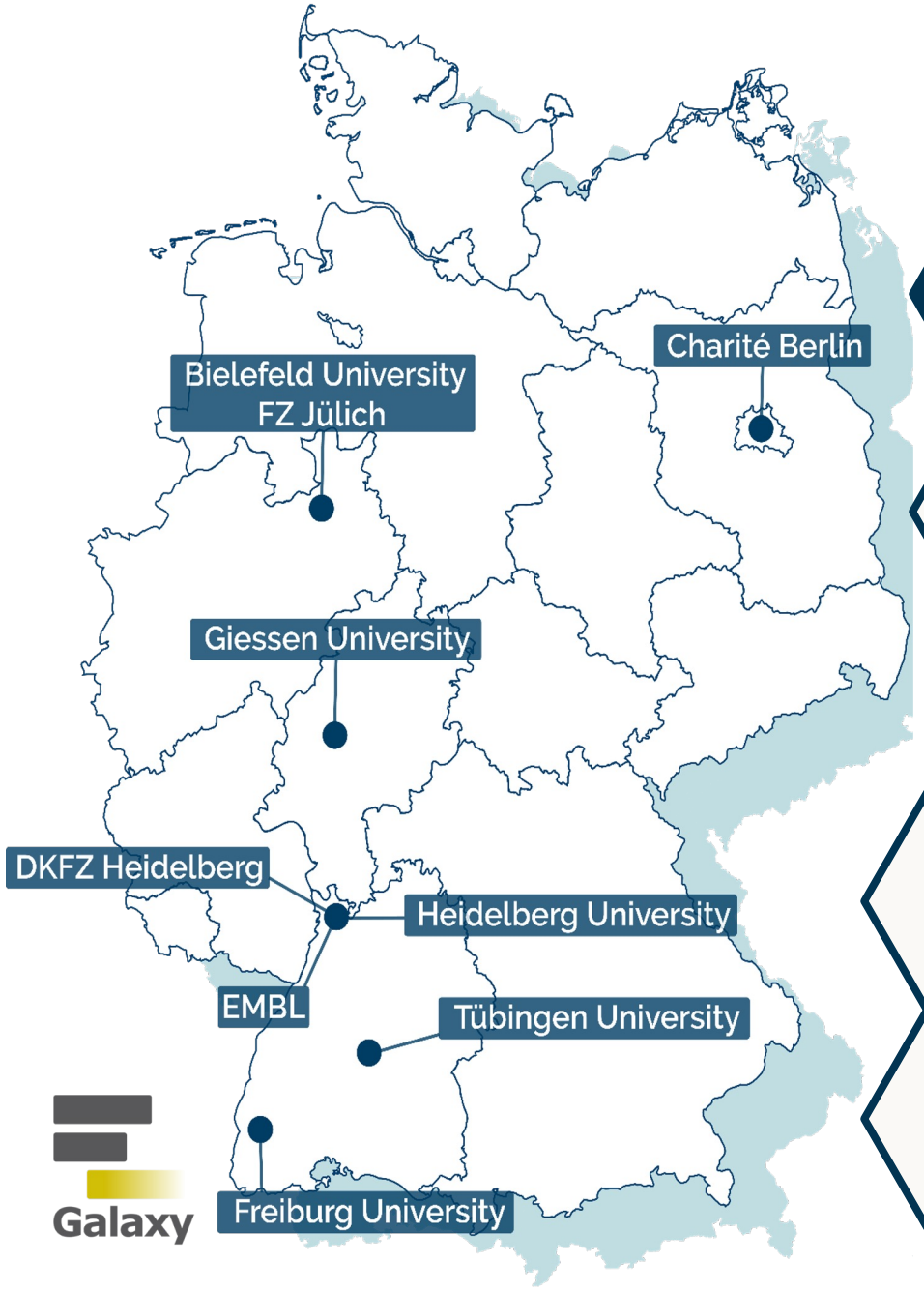
Use the Resources

- make use of the resources
- manage access to the project
- modify resources if needed

https://cloud.denbi.de/

LIFE SCIENCE RI
Perun

openstack.
kubernetes
SimpleVM



Galaxy

over 69,000 CPU cores
780 TB RAM
100 PB storage
720 TB SSD storage
over 500 GPUs

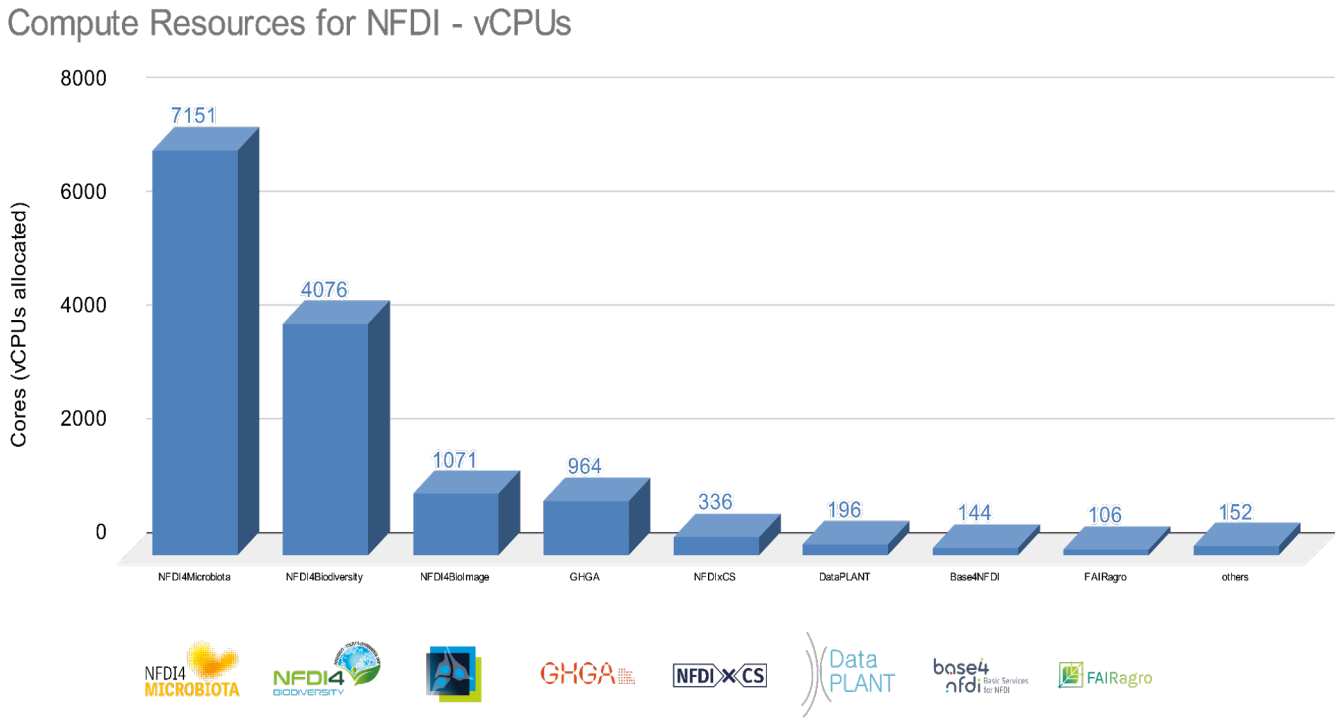
9 annual cloud user meetings
5,800+ Users
1,865+ projects
2,250+ publications reference the de.NBI Cloud

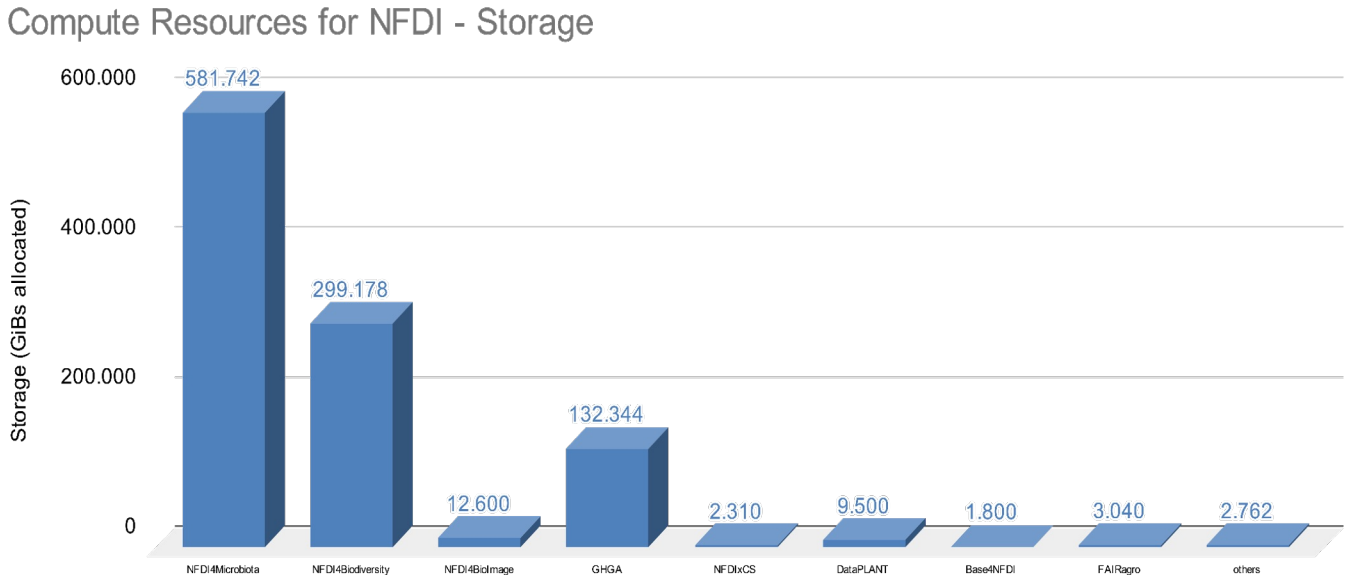
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Providing Resources for the National Research Data Infrastructure (NFDI)

is an important German initiative to develop sustainable, FAIR research data services

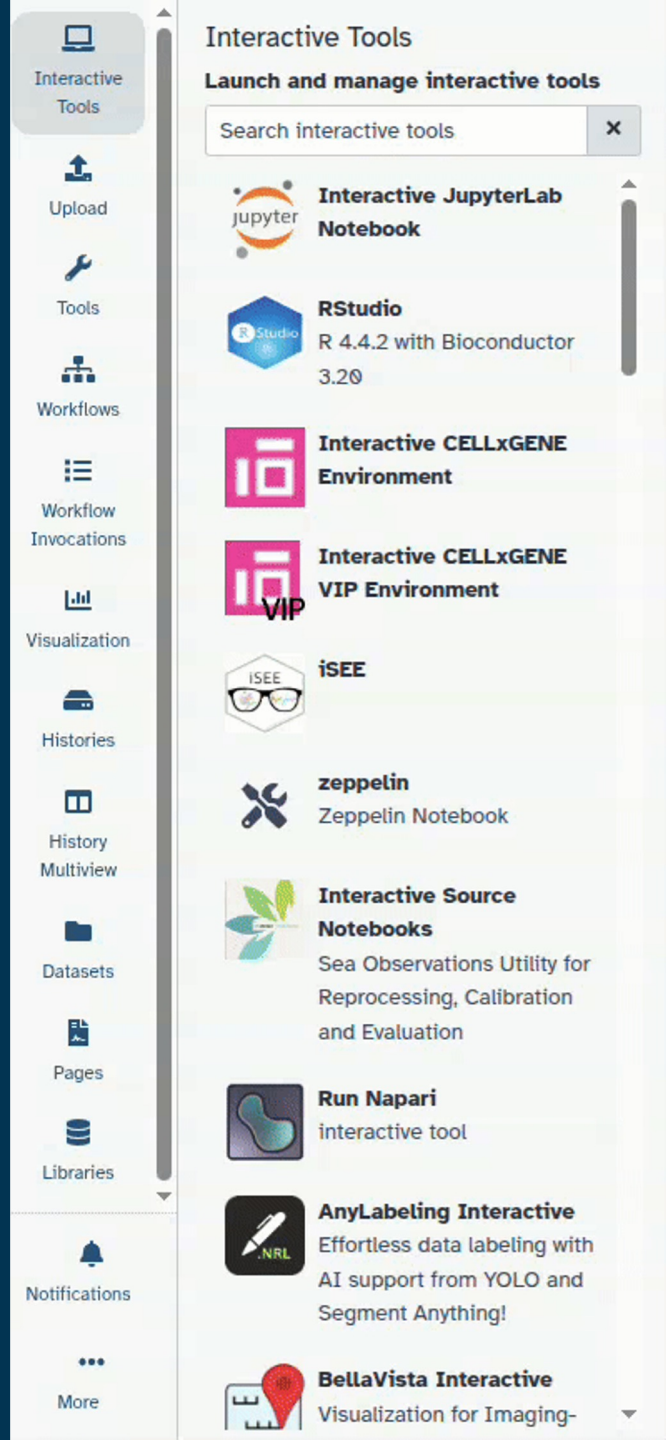
- Organized in **27 domain-specific consortia** across scientific disciplines
- Selected NFDI consortia use **de.NBI Cloud** for **compute & storage**
- Shared goals and efficient use of resources: FAIR data, interoperability, reproducibility & community support





The Galaxy Project

- **Open Source,** web-based platform for data-intensive biomedical research since **2005**.
- First version **20 years** ago
- **Accessing** & **sharing** data, tools, workflows
- **4,000** tools, 50 VREs on the European Galaxy server
- Cross-disciplinary
- Multiple interfaces
  - Intuitive web portals for scientists without programming skills
  - Unified API for bioinformaticians
- **International**: 300+ public instances, **190,000** users, 21,000+ citations



Slide provided by Dr. Björn Grüning, Freiburg University, DE

Training numbers since 2015

~ 350 trainers

70% once in a training course, 5% provide more than 5 courses

~ 550 training courses

diverse training course portfolio, almost gapless

~ 16,000 participants since 2015!

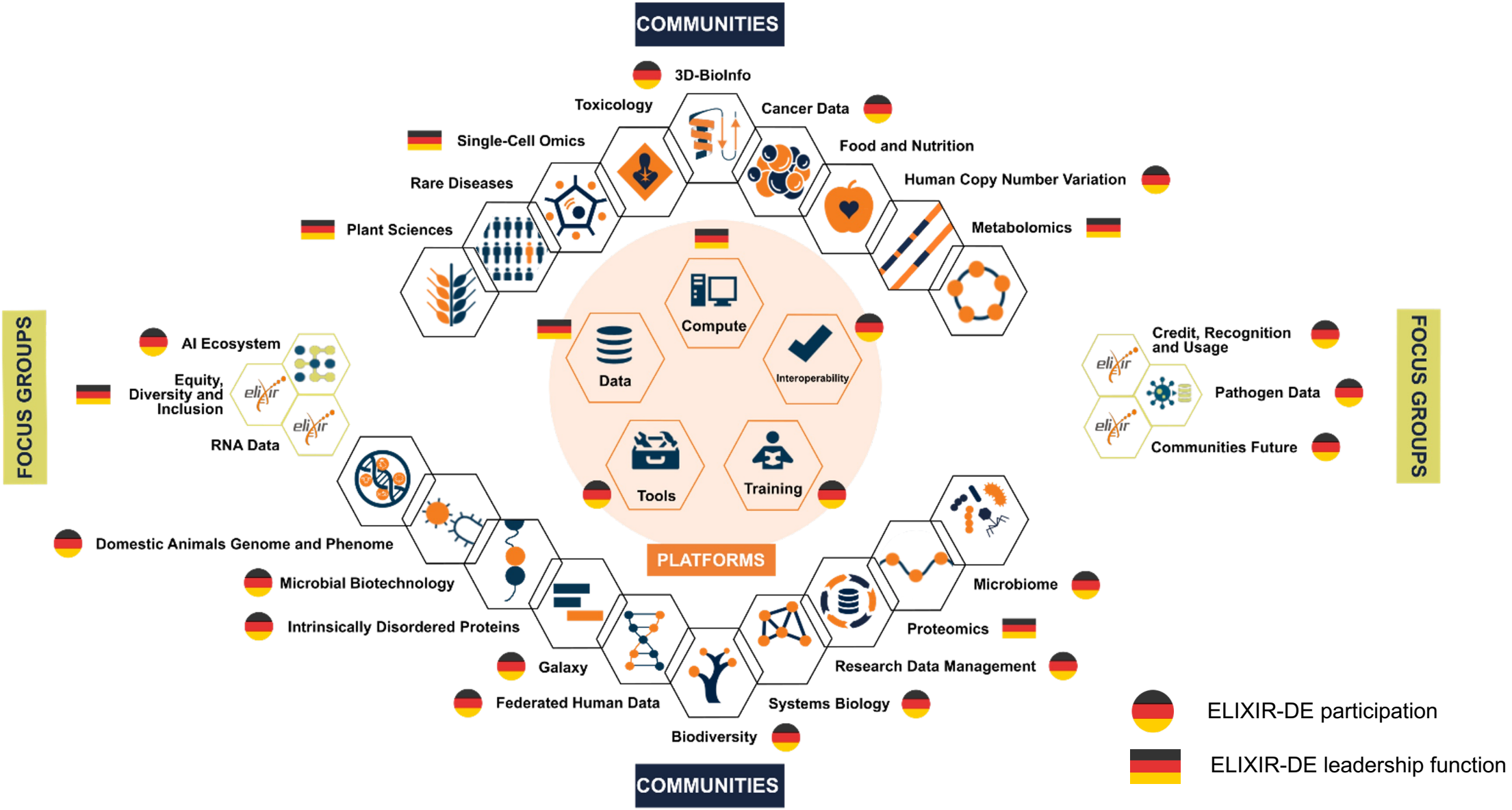
~50% PhD students, ~40% Postdocs, ~8% undergrads, ~1% industry

~ 89% recommendation rate

~85% very good or excellent votes, feedback from 3,458 participants



German Contributions and Activities within ELIXIR



Germany's Contribution to Shaping the ELIXIR Programme 2024-26

Biodiversity, food security and pathogens (**BFSP**)

Cellular and molecular research (**CMR**)

Human Data and translational research (**HD**)

23 projects ongoing

17 with DE participation

7 co-led by DE

1.05M€ budget secured through ELIXIR CoS (2024-26)

Commissioned Services	Science	Technology	Node	People
E-PAN	✓			
FAIRyMAGs	✓			
HARVEST (co-lead)	✓			
Odyssey				
Functional ontologies				
DBTLHub				
Spatial2Galaxy	✓			
Metabolomics	✓			
FAIR-FEGA				
FHDportal				
RO-Crates				
Orchestrating Sensitive Data	✓			
FEGA-Connect	✓			
Tools (co-lead)		✓		
Training		✓		
Data (co-lead)		✓		
Compute (co-lead)		✓		
Interoperability		✓		
Infrastructure Service (co-lead)		✓		
Node Service			✓	
PeoplePulse (co-lead)				✓
Train-the-Trainer				✓
ELEAD (co-lead)				✓

A Decade of Challenges, Growth & Lessons Learned

- Navigating complex ELIXIR ecosystem.
- Positioning national expertise at the European level.
- Maintaining effective communication.

Finding our place (2016 - 2019)

Growing together (2020 - 2022)

- Aligning partners & maintaining quality
- Shared standards, knowledge transfer, and communication were essential.

Securing our future (2022 - 2026)

Sustainability requires persistence, strategic alignment, and strong partnerships.

Building a sustainable research infrastructure is a marathon, NOT a sprint!

ELIXIR People: A Story of Impact

A (personal) story being an ELIXIR Plant Community Co-Lead



Dr. Sebastian Beier
Forschungszentrum Jülich

ELIXIR Plant Sciences Community Co-Lead

S. Beier's Journey with ELIXIR since 2018:

- **Getting started (2018):** Supported a **Plant Sciences Commissioned Service** and developed RDM expertise through knowledge exchange within ELIXIR.
- **Training:** Contributed to workshops and training activities across Europe.
- **Community engagement:** Participated in and (co-)led projects at ELIXIR BioHackathons.
- **Leadership & strategy: since 2020 ELIXIR Plant Sciences Community Co-lead**, contributed to strategic discussions across ELIXIR.
- **New opportunities:** Built a strong European network, opening **doors to EU-funded projects** and international collaborations.

Key takeaway: ELIXIR connects people, builds expertise, and creates opportunities!



ELIXIR All Hands 2022, Amsterdam, NL



BioHackathon Europe 2025, Berlin, DE



ELIXIR All Hands 2026, Lyon, FR

European Commission

PHENET
PHENOTYPING & ENVIROTYPING SOLUTIONS FOR AGROECOLOGY

AgroServ
Integrated SERvices supporting a sustainable AGROecological transition

{B}{H}
BioHackathon Europe

Why Being Part of ELIXIR Matters

ELIXIR is more than an infrastructure - it's a community that connects people, expertise, and opportunities.

People & Expertise

Build networks and exchange knowledge

European Visibility

Raise national profiles and contribute to European priorities.

Resources & Collaboration

Share tools, data, expertise, and **jointly developed solutions**.

Funding & Impact

European Commission

Create opportunities for joint **European projects** and increase research impact.



Please follow de.NBI (ELIXIR Germany) on social media



Acknowledgements

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JÜLICH Forschungszentrum

Federal Ministry of Research, Technology and Space