Persistent Identifiers (PID)

General

Digital Object Identifier (DOI)	
Website:	https://www.doi.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.hFLKCn
Disciplines:	general
Data types:	all

Description:

A DOI name is a digital identifier of an object, any object — physical, digital, or abstract. DOIs solve a common problem: keeping track of things. Things can be matter, material, content, or activities.

Designed to be used by humans as well as machines, DOIs identify objects persistently. They allow things to be uniquely identified and accessed reliably. You know what you have, where it is, and others can track it too.

Archival Resource Key Identifier (ARK Identifier)	
Website:	https://arks.org/about/ark-overview/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.f928f1
Disciplines:	general
Data types:	all

Description:

An Archival Resource Key (ARK) is a multi-purpose URL suited to being a persistent identifier for information objects of any type. It is widely used by libraries, data centers, archives, museums, publishers, and government agencies to provide reliable references to scholarly, scientific, and cultural objects. In 2019, it was registered as a Uniform Resource Identifier (URI) scheme.

Open Researcher and Contributor ID Registry (ORCID)	
Website:	https://orcid.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.nx58jg
Disciplines:	general
Data types:	person

Description:

ORCID is an open, non-profit, community-driven effort to create and maintain a registry of unique researcher identifiers and a transparent method of linking research activities and outputs to these identifiers. The ORCID Registry is a repository of unique researcher identifiers which allows researchers to manage a record of their research activities. In addition, there are APIs that support system-to-system communication and authentication. ORCID makes its code available under an open source license, and will post an annual public data file under a CC0 waiver for free download.

Research Organization Registry (ROR)	
Website:	https://ror.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.1jKfji
Disciplines:	general
Data types:	organization

Description:

ROR is a community-led project to develop an open, sustainable, usable, and unique identifier for every research organization in the world. Implementation of ROR IDs in scholarly infrastructure and metadata will enable more efficient discovery and tracking of research outputs across institutions and funding bodies.

Wikidata Identifier (QID)	
Website:	https://www.wikidata.org/wiki/Q43649390
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.PB6595
Disciplines:	general
Data types:	all

Description:

Wikidata is a document-oriented database, focused on items, which represent any kind of topic, concept, or object. Each item is allocated a unique, persistent identifier (a QID), which is a positive integer prefixed with the upper-case letter Q.

Identifiers.org Central Registry	
Website:	https://registry.identifiers.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.n14rc8
Disciplines:	Life sciences
Data types:	all

Description:

The Identifiers.org Resolution Service provides consistent access to life science data using Compact Identifiers. Compact Identifiers consist of an assigned unique prefix and a local provider designated accession number (prefix:accession). The resolving location of Compact Identifiers is determined using information that is stored in the Identifiers.org Registry.

For instance, a UniProt entry also possesses an identifiers.org entry, which can be resolved on the Identifiers.org portal.

GeoNames (GeoNames)	
Website:	https://www.geonames.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.56a0Uj
Disciplines:	general
Data types:	location
Description: GeoNames integrates geographical data such as names of places in various languages, elevation, population and others from various sources. Users may manually edit, correct and add new names using a user friendly wiki interface.	

International Standard Name Identifier Database (ISNI Database)	
Website:	https://isni.org/page/search-database/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.6c97bf
Disciplines:	general
Data types:	Person and location
Description: The International Standard Name Identifier (ISNI) Database is used to uniquely identify persons and organizations worldwide. ISNIs are assigned when there is a high level of confidence in matching new names to existing names in the database or when sufficiently rich metadata is available to determine that the new name does not yet exist in the ISNI database.	

Informatics

SPDX License **(License Identifier from Linux foundation)**	
Website:	https://spdx.org/licenses/
FairSharing URL:	https://fairsharing.org/FAIRsharing.95c69f
Disciplines:	general
Data types:	all
Description: 'R1.1. Software is given a clear and accessible license' states that to enable reuse, software must have a license that clearly describes how it can be used and reused, ideally with conditions that are readable by humans and machines. Licenses are often referred to by name, but machine-readable licenses can be specified by reference to a standard vocabulary such as the SPDX License List4 (SPDX Consortium, 2020). To support a wide range of reuse scenarios, the license should be as unrestrictive as possible and, to avoid license proliferation, choosing a widely used and recognized license is strongly recommended. This license must also be compatible with the requirements of the licenses of the software's dependencies so that the software can be legally combined.	

Technical Registry PRONOM **(PRONOM Identifier)**	
Website:	https://www.nationalarchives.gov.uk/PRONOM/
FairSharing URL:	https://fairsharing.org/FAIRsharing.762931
Disciplines:	general
Data types:	all
Description: PRONOM is an online registry of technical information. PRONOM is a resource for anyone requiring impartial and definitive information about the file formats, software products and other technical components required to support long-term access to electronic records and other digital objects of cultural, historical or business value.	

Literature

PubMed Unique Identifier (PMID)	
Website:	https://www.nihms.nih.gov/help/glossary/#pmid
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.2b9b61
Disciplines:	general
Data types:	publication

Description:

The PubMed Unique Identifier (PMID) is a 1- to 8-digit accession number with no leading zeros for managing and disseminating records at the PubMed repository. The PMID is a unique reference number for PubMed citations and is a distinctly different number from the PMCID and is used only for PubMed records. PMIDs are not reused after records are deleted. Prior to the 2004 version of PubMed (available December 3, 2003), many records contained a MEDLINE Unique Identifier in addition to the PMID. NLM no longer displays the MEDLINE Unique Identifier. The PMID has become the unique identifier for the MEDLINE record.

International Standard Serial Number (ISSN)	
Website:	https://www.issn.org/
FairSharing URL:	
Disciplines:	general
Data types:	publication

Description:

An International Standard Serial Number (ISSN) is an eight-digit code to uniquely identify a periodical publication (periodical), such as a magazine. The ISSN is especially helpful in distinguishing between serials with the same title. ISSNs are used in ordering, cataloging, interlibrary loans, and other practices in connection with serial literature.

International Standard Book Number (ISBN)	
Website:	https://www.isbn-international.org/
FairSharing URL:	
Disciplines:	general
Data types:	publication

Description:

The International Standard Book Number (ISBN) is a numeric commercial book identifier that is intended to be unique. Publishers purchase or receive ISBNs from an affiliate of the International ISBN Agency.

A different ISBN is assigned to each separate edition and variation of a publication, but not to a simple reprinting of an existing item. For example, an e-book, a paperback and a hardcover edition of the same book must each have a different ISBN, but an unchanged reprint of the hardcover edition keeps the same ISBN. The ISBN is ten digits long if assigned before 2007, and thirteen digits long if assigned on or after 1 January 2007. The method of assigning an ISBN is nation-specific and varies between countries, often depending on how large the publishing industry is within a country.

Chemicals

CAS Registry Number (CAS RN)	
Website:	https://www.cas.org/cas-data/cas-registry
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.r7Kwy7
Disciplines:	Biochemistry
Data types:	chemicals

Description:

Chemical compounds are described in many ways, including molecular formulas, chemical structures, generic, systematic, common, and trade names. This lack of clarity can cause frustration, delays, and even safety concerns.

A CAS Registry Number (CAS RN®) is a unique and unambiguous identifier for a specific substance that allows clear communication and, with the help of CAS scientists, links together all available data and research about that substance. Governmental agencies rely on CAS Registry Numbers for substance identification in regulatory applications because they are unique, easily validated, and internationally recognized.

IUPAC International Chemical Identifier (InChI)	
Website:	https://www.inchi-trust.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.ddk9t9
Disciplines:	Biochemistry
Data types:	chemicals

Description:

Originally developed by the International Union of Pure and Applied Chemistry (IUPAC), the IUPAC International Chemical Identifier (InChI) is a machine-readable string generated from a chemical structure. InChIs are unique to the compound they describe and can encode absolute stereochemistry making chemicals and chemistry machine-readable and discoverable. A simple analogy is that InChI is the bar-code for chemistry and chemical structures. A hashed fixed-length version of the InChI, the InChIKey, is also widely used. The InChI format and algorithm are non-proprietary, and the software is open source, with ongoing development done by the community. A number of IUPAC working groups are working on extensions and new applications of the standard.

Proteins

UniProt Protein Identifier	
Website:	https://www.uniprot.org/help/accession_numbers
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.fd6003
Disciplines:	Proteomics
Data types:	proteins
Description:	
UniProt protein identifiers are stable identifiers and should be used to cite UniProtKB entries. Upon integration into UniProtKB, each entry is assigned a unique accession number, which is called 'Primary (citable) accession number'. UniProtKB accession numbers consist of 6 or 10 alphanumeric characters in the format.	

Protein Data Bank Identifier (PDB ID)	
Website:	https://www.rcsb.org/docs/general-help/identifiers-in-pdb#relevance-of-identifiers-in-pdb-exploration
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.457f35
Disciplines:	Proteomics
Data types:	Protein structures
Description:	
PDB IDs are identifiers used at all levels of the structural hierarchy for entries in the Protein Data Bank using the prefix “pdb” followed by a 4-character alphanumeric identifier. These identifiers are used to specifically select, visualize, locate a specific instance of a ligand, and/or an amino acid in a protein chain in a particular PDB entry.	

Antibody Registry	
Website:	https://www.antibodyregistry.org/
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.3wdd17
Disciplines:	Biomedical sciences
Data types:	antibodies

Description:

The Antibody Registry exists to give researchers a way to universally identify antibodies used in publications. The registry lists many commercial antibodies from about 200 vendors which have each been assigned a unique identifier. If the antibody that you are using does not appear in the list, an entry can be made by filling in as little as 2 pieces of information: the catalog number and the url of the vendor where our curators can find information and material data sheets. Many optional fields can also be filled in that will help curators identify the reagent. After submitting an antibody, you are given a permanent identifier that can be used in publications. This identifier even if it is later found to be duplicate, can be quickly traced back in the antibody registry. We never delete records, but we collapse duplicate entries on a regular basis (the old identifiers are kept to help with search).

Genetics

Ensembl	
Website:	https://www.ensembl.org/index.html
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.fx0mw7
Disciplines:	Genomics
Data types:	genes
Description:	
Ensembl creates, integrates and distributes reference datasets and analysis tools that enable genomics. Ensembl is a genome browser that supports research in comparative genomics, evolution, sequence variation and transcriptional regulation. Ensembl annotate genes, computes multiple alignments, predicts regulatory function and collects disease data.	

NCBI Gene (NCBI Gene)	
Website:	https://www.ncbi.nlm.nih.gov/gene
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.5h3maw
Disciplines:	Genomics
Data types:	genes
Description:	
Gene supplies gene-specific connections in the nexus of map, sequence, expression, structure, function, citation, and homology data. Unique identifiers are assigned to genes with defining sequences, genes with known map positions, and genes inferred from phenotypic information. These gene identifiers are used throughout NCBI's databases and tracked through updates of annotation. Gene includes genomes represented by NCBI Reference Sequences (or RefSeqs) and is integrated for indexing and query and retrieval from NCBI's Entrez and E-Utilities systems. Gene comprises sequences from thousands of distinct taxonomic identifiers, ranging from viruses to bacteria to eukaryotes. It represents chromosomes, organelles, plasmids, viruses, transcripts, and millions of proteins.	

Lipidomic

LIPID MAPS® Lipid Classification System Identifier (LM ID)	
Website:	https://www.lipidmaps.org/databases/lmsd/browse
FairSharing URL:	https://doi.org/10.25504/FAIRsharing.a1e399
Disciplines:	Metabolomics
Data types:	lipids

Description:

The LIPID MAPS® Lipid Classification System is comprised of eight lipid categories, each with its own subclassification hierarchy. All lipids in the LIPID MAPS® Structure Database (LMSD) have been classified using this system and have been assigned a unique LIPID MAPS® ID (LM_ID). LMSD can be searched by lipid class, common name, systematic name or synonym, mass, InChIKey or LIPID MAPS® ID with the search box in the banner, or alternatively, by LIPID MAPS® ID, systematic or common name, mass, formula, category, main class, subclass data, or structure or sub-structure with one of the search interfaces in the LMSD database section.