

ELIXIR Belgium

looking forward

Kim De Ruyck
Coordinator ELIXIR Belgium

Empowering Biodiversity Research conference, 24-25 May 2022

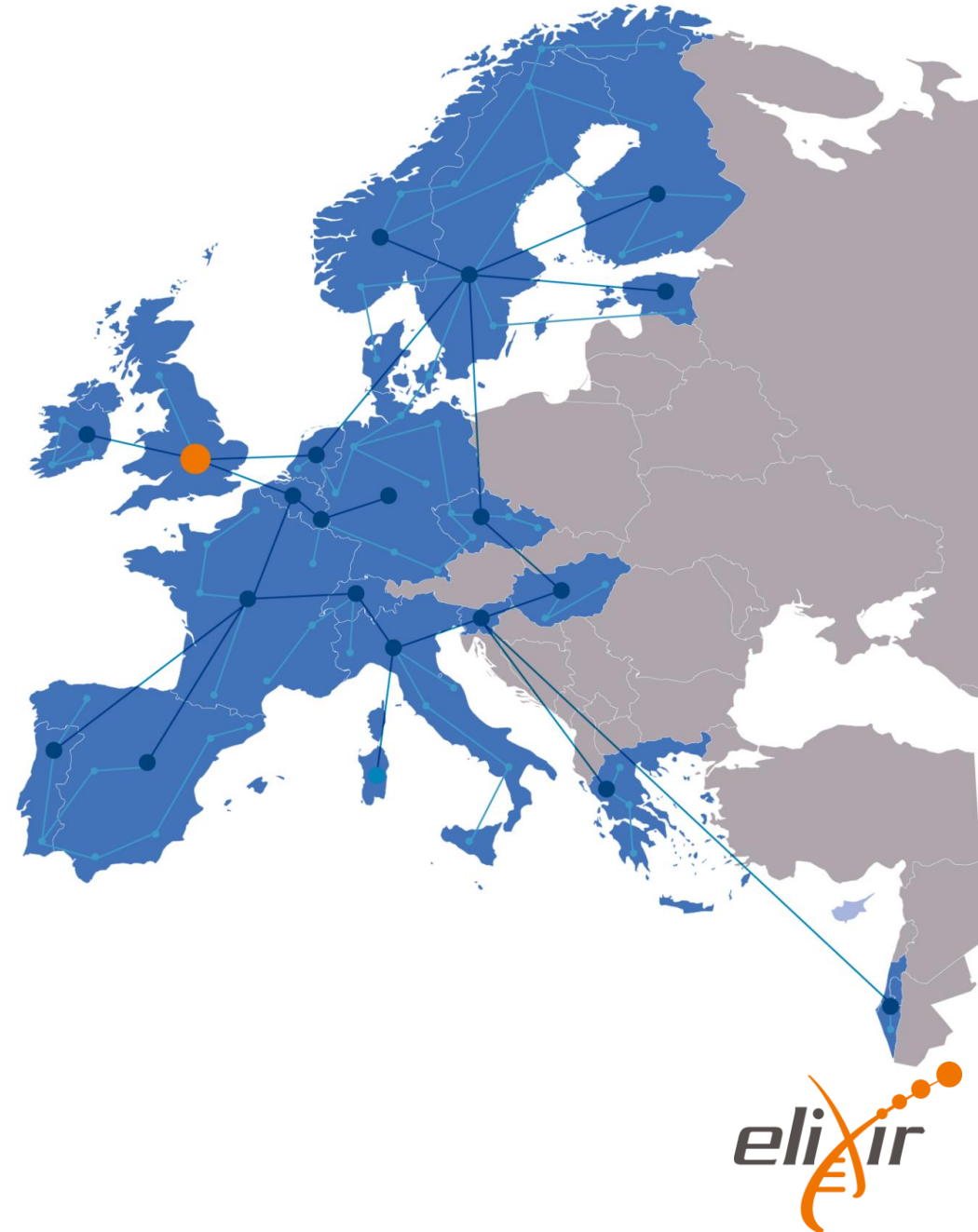


ELIXIR

ELIXIR is an intergovernmental organisation that brings together life science resources such as **databases, software tools, training materials, standards** and **compute resources**, from across Europe.

The goal of ELIXIR is to **coordinate life science resources from across Europe so they form a single infrastructure**. This makes it easier for scientists to:

- Find and share data
- Exchange expertise
- Agree on best practices in scientific research

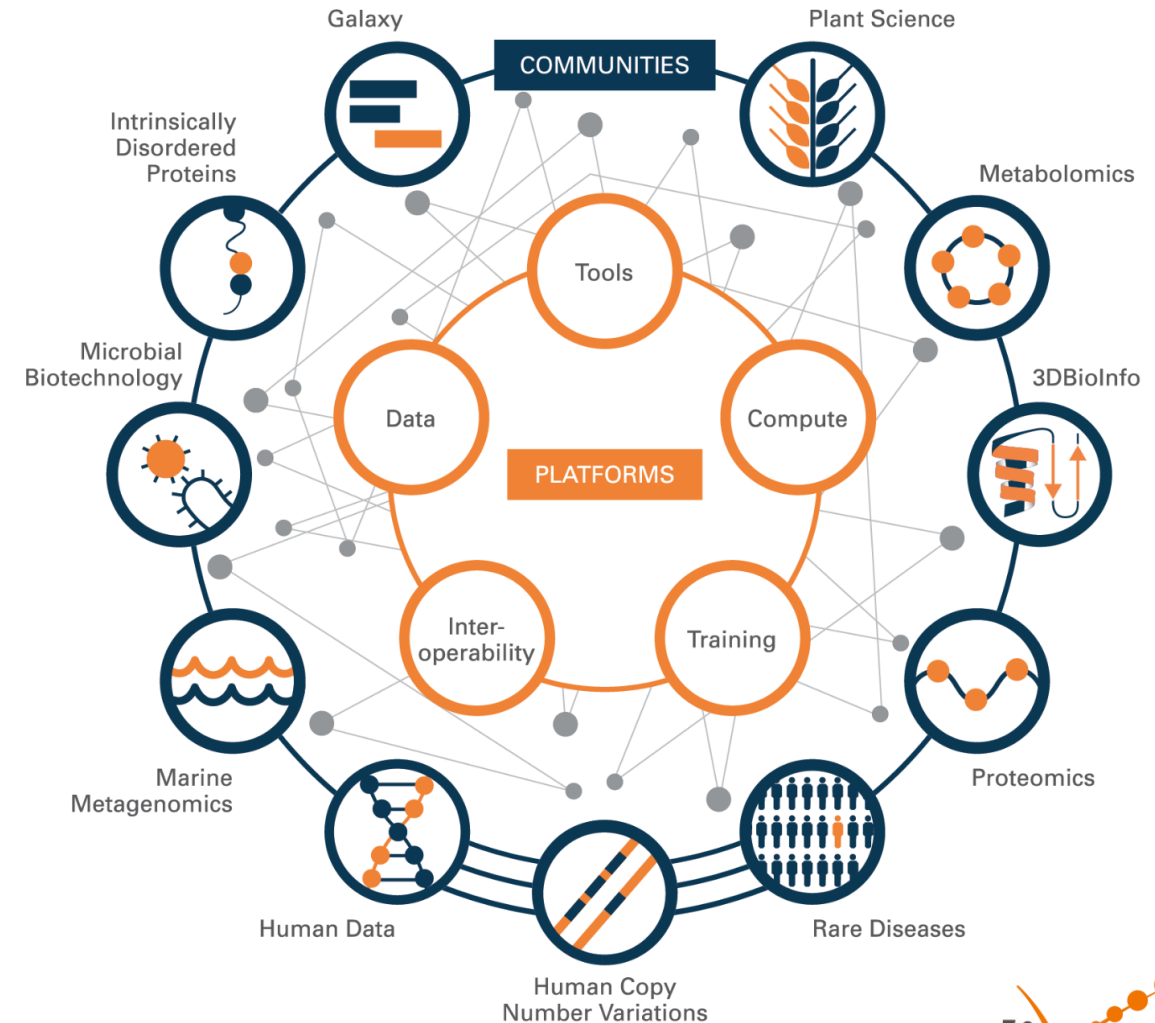


ELIXIR's work

ELIXIR coordinates activities through at least one of the five areas of activities called **Platforms**:

- Compute
- Data
- Interoperability
- Tools
- Training

These Platforms are driven by thirteen ELIXIR **Communities** which develop standards, services, and training within their life science domains.



Focus Groups

- Biocuration
- **Biodiversity**
- Cancer Data
- EOSC
- FAIR Training
- Health Data
- Impact
- Innovation and Industry
- Machine Learning (AI)
- Registries
- Research Data Alliance (RDA) Activities
- Systems Biology

Open to any member of ELIXIR

Current activities

- [Support page](#) with tools and services that can be used for Biodiversity Research
- Opinion piece on the opportunities for further infrastructure development in the field
- Beneficiaries in the [BiCIKL project](#)



Partners of ELIXIR Belgium



ELIXIR Belgium Core team



Research Data
Management



Data Analysis
Platforms



Training



COVID-19



Human Data



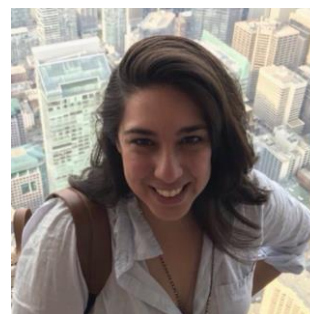
HoN
Frederik Coppens



NC, dHoN
Kim De Ruyck



TrC
Alexander Botzki



Trainer
Bruna Pierecka



Galaxy
Ignacio Eguinoa



Galaxy
Paul De Geest



Data Steward
Flora D'Anna



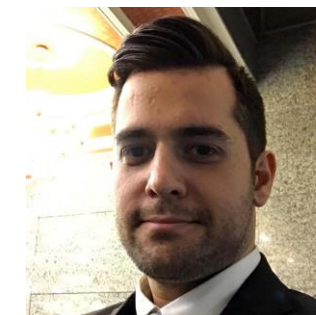
Data Steward
Rafael Buono



Human data coord.
Miguel Roncoroni



Communications
Alexander Halksworth



FAIRDOM-SEEK
Vahid Kiani



Interfaces
Bert Droesbeke

Research Software Engineers



Our partners



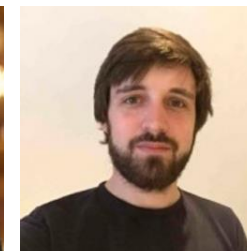
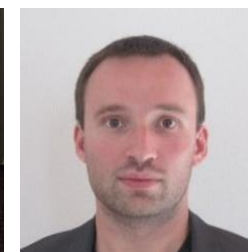
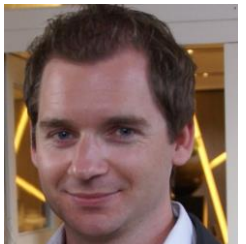
Plant & Biodiversity



Human Data



Functional Genomics





The Research Data Management toolkit for Life Sciences

RDMkit Data management About Contribute GitHub Search RDMkit

- Data life cycle**: Get an overview of the key data management aspects for each stage of the data life cycle.
- Your tasks**: Find guidelines and solutions for tackling common data management tasks.
- Your domain**: Find guidelines and solutions used in your domain or by your research community.
- Tool assembly**: Find combinations of tools assembled into an ecosystem for research data management.
- National resources**: Find pointers to country specific information resources and national RDM practices.
- Your role**: Find resources that are relevant for your job and career path.

<https://rdmkit.elixir-europe.org>



Recommended in the [Horizon Europe Program Guide](#) as the resource for “DM guidelines and good practices for the Life Sciences”.

- Best practices, guidelines, tools and examples for RDM
- Link to registries for more information and similar resources

- Training



- Tools



- Databases, standards, policies



- Link to “how to FAIR” recipes



- Link to decision tree based questionnaire for DMP support





RDMkit community

132

Contributors

The force behind RDMkit

390

Tools & resources

Explained in the context of real world problems

89

Pages

Helping you with data management

Current analytics (last 12 months):

- > 8000 users
- Across European countries and beyond



- RDM experts across ELIXIR EU
- Open contribution and editorial process
 - Contributors
 - Editors
- Based on
 - GitHub
 - ELIXIR Toolkit Theme





RDM Guide: Make your DMP come true

For Belgian researchers

Start with the end (or FAIR data) in mind

Tips & tricks to implement your DMP

What you need to know for managing “omics” data (ELIXIR Recommended Deposition Databases)

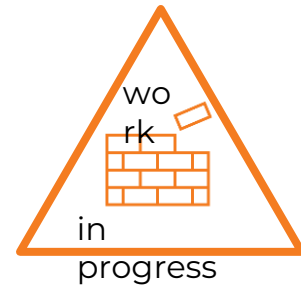
Manual for ENA upload tool




<https://rdm.elixir-belgium.org>



DataHub: (meta)data management platform




DataHub: the better way to manage your data
Free and open platform for easier research data management




Organise & Structure
Organise documents and data to easily manage your research project


[Learn more](#)



Manage access
There is a lot of flexibility and control over who can see, download or edit your items



Standardise research data
Use available standards to describe your dataset and make it ready for publication



Publish & Share data
Publish your data and link them to your scientific article

[Register](#)

Produce FAIR data by design

- Collection of samples level metadata
- ELIXIR Deposition Databases metadata
- The right metadata at the right time
- Easy-to-use graphical user interface

powered by

FAIRDOM



<https://datahub.elixir-belgium.org>

Explore the test version at <https://datahub.test.elixir-belgium.org>



Data analysis

Analysis Platform



Workflows expertise



Federated analysis



EuroScienceGateway



Data analysis



Dedicated presentation tomorrow at 12.10

ERGA - VGP

The European Reference Genome Atlas (ERGA) initiative

The Vertebrate Genome Project (VGP)



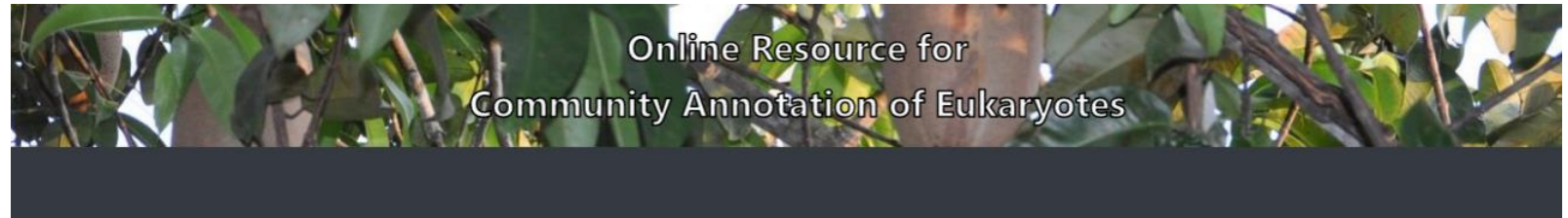
Genome annotation



Plant comparative genomics

ORCAE for genome annotation and curation

- New version & interface
orcae.psb.ugent.be
- Cloud based version
- Link with ENA
- Collaborations:
 - African Orphan Crop Consortium
 - JGI Marine Angiosperm Genome project



ORCAE

Introduction

ORCAE is an online genome annotation resource offering users the necessary tools and information to validate and correct gene annotations. The system is built on the wiki philosophy, all modifications to a certain gene are stored and can be found back in the annotation history of that gene. To be able to modify genes however you will need to have a user account. Anonymous users can browse the public genomes but don't have editing rights.

To get started select one of the genomes from the list below. You can click the key icon button to request write access to a genome.

How to cite this resource

Sterck, L., Billiau, K., Abeel, T., Rouzé, P., Van de Peer, Y.

ORCAE: online resource for community annotation of eukaryotes. *Nat. Methods* (2012) 9, 1041.

Taxa



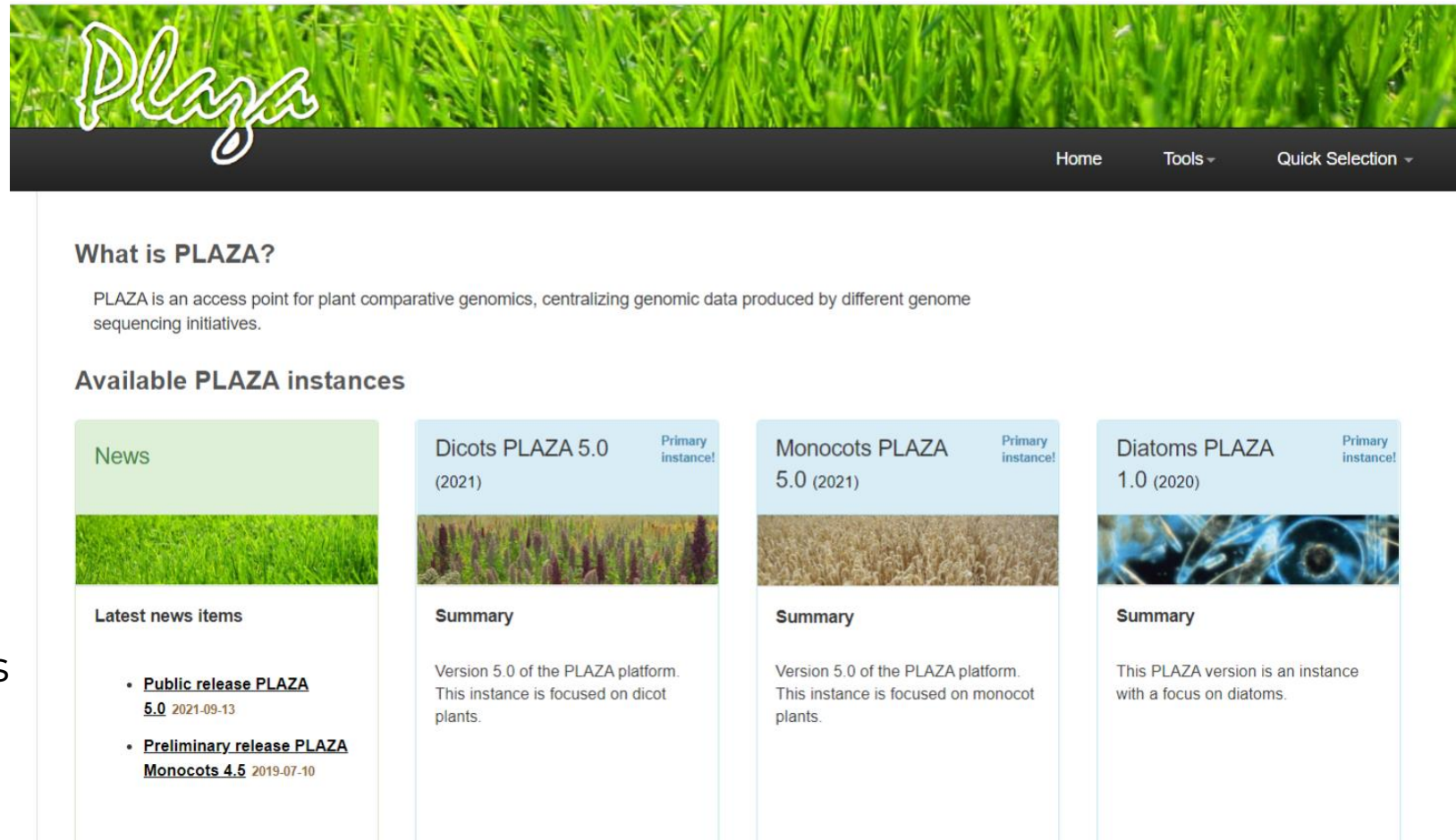
Taxon img

Artal

- ▶ TODO genome admin should enter a welcome summary in the admin interface and adjust the welcome details accordingly

PLAZA for plant comparative genomics

- Integrative analysis: Workbench & API
- Newest iteration: PLAZA 5.0
- Cloud based version
- ELIXIR Recommended Interoperability Resource
 - integration data providers
 - additional ontologies
 - PLAZA genome store



The screenshot shows the PLAZA website homepage. At the top is a green banner with the 'Plaza' logo in white script. Below the banner is a dark navigation bar with 'Home', 'Tools', and 'Quick Selection' links. The main content area is white and features a 'What is PLAZA?' section with a brief description. Below this is a section titled 'Available PLAZA instances' with four columns. The first column is 'News' with a green header and a list of news items. The other three columns are 'Dicots PLAZA 5.0 (2021)', 'Monocots PLAZA 5.0 (2021)', and 'Diatoms PLAZA 1.0 (2020)', each with a light blue header, a 'Primary instance!' badge, a representative image, and a 'Summary' section.

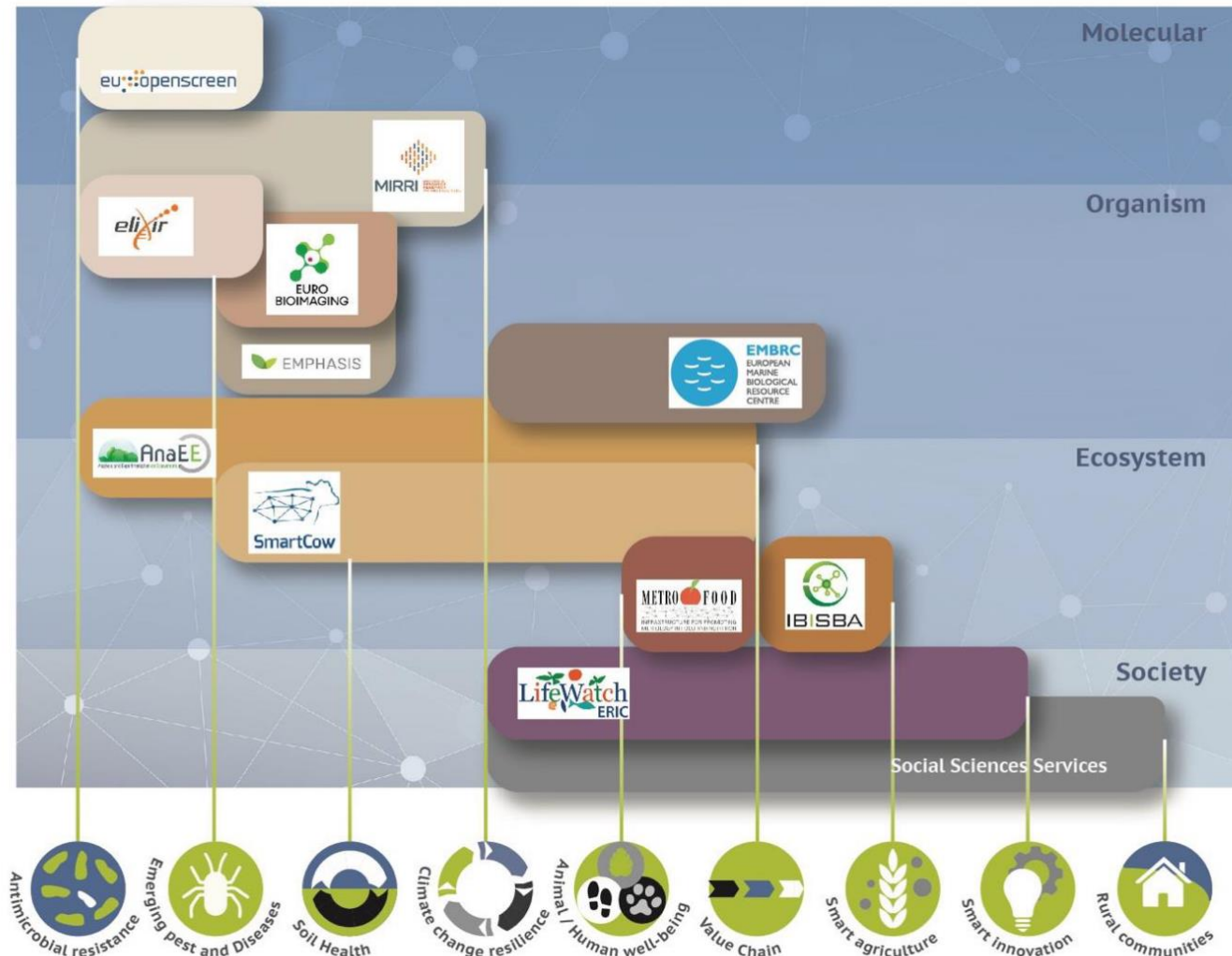
What is PLAZA?

PLAZA is an access point for plant comparative genomics, centralizing genomic data produced by different genome sequencing initiatives.

Available PLAZA instances

News	Dicots PLAZA 5.0 (2021) <small>Primary instance!</small>	Monocots PLAZA 5.0 (2021) <small>Primary instance!</small>	Diatoms PLAZA 1.0 (2020) <small>Primary instance!</small>
Latest news items <ul style="list-style-type: none">● Public release PLAZA 5.0 2021-09-13● Preliminary release PLAZA Monocots 4.5 2019-07-10	Summary <p>Version 5.0 of the PLAZA platform. This instance is focused on dicot plants.</p>	Summary <p>Version 5.0 of the PLAZA platform. This instance is focused on monocot plants.</p>	Summary <p>This PLAZA version is an instance with a focus on diatoms.</p>

AgroServ : Integrated SERViCES supporting a sustainable AGROecological transition



- Large number of RIs
 - AnaEE
 - EMPHASIS
 - EMBRC
 - IBISBA
 - ...
- Starts in September '22

AgroServ : Integrated SERVICES supporting a sustainable AGROecological transition



WP3 : Consolidating integrated data management and analysis services

- Task 3.1 (lead): The AgroServ knowledge hub for **FAIR data management practices** and guidelines (**dedicated content in RDMkit** and link with the FAIR Cookbook and associated ELIXIR registries)
- Task 3.2: **Data deposition/brokering** of experimental and integrative data (rely on established systems that are maintained by RIs (e.g. IBISBAHub, ANAEE DMC), or by international data repositories (e.g. EMBL-EBI) supported by data brokering VA services.)
- Task 3.4: Cloud infrastructure for **data integration and analysis** supporting Virtual Access (**Galaxy**, allow users to integrate, analyse, and model the datasets)



Training

ELIXIR Belgium Courses

Data skills for research

R
Python



Basic skills for
research computing

Command line
Git
Github

Workflow based
analysis improving
reproducibility

Galaxy
Nextflow



nextflow



Node Services

Research data
management



PLAZA
Tabloid Proteomics
more to come...



Containers

Docker
Singularity

Planned

Handling sensitive data (1+MG)
Federated learning for genomic data

15 June '22
Phylogenetics
in Galaxy
workshop

Website - Newsletter

The screenshot shows the ELIXIR Belgium website homepage. At the top, there is a navigation bar with the ELIXIR logo and links for HOME, ABOUT, NEWS, EVENTS, PROJECTS, SERVICES, and TRAINING. A search bar is also present. The main header features a large orange graphic with the text "ELIXIR BELGIUM NODE SERVICE PLAZA" and a sub-headline "The access point for plant comparative, evolutionary, and functional genomics". Below this is a "READ MORE" button. The main content area is titled "ELIXIR Belgium" and contains a paragraph describing the national node's role. Below the text are four service cards: "Research Data Management", "Data Analysis Platforms", "Training", and "Plant & Biodiversity", each with an icon and a brief description.

<https://www.elixir-belgium.org/>

The banner features the ELIXIR logo and the text "March Newsletter". Below the banner are two buttons: "EVENTS" and "CALENDER". The main content area is titled "LATEST NEWS" and features a news item: "ELIXIR BELGIUM FAIR DATA FOR LIFE SCIENCES RESEARCH" dated "MAY 18, 2022". The image shows hands holding yellow puzzle pieces.

We are pleased to invite you for the third ELIXIR Belgium meeting which takes place on 18 May 2022 in Brussels.

A lot of progress has been made in the last two years with many new initiatives arising from various areas. With presentations, panel discussions, ask-me-anything sessions and networking time, this meeting offers a broad range of topics from FAIR data and COVID-19 submission tools, to AlphaFold2 and genomics data sharing. We present not only an overview of our achievements, but also showcase the converging character of existing initiatives and how this can make an enduring change in life sciences research.

This event is free but registration is required.

Registration deadline: 03 May 2022

[Tickets & Info](#)

The banner features the Galaxy logo and the text "FAIR TREES: PHYLOGENETICS IN GALAXY WORKSHOP" dated "15 JUNE, 2022". The background is a dark blue space-themed image with stars.

Currently, phylogenetic analysis using sequence data involves many steps across various bioinformatic tools. This translates into a steep and long learning curve for researchers with limited bioinformatic knowledge, since the majority of these tools run on the command line.



Acknowledgements




VLAAMS
SUPERCOMPUTER
CENTRUM



Vlaanderen
is supercomputing





Get in touch
with us.



info@elixir-belgium.org



<https://www.elixir-belgium.org/>

Visit our booth at the Biodiversity Market

