



# ELIXIR Europe

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Communities & Training*

Biodiversity, Food Security and  
Pathogens support, ELIXIR Hub

Pro-Grace Synergies session  
October 9th 2025

*[elixir-europe.org](https://elixir-europe.org)*

# ELIXIR – what do we do

We build life science informatics **capacity** and **infrastructure** in Europe, connect and develop a **network of experts** and provide hundreds of high quality **services** and **resources** available to all



Databases



Training



Software tools



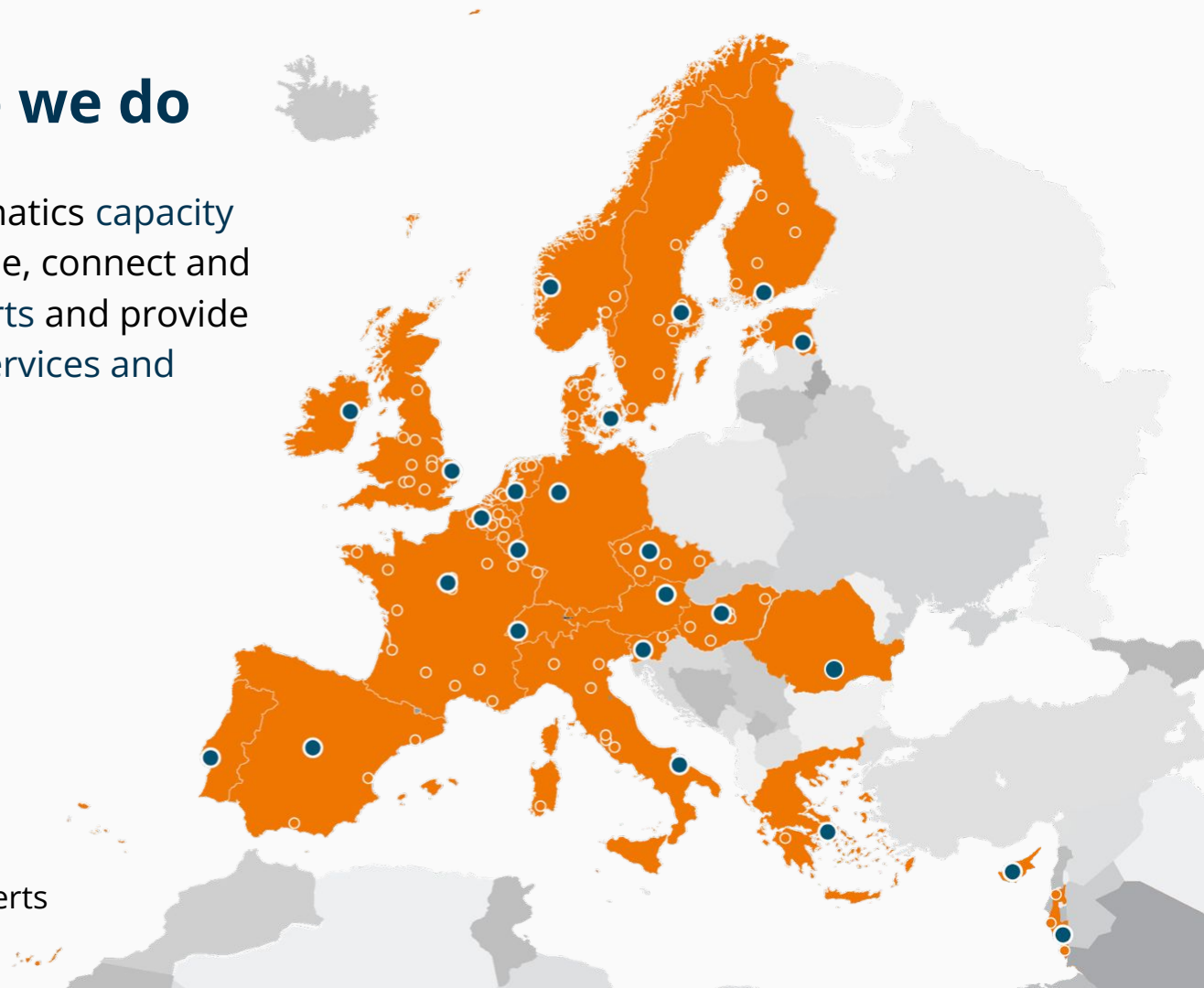
Data standards



Compute resources



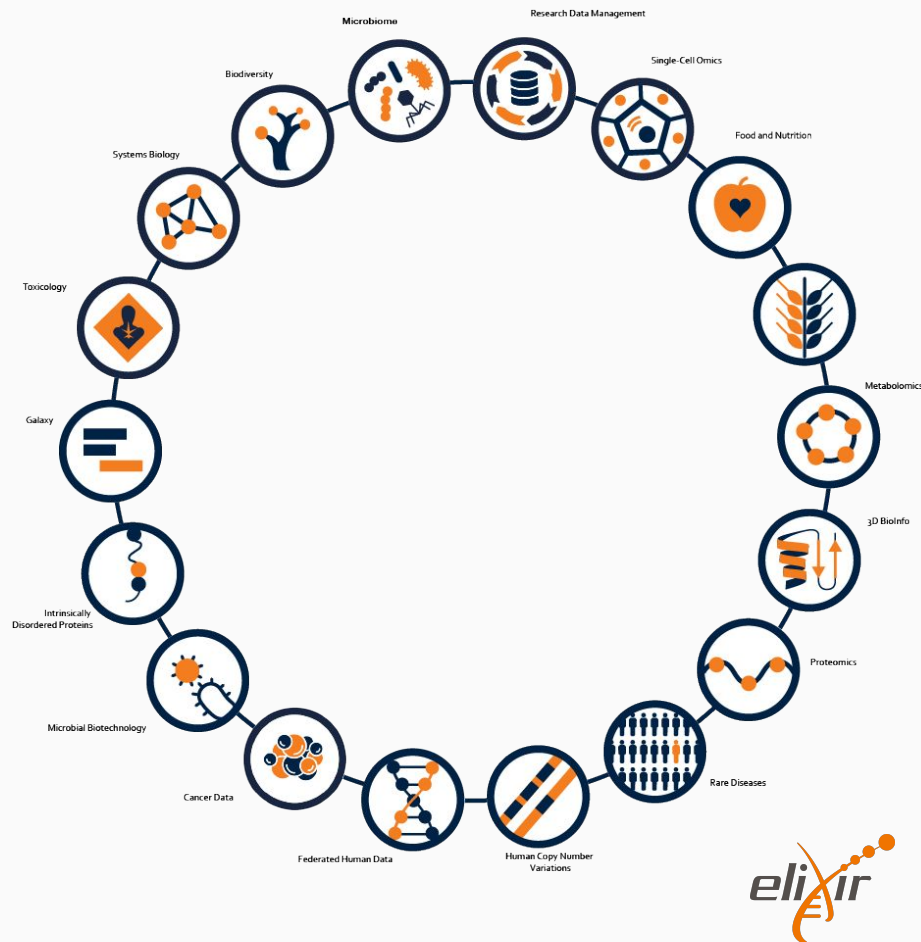
Scientific & technical experts



# ELIXIR's areas of expertise

... of (most) interest to PRO-GRACE

- ELIXIR's Communities Portfolio
  - 18 Communities
    - **Plant Sciences**
    - **Biodiversity**
    - Metabolomics
    - Food & Nutrition
    - Research Data Management
    - Proteomics
    - ...



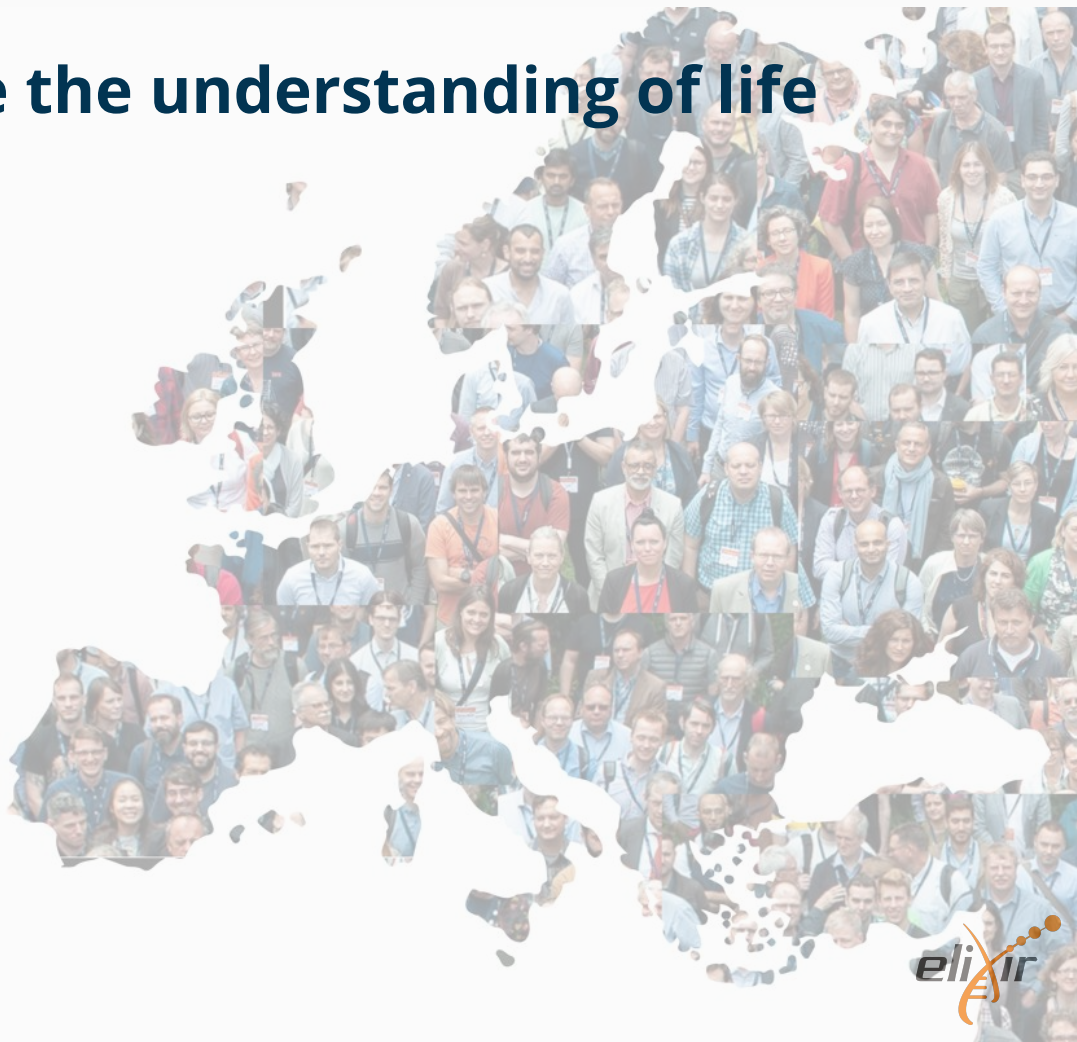
# Together we accelerate the understanding of life

As a foundational **data** infrastructure, we serve science

Life scientists in academia and industry are key stakeholders

Together

We connect **national infrastructures to mobilise data for life sciences** in the European Research Area





# ELIXIR Nodes run almost 500 services for life scientists & bioinformaticians

- Compute services – **cloud, compute, storage and access services**
- Data resources – **sustainable data resources within a scalable, connected ecosystem**
- Interoperability services – **standardisation, metadata and vocabularies**
- Tools – **accessible and benchmarked software tools conforming to information standards**
- Training services – **developing scientific and technical experts and users**
- Multi-Node services – **connecting expertise between ELIXIR national Nodes**



# ELIXIR in the Biodiversity, Food Security and Pathogens space

- **Data brokering solutions:** tools & services supporting data producers to mobilise data
- **Resource interoperability:** technical solutions & common standards connecting data
- **Data discovery & analysis:** software, workflows, & reference datasets supporting researchers

## Read more:

- BFSP work plan: 2024-2026: <https://zenodo.org/records/15130186>
- BFSP strategy: <https://zenodo.org/records/15133254>



The background of the slide is a dark blue field filled with an abstract network diagram. This diagram consists of numerous circular nodes of two colors: orange and light blue. These nodes are interconnected by thin, light blue lines, creating a complex web of connections that spans the entire slide. Some nodes are larger than others, and the lines vary in length and orientation, giving the impression of a dynamic, interconnected system.

## Concrete examples



# Biodiversity Community



F1000Research

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[Home](#) » [Browse](#) » [Recommendations for connecting molecular sequence and biodiversity...](#)

OPINION ARTICLE



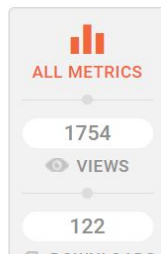
## **REVISED** Recommendations for connecting molecular sequence and biodiversity research infrastructures through ELIXIR [version 2; peer review: 2 approved]

Robert M. Waterhouse<sup>1</sup>, Anne-Françoise Adam-Blondon<sup>2</sup>, Donat Agosti<sup>3</sup>, Petr Baldrian<sup>4</sup>, Bachir Balech , Erwan Corre<sup>6</sup>, Robert P. Davey , Henrik Lantz , Graziano Pesole , Christian Quast<sup>10</sup>, Frank Oliver Glöckner , Niels Raes , Anna Sandionigi , Monica Santamaria , Wouter Addink<sup>15</sup>, Jiri Vohradsky<sup>16</sup>, Amandine Nunes-Jorge , Nils Peder Willassen<sup>17</sup>,  Jerry Lanfear 

 [Author details](#)

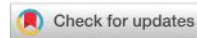


This article is included in the [ELIXIR](#) gateway.

















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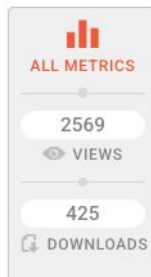
OPINION ARTICLE



## **REVISED** The ELIXIR Biodiversity Community: Understanding short- and long-term changes in biodiversity [version 2; peer review: 3 approved]

 Robert M. Waterhouse , Anne-Françoise Adam-Blondon<sup>2</sup>, Bachir Balech , Endre Barta , Physilia Ying Shi Chua , Valeria Di Cola<sup>6</sup>, Katharina F. Heil , Graham M. Hughes , Lars S. Jermin , Matúš Kalaš , Jerry Lanfear , Evangelos Pafilis<sup>11</sup>, Patricia M. Palagi , Aristotelis C. Papageorgiou<sup>12</sup>, Joana Paupério , Fotis Psomopoulos , Niels Raes , Josephine Burgin<sup>13</sup>, Toni Gabaldón 

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# Plant Sciences Community



## Some key services

- Data standards
  - Co-leading & building
  - Interoperability with ISA & ROcrate, integration in Fairdom-Seek
- Guidelines
  - Plant genomic/genetic brokering @ ENA-EVA
  - [RDMKit](#), used beyond ELIXIR
- Trainings
  - data management & standard
  - ELIXIR, nodes, EMPHASIS, NARO
- Knowledge graphs
  - genomic, omics
  - system biology
- Data portal ([FAIDARE](#))



**RDMkit**

Data management menu

Your domain

Plant sciences

On this page

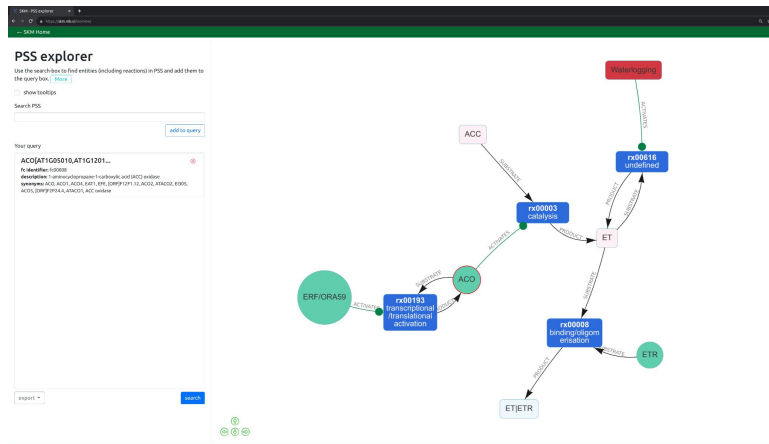
## Introduction

### Data management challenges in plant sciences

The plant science domain includes studying the adaptation of plants to their environment, ranging from improving crop yield or resistance to environmental conditions, to understanding plant ecosystems. Data integration and reuse are facilitators for understanding the plant

More information:

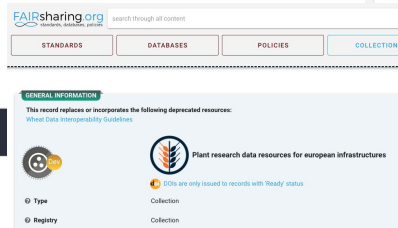
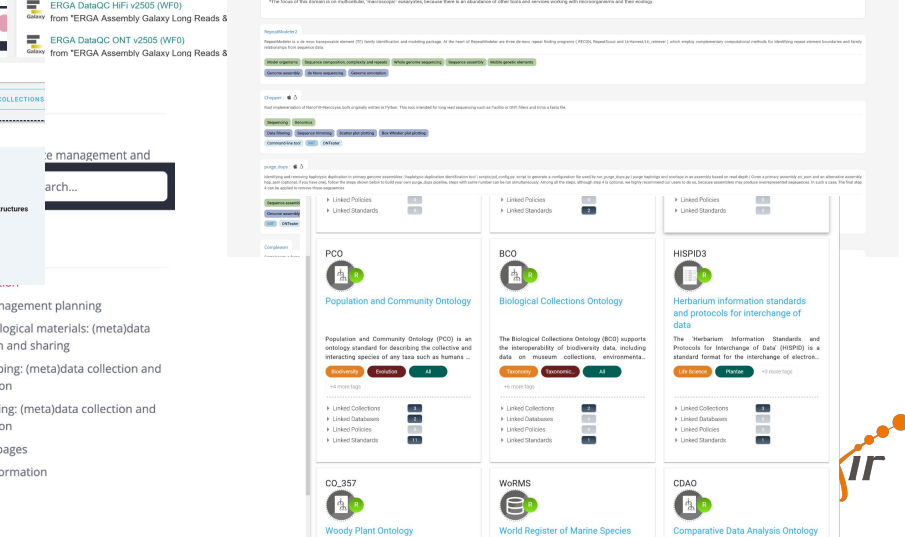
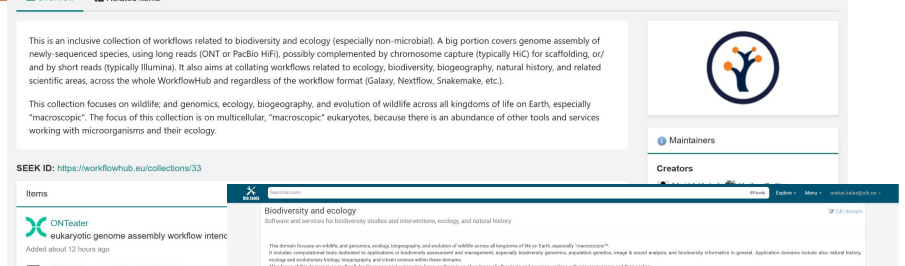
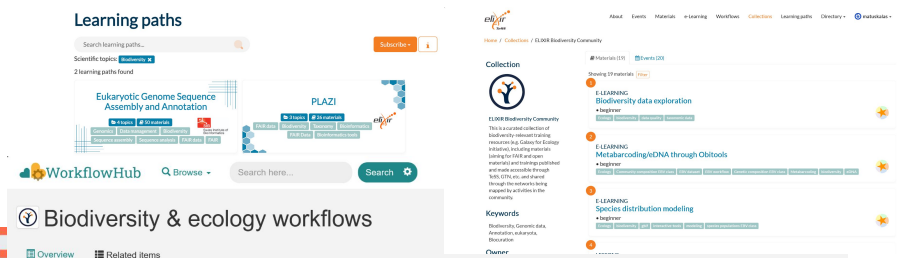
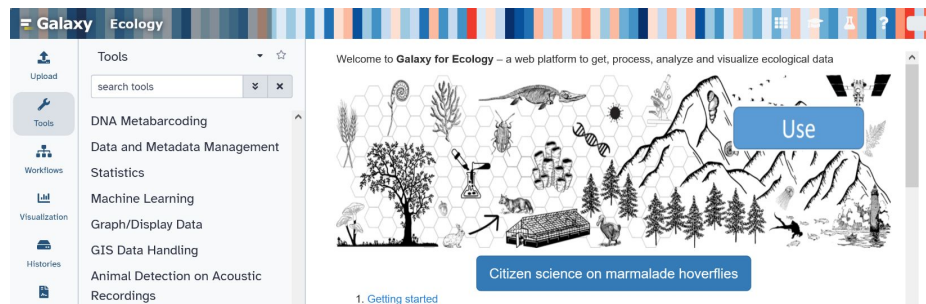
<https://elixir-europe.org/communities/plant-sciences>



# Technical Resources

- Research Data Management
  - RDMkit pages: [Biodiversity](#) and [Plant Sciences](#)
    - The Research Data Management toolkit for Life Sciences - Best practices and guidelines to help you make your data FAIR (Findable, Accessible, Interoperable and Reusable)
- WorkflowHub
  - [Biodiversity & Ecology](#) & xxx workflows
    - A registry for describing, sharing and publishing scientific computational workflows. WorkflowHub aims to facilitate discovery and re-use of workflows
- Galaxy
  - [Galaxy for Ecology](#)
    - Galaxy is a web based analysis and workflow platform designed for biologists to analyse their own data
- Bio.tools
  - [Biodiversity & ecology](#) (Searching for “Biodiversity” finds over 160, and “Ecology” almost 800 tools)
    - Essential scientific and technical information about software tools, databases and services for bioinformatics and the life sciences
- FAIRsharing registries
  - [Biodiversity](#), [Plant Research](#) collections (210 and 30 services and databases respectively)
    - A curated, informative and educational resource on data and metadata standards, inter-related to databases and data policies.
- Training Resources
  - TeSS collection: [Biodiversity](#), Biodiversity [Learning Path](#)
    - Portal for courses, events, videos, presentations, learning pathways, handbooks... for all types of resources at all levels for leveraging computational resources in the life sciences

# Technical Resources



Your domain

## Biodiversity

Your domain

## Plant sciences

### Introduction

#### Data management challenges in plant sciences

The plant science domain includes studying the adaptation of plants to their environment, with applications ranging from improving crop yield or resistance to environmental conditions to managing forest ecosystems. Data integration and reuse are facilitators for understanding the play between genotype and environment to produce a phenotype, which requires integrating phenotyping experiments and genomic assays made on the same plant material with geo-climatic data. Moreover, cross-species comparisons are often necessary to understand the mechanisms behind phenotypic traits, especially at the genotypic level, due to the gap in genomic knowledge between well-studied plant

Data management planning

Plant biological materials: (meta)data collection and sharing

Phenotyping: (meta)data collection and publication

Genotyping: (meta)data collection and publication

Related pages

More information



# ELIXIR's EU projects

- ELIXIR coordinates and partners in many EU projects
- Nodes provide data management expertise and infrastructure
- Key life science element of the European Open Science Cloud

Full list:

<https://elixir-europe.org/about-us/how-funded/eu-project>

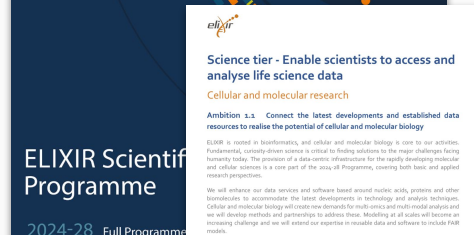
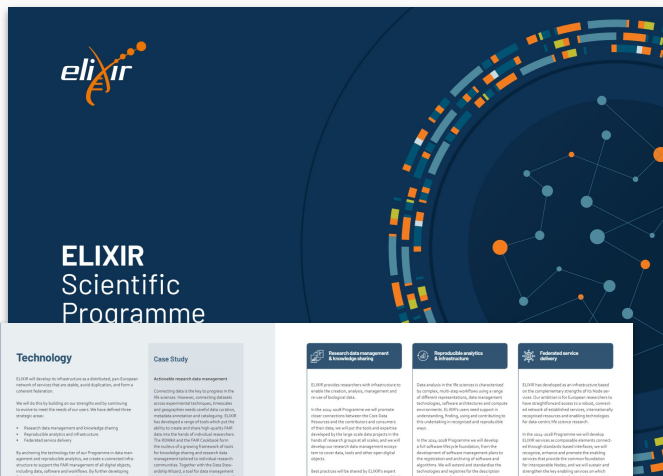


# Where to find out more

Summary brochure (print & [online](#))

Full Programme ([online](#))

Ambitions & Outcomes ([online](#))



[News release](#)

# Connect and stay up to date



## Bluesky

Follow us on Bluesky for daily updates of upcoming ELIXIR events and ELIXIR-related research outcomes.

@elixir-europe.org



## YouTube

Follow our YouTube channel for recordings of ELIXIR webinars and workshops.

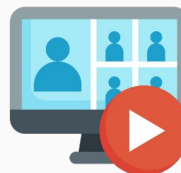
ELIXIR Europe



## LinkedIn

Follow our LinkedIn for event informations and new job vacancies in ELIXIR Hub.

company/elixir-europe



## Webinars & events

Check out ELIXIR's event page for upcoming webinars and events.

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





# Thank you

*Katharina F Heil*

Get in touch with questions  
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