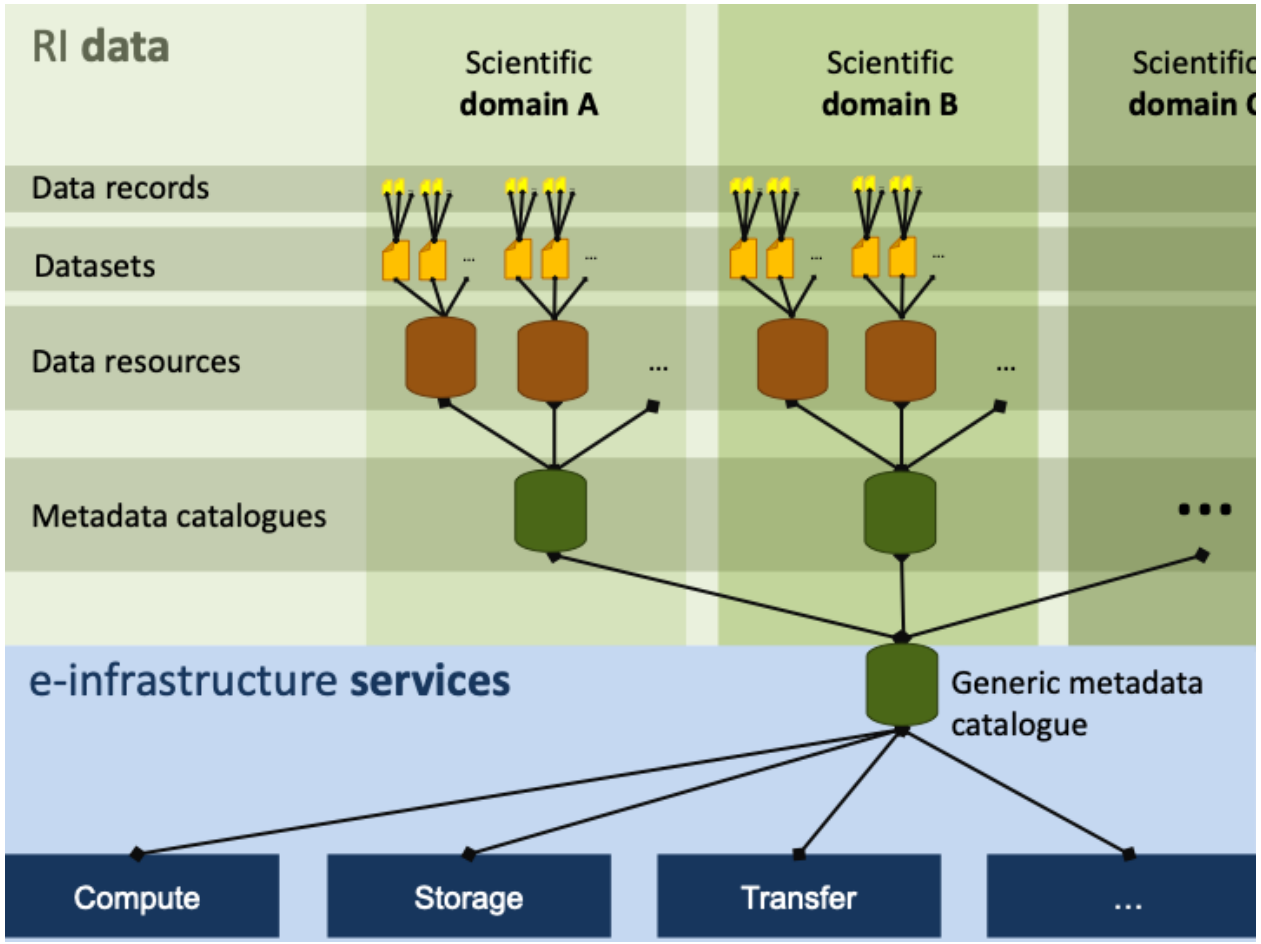
Interoperability frameworks for data sharing across domains and reuse of domain solutions

General factors that support interoperability

- Low barriers to entry for service providers and users
- Incentives for sustainability: open standards
- Shared services and infrastructure whenever possible – AAI, commercial procurement
- Caveat! Ensuring interoperability between disciplines remains challenge that is not solved

An architecture to support interdisciplinarity

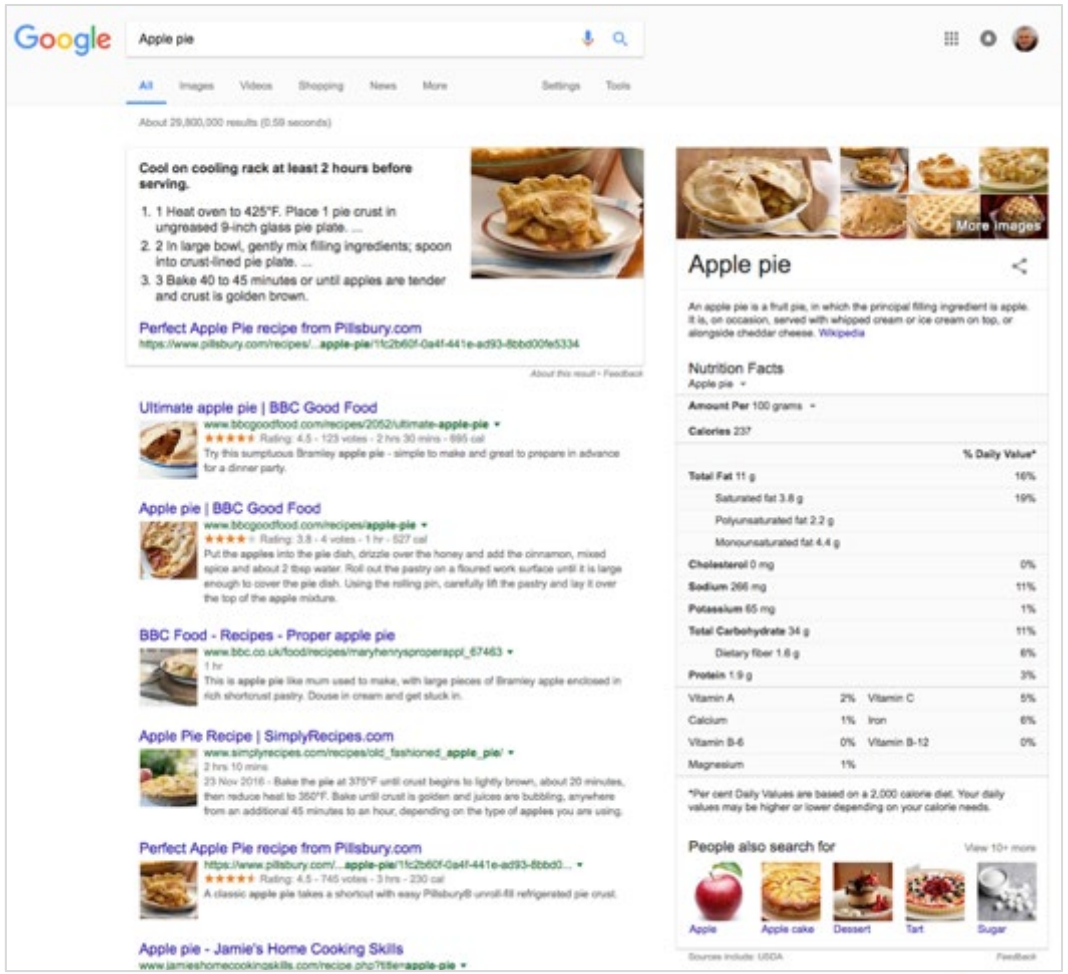
EOSCpilot
The European Open Science Cloud for Research Pilot Project



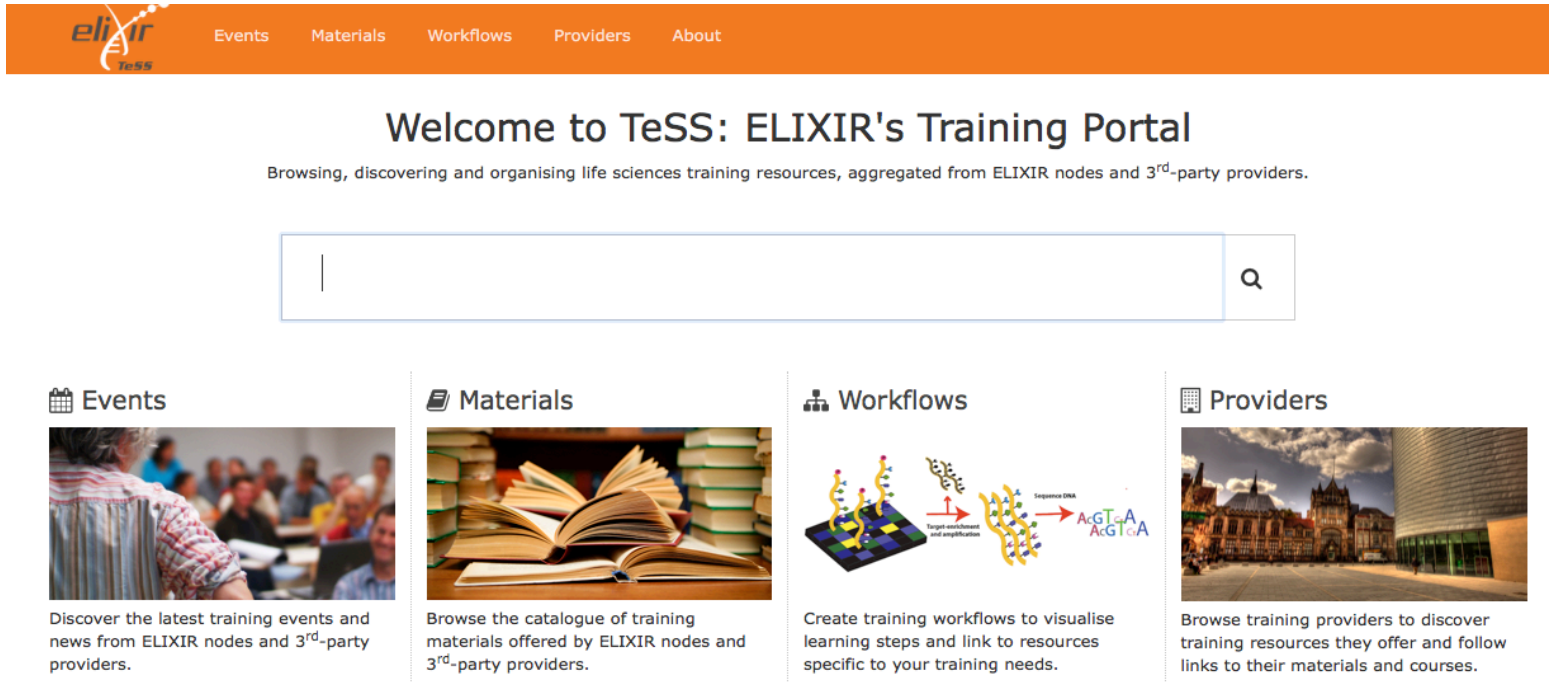
Bioschemas

"schema.org markup for life sciences – minimum properties needed for finding data"

http://bioschemas.org



Interoperability in practice



Software Carpentry

The Software Carpentry Foundation is a non-profit organization whose members teach researchers...

70 training materials
24 upcoming events *(1912 past events)*

PRACE

Partnership for Advanced Computing in Europe

46 upcoming events *(533 past events)*

Galaxy Project

There are many approaches to learning how to use Galaxy. The most popular is probably to just...

8 upcoming events *(173 past events)*

ABACBS

The Australian Bioinformatics and Computational Biology Society Inc or ABACBS (pronounced abacus)...

0 upcoming events *(9 past events)*

BioExcel

BioExcel is a Centre of Excellence for Computational Biomolecular Research set up to support...

0 upcoming events *(10 past events)*

Thermo Fisher Scientific

Thermo Fisher Scientific is the world leader in serving science, a company with approximately...

1 upcoming event *(5 past events)*

Recommended Interoperability Resources

Resource	Description
FAIRsharing	A FAIR-supporting resource including a registry on data standards, repositories and policy, alongside informative and educational tools and services.
g:Profiler	A gene-centric data integrator with web UI and API services.
Identifiers.org	Provider of persistent and compact identifiers for data objects in life sciences through a curated registry and associated resolver.
InterMine	Framework to integrate life sciences data based on an extensible data model, providing web interface and RESTful web services.
ISA Framework	The ISA (Investigation > Study > Assay) provides formats and tools to manage the experimental descriptions throughout the research life cycle, from collection, curation and deposition in public repositories, to analysis with existing tools and publication in data journals.
Ontology Lookup Service	Repository for biomedical ontologies that aims to provide a single point of access to the latest ontology versions through web UI or RESTFUL API
3DBIONOTES API	A reusable platform-independent API call component for protein and gene metadata alignment, annotation, and integration across major bioinformatic data resources.
BridgeDb	A combination of a software framework and an API for mapping identifiers for related objects in life sciences.
DisGeNET RDF API	An RDF SPARQL Endpoint for DisGeNET, a knowledge platform on human disease genes and variants
MOLGENIS	A software package to help researchers set up an online database application that supports data queries and allows data sharing.

Full details
https://www.elixir-europe.org/platforms/interoperability/rirs