



Discovering Biodiversity Resources on the Web

Alasdair Gray, Franck Michel, Quentin Groom,
and the Bioschemas Community

Biodiversity Mini-symposium
ELIXIR All Hands, 8 June 2020

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Heriot-Watt University – ELIXIR-UK

Schema.org: Semantic Markup for the Web

https://www.imdb.com/title/tt1403865/

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True Grit (2010) ★ 7.6 268,396 ☆ Rate This

PG-13 | 1h 50min | Adventure, Drama, Western | 22 December 2010 (USA)

```
<div class="credit_summary_item">
  <h4 class="inline">Directors:</h4>
  <span itemprop="director" itemscope
itemtype="http://schema.org/Person">
<a href="/name/nm0001053/?ref_=tt_ov_dr"|
itemprop='url'><span class="itemprop" itemprop="name">Ethan Coen</span>
</span>
  <span itemprop="director" itemscope
itemtype="http://schema.org/Person">
<a href="/name/nm0001054/?ref_=tt_ov_dr"
itemprop='url'><span class="itemprop" itemprop="name">Joel Coen</span>
</span>
</div>
```

prime video Watch Now From £2.49

A stubborn teenager en... down her father's murderer.

Directors: Ethan Coen, Joel Coen

Writers: ... (screenplay), Ethan Coen (screenplay) | 1 more credit »

Stars: Jeff Bridges, Matt Damon, Hailee Steinfeld | See full cast & crew »

Picture: Carole Goble, Turing Lecture 2018

Best Rating

Aggregate Rating

Reviews

Description

Director

Actor

True Grit (2010) - IMDb
www.imdb.com/title/tt1403865/

★ ★ ★ ★ Rating: 7.9/10 - 578 reviews

A tough U.S. Marshal helps a stubborn young woman track down her father's murderer. Directed by Ethan Coen, Joel Coen. Starring Jeff Bridges, Matt Damon, Hailee Steinfeld. Full cast and crew - Memorable quotes - Trivia - Parents Guide

schema.org embedded RDFa and data on > 40% of web pages



Structured data → descriptors

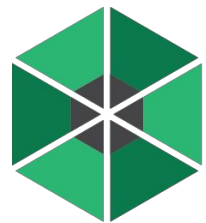
What we are
talking about
Types
(829)

- Thing
 - Action
 - AchieveAction
 - LoseAction
 - TieAction
 - WinAction
 - AssessAction
 - ChooseAction
 - VoteAction
 - IgnoreAction
 - ReactAction
 - AgreeAction
 - DisagreeAction
 - DislikeAction
 - EndorseAction
 - LikeAction
 - WantAction
 - ReviewAction
 - ConsumeAction
 - DrinkAction
 - EatAction

What we can
say about
those things
Properties
(1351)

Property	Expected Type	Description
Properties from <u>Person</u>		
<u>additionalName</u>	Text	An additional name for a Person, can be used for a middle name.
<u>address</u>	PostalAddress or Text	Physical address of the item.
<u>affiliation</u>	Organization	An organization that this person is affiliated with. For example, a school/university, a club, or a team.
<u>alumniOf</u>	EducationalOrganization or Organization	An organization that the person is an alumni of. Inverse property: <u>alumni</u> .
<u>award</u>	Text	An award won by or for this item. Supersedes <u>awards</u> .
<u>birthDate</u>	Date	Date of birth.
<u>birthPlace</u>	Place	The place where the person was born.
<u>brand</u>	Brand or Organization	The brand(s) associated with a product or service, or the brand(s) maintained by an organization or business person.
<u>children</u>	Person	A child of the person.
<u>colleague</u>	Person or URL	A colleague of the person. Supersedes <u>colleagues</u> .
<u>contactPoint</u>	ContactPoint	A contact point for a person or organization. Supersedes <u>contactPoints</u> .
<u>deathDate</u>	Date	Date of death.
<u>deathPlace</u>	Place	The place where the person died.
<u>duns</u>	Text	The Dun & Bradstreet DUNS number for identifying an organization or business person.
<u>email</u>	Text	Email address.
<u>familyName</u>	Text	Family name. In the U.S., the last name of an Person. This can be used along with givenName instead of the name property.
<u>faxNumber</u>	Text	The fax number.
<u>follows</u>	Person	The most generic uni-directional social relation.
	Organization or	A person or organization that supports (sponsors) something



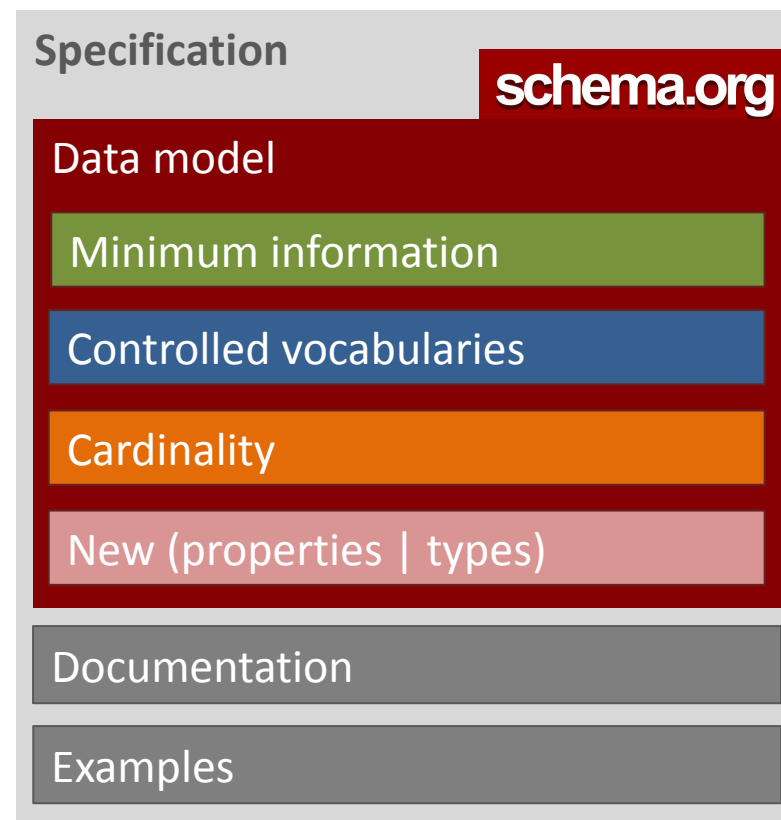


Bioschemas

Profile over **schema.org**

Layer of constraints + documentation + extensions

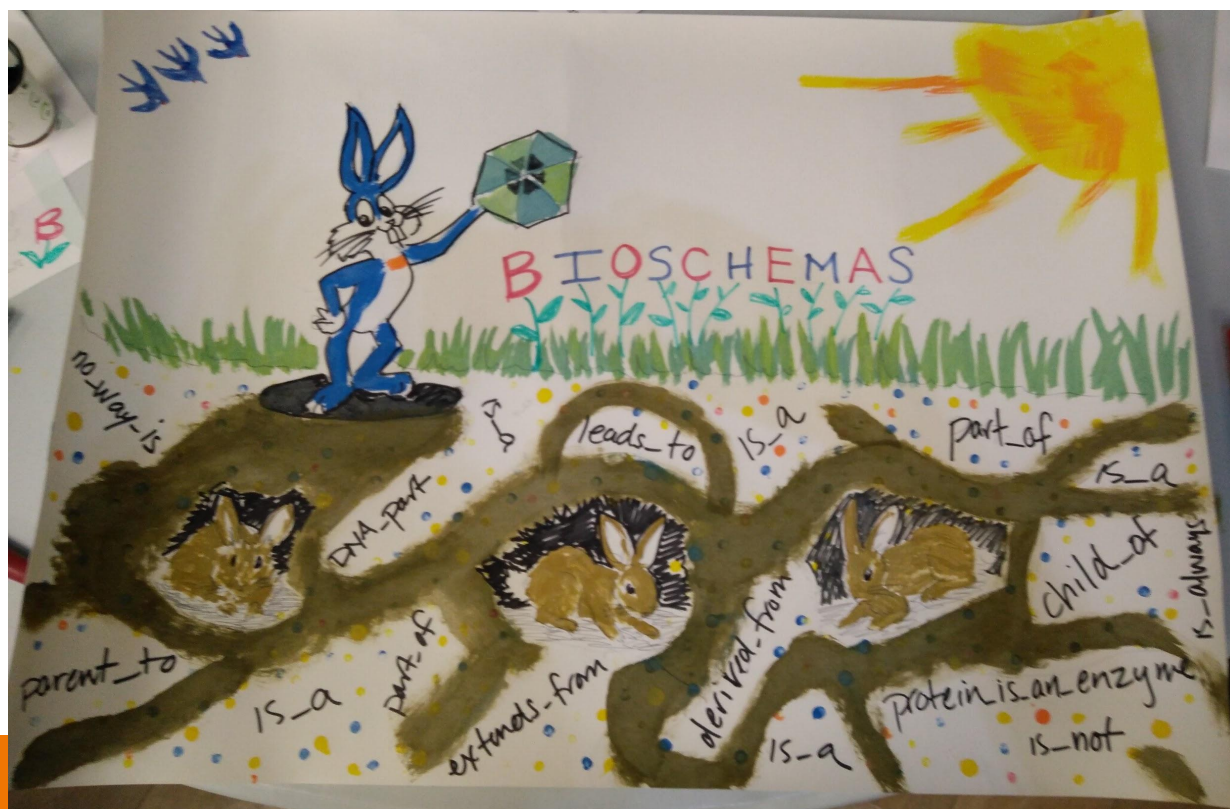
- Community initiative built on top of **schema.org**
- Aim
 - Improve data discoverability and interoperability in Life Sciences
- Approach
 - Add Life Science types to schema.org
 - Provide usage guidelines and examples
 - 6 Minimal properties
 - Link to domain ontologies
 - Support software





Bioschemas: Lightweight semantic interoperability

- Many domain ontologies
 - Designed to model biology
- Bioschemas focus on search!



BioPortal

BioPortal Statistics

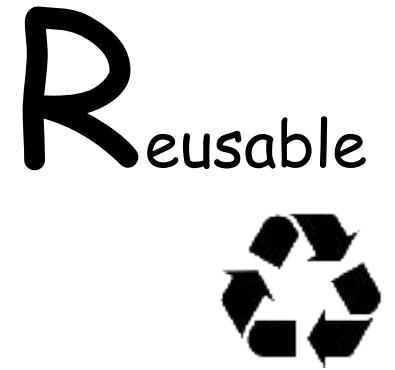
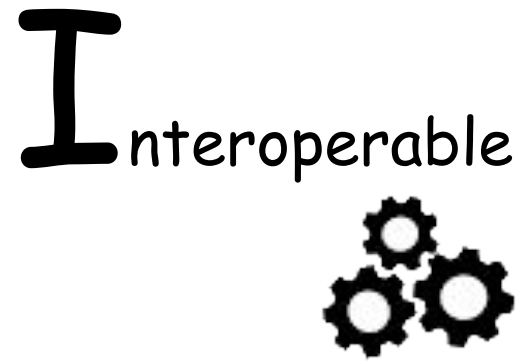
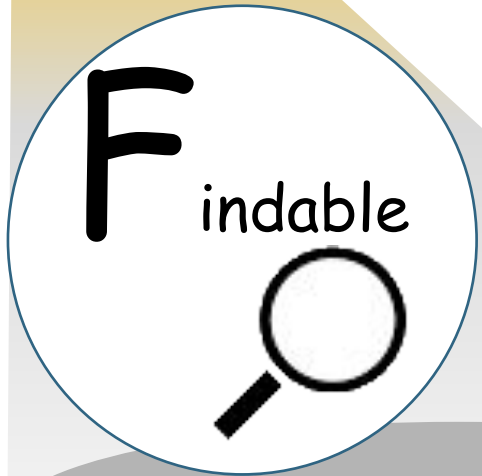
Ontologies	849
Classes	11,336,085
Resources Indexed	48
Indexed Records	39,537,360
Direct Annotations	95,468,433,792
Direct Plus Expanded Annotations	144,789,582,932



Data Content

Updated 08 May 2020
04:38

- 251 ontologies
- 6,198,216 terms
- 27,921 properties
- 486,139 individuals



- ★ Globally unique identifiers
- ★ Community defined enriched metadata
- ★ Indexable by search engines

- ★ Retrievable
- ★ HTTP

- ★ JSON-LD/RDFa
- ★ Link to controlled vocabularies
- ★ Links to other resources

- ★ License
- ★ Provenance



Bioschemas: Markup for the Life Sciences

IUPHAR/BPS
Guide to PHARMACOLOGY

Search Database

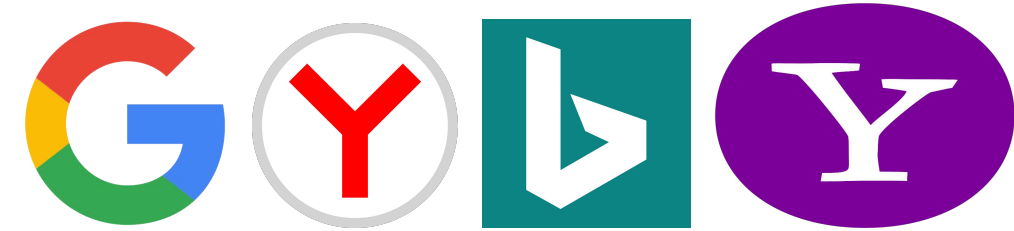
Home About Help Search GtoPdb...

Ligands relevant to SARS-CoV-2(COVID-19) - ligand name links to detailed information in GtoPdb, or to our pre-release blog. Download as CSV

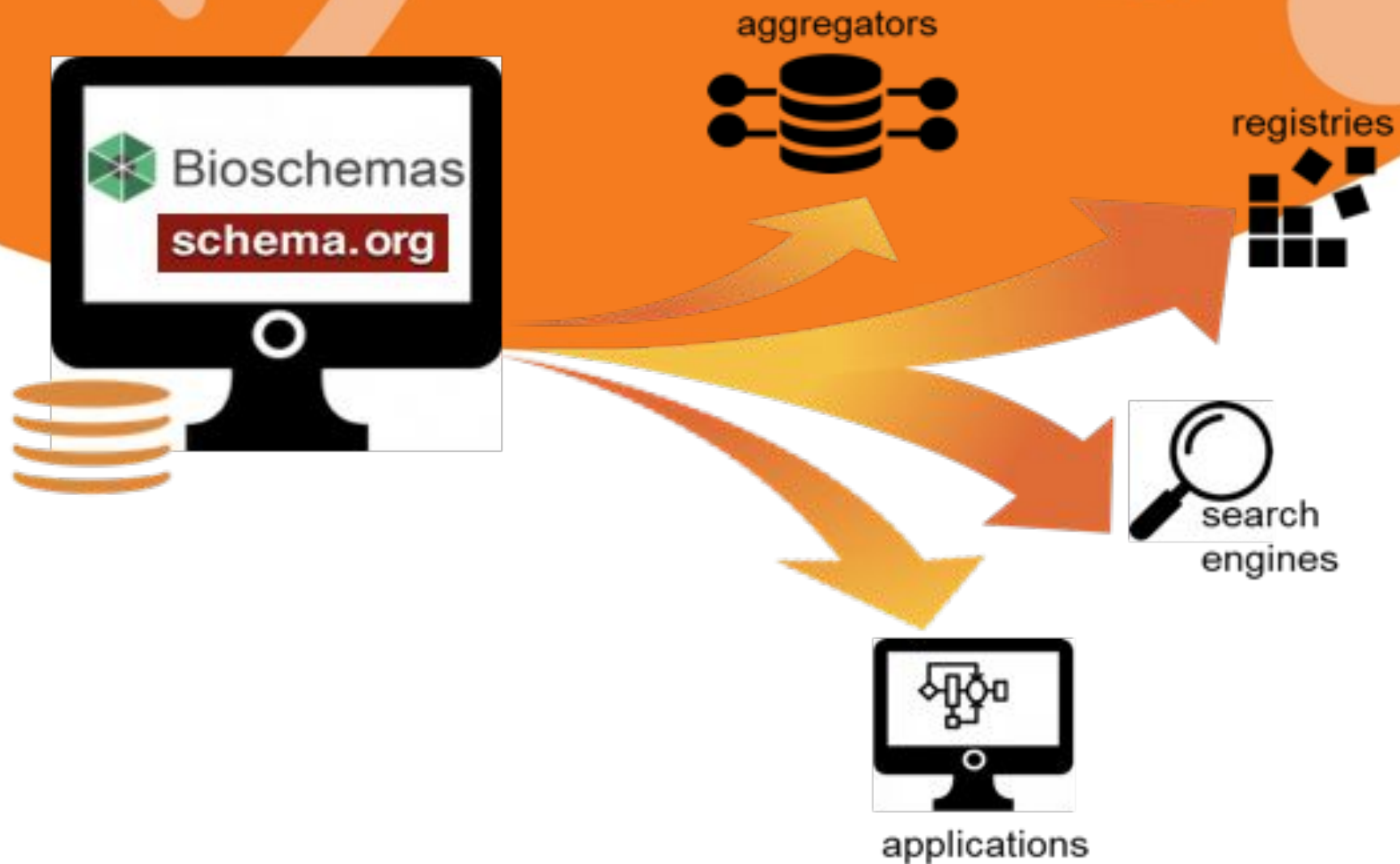
Ligand (Therapeutic)	Ligand ID	Comments
Abl kinase inhibitors (e.g. imatinib)	5687	Abelson kinase (Abl) inhibitors are reported to block Spike protein-induced SARS-CoV and MERS-CoV infection. PMID: 28555526
ACE2 ligands		
anakinra		
anti-TNF therapy (e.g. infliximab and others)		
apilmod		
ASC09F		

```

<!-- BioSchemas ---->
<script type="application/ld+json">[
  {
    "@context": "https://schema.org",
    "@type": "Protein",
    "@id": "https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1614",
    "http://purl.org/dc/terms/conformsTo": "https://bioschemas.org/profiles/Protein/0.4-DRAFT-2019_09_20/",
    "identifier": "1614",
    "name": "ACE2",
    "associatedDisease": "COVID-19",
    "description": "Receptor on host cells that is exploited by some betacoronaviruses for viral entry. Engaged by SARS-CoV-2 spike protein as the first step towards infection of host cells",
    "url": "https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1614"
  },
  {
    "@context": "https://schema.org",
    "@type": "MolecularEntity",
    "@id": "https://www.guidetopharmacology.org/GRAC/LigandDisplayForward?ligandId=8912#",
    "http://purl.org/dc/terms/conformsTo": "https://bioschemas.org/profiles/MolecularEntity/0.4-DRAFT-2019_11_11/",
    "identifier": "8912",
    "name": "acalabrutinib",
    "url": "https://www.guidetopharmacology.org/GRAC/LigandDisplayForward?ligandId=8912",
    "associatedDisease": "COVID-19",
    "description": "acalabrutinib is an approved BTK inhibitor that is progressing to clinical trial in COVID-19 patients as part of..."
  }
]
    
```



Exploiting Bioschemas Markup



TeSS: Specialised Search



DMOS18 Data Management and Open Science

Course Description
In an age of increasingly complex and data-intensive, collaborative scientific practices, standards of reproducibility, and a growing societal emphasis on accountability, a new paradigm has arisen: Open Science. In this four day long course, we will introduce to you the three organizing principles that underpin the paradigm:
Open Access scholarly publishing
Open Science software development
Open Data integration and sharing
For this, we will be introducing a set of technologies and ways of using them. The reasonable use of these tools in a highly productive way. The use cases that we will be using are not limited to the life sciences. You do not need to have any particular knowledge or background in a scientific or technical area. In fact, you should not be afraid to ask and then share the participants the good practices in data management and open science. These practices influence reproducibility and reusability. At the end we will discuss publication strategies.
You can see the detailed program through the link below.
Registration
Registration until: June 7th, following the instructions in the link below.
Publication instructions
Contact: For any questions regarding this course, please contact OTPE (bottom below).
Start date: 2016-06-12
End date:

Bioschemas Event:

- contact
- description
- endDate
- eventType
- hostInstitution
- location
- name
- startDate
- ...



Register Now for 19-21 November 2018

Overview

This 3-day course introduces you to using the Q Exactive mass spectrometer. The course is led by experts in the field of metabolomics and includes workshops to provide a detailed overview of the metabolomics pipeline.

UPCOMING EVENTS (CO-)ORGANIZED BY IFB

June 2018

- 19th June de novo assembly - Genomics (second session) The 06-08
- SIGEN Training course for bioinformatics and biologists aiming at introducing a new generation of researchers. 20-06-08-18 (7 days), 9am, 14-15, de Bontingse, Aurore. Registration deadline: 2017-12-18. Link to event: <http://www.genomax.fr/teaching/teaching-sigen/>
- 10th June de novo assembly - Genomics (second session) The 06-08
- 10th June de novo assembly - Genomics (second session) The 06-08

Upcoming training events

- RNA-seq: From quality control to pathway analysis 25-31 May 2018
- First Steps in Parallelization with OpenMP 25-31 May 2018



Home / Events

Date Added	
Anytime	
Scientific topic	
Bioinformatics	31
Data visualisation	7
Biology	4
Data mining	3
Metabolomics	3
RNA-Seq	3
Data management	2
Molecular modelling	2
Biological imaging	1
Show more scientific topics	
Event type	
Workshops and courses	136

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Grid Map Calendar

Executive Masters in Management of Research Infrastructures

20 September 2017 - 15 March 2019

Milan, Italy



Introduction to high throughput screening

1 December 2017 - 30

HPC@UAntwerp int - Spring'18

3 May - 3 June 2018

Antwerpen), Belgium

Performance portability for



Data Exchange: Without an API

MarRef → BioSamples


Maricaulis maris MCS10

+Expand all / -Collapse all

- Summary	
MMP ID	MMP02598382
Full Scientific Name	Maricaulis maris MCS10
Strain	
Type Strain	
Geographic location	
Collection Date	
Biosample Accession	
Bacdiv ID	
Culture Collection(s)	
Isolation Country	
Environmental Package	
Isolation Source	
Host Scientific Name	
Curation Date	
Updated Date	
Implementation Date	
Microbe Package	
Experiment/Investigation Type	
Bioproject Accession	
Genbank Accession	
NCBI Taxon Identifier	394221

```
{
  "@context": "http://schema.org",
  "@type": [
    "BioChemEntity",
    "Sample"
  ],
  "identifier": [
    "biosamples:SAMD00017418",
    "mmp.ref:MMP00017418"
  ],
  "name": "Pseudomonas sp. MT-1",
  "url": "https://mmp.sfb.uit.no/data",
  "description": "Pseudomonas sp. str",
  "dataset": [
    "http://www.ebi.ac.uk/ena/data/se",
    "https://www.arb-silva.de/search/",
    "https://www.arb-silva.de/search/",
    "http://www.ebi.ac.uk/ena/data/vi"
  ],
  "additionalProperty": [
    "L17418-49"
  ]
}
```

Bioschemas
Scraper

 **BioSamples** leukaemia, viroid/plantae, sheep liver

[Home](#) [Search](#) [Submit](#) [Documentation](#) [About](#)

SAMN02598382

CP000449

Release	2014 / 01 / 28 10:41:06 UTC
Update	2018 / 05 / 17 09:23:01 UTC

Attributes

Type	Value
Geographic Location (GAZ)	Puget Sound
Organism	Maricaulis maris

External Links

ENA	ENA	other	other
organism	maricaulis maris MCS10		
strain	MCS10		

Rich snippet generation



Google Dataset Search

molecular interactions

MINT, the Molecular Interaction database
mint.bio.uniroma2.it
www.buffalo.edu

MINT, the Molecular Interaction database

mint.bio.uniroma2.it www.buffalo.edu


Data from: Molecular Interactions between (-)-Epigallocatechin Gallate...
figshare.com

Binding affinity scores, energies, molecular interactions as well as

Dataset provided by University of Rome Tor Vergata IntAct Team

Available download formats from providers
CSV

Description
MINT focuses on experimentally verified protein-protein interactions mined from the scientific literature by expert



Bioschemas

elixir

Events Materials Workflows Providers About

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Earliest

Previous 1 2 3 4 5 6 7 8 9 Next

Grid Map Calendar


Executive Masters in Management of Research Infrastructures
20 September 2017 - 15 March 2019
Milan, Italy

Introduction to high throughput screening
1 December 2017 - 30 June 2018

C++ for scientific computing
13 February - 3 June 2018
Heverlee, Belgium

HPC@UAntwerp introduction - Spring'18
3 May - 3 June 2018
Antwerpen), Belgium

PRACE-MaX Tutorial on high-throughput computations: general methods and applications using



The DataCite
PID Graph



OPEN
RESEARCH KNOWLEDGE GRAPH
DIGITAL LIBRARIES FOR SEMANTIC SCIENTIFIC KNOWLEDGE



OpenAIRE
Research Graph

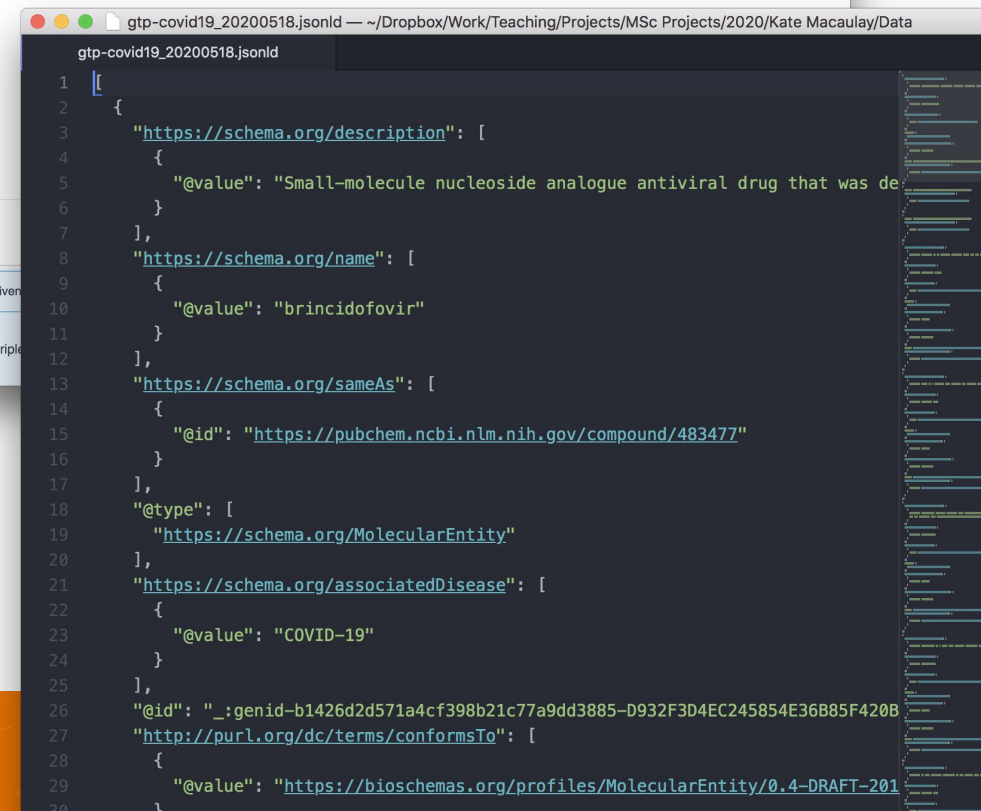
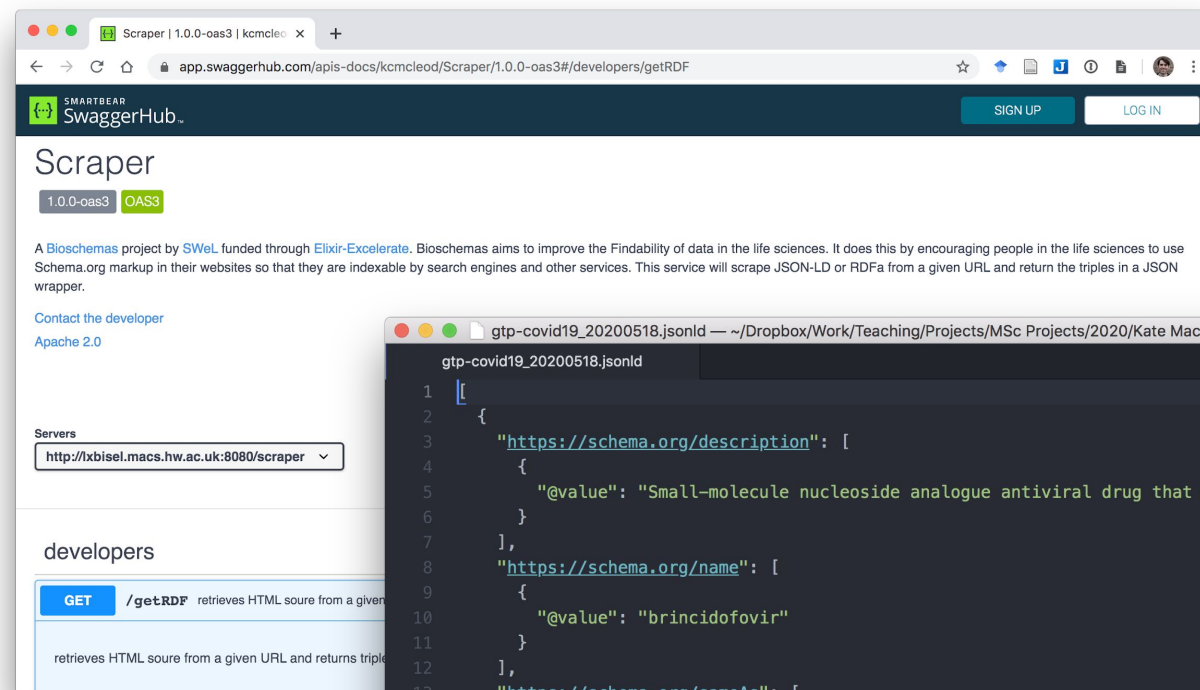


ResearchGraph
<http://researchgraph.org/>



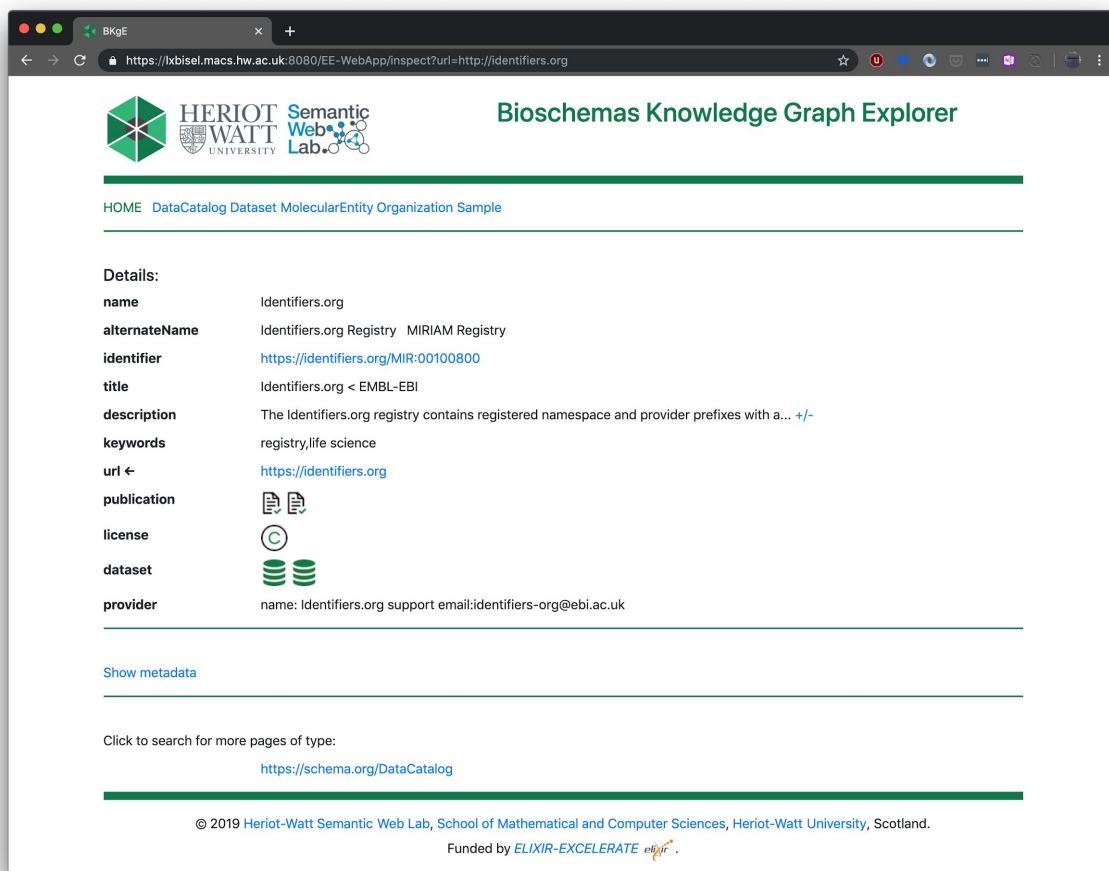
BMUSE: Bioschemas Markup Scraper and Extractor

- Directed scraper
 - List of URLs
 - Site maps
- Extracts markup
 - JSON-LD or RDFa
 - Single page applications
- Includes provenance of extraction
 - retrievedFrom
 - retrievedOn
- Experimental crawl of COVID-19 markup



BKG Explorer

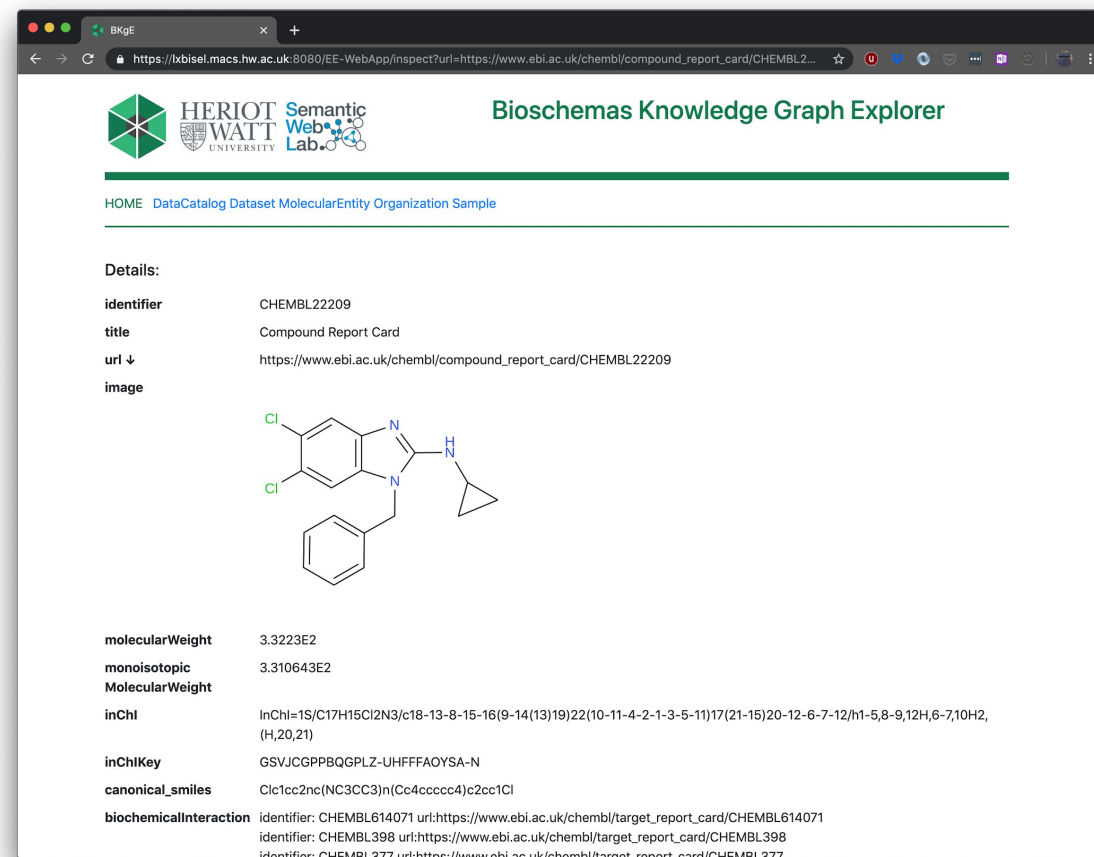
Built over Bioschemas markup crawled from 30 live deployments
20,000 pages



The screenshot shows the BKG Explorer interface for the Identifiers.org entity. The page title is "Bioschemas Knowledge Graph Explorer". The breadcrumb trail is "HOME DataCatalog Dataset MolecularEntity Organization Sample". The details section includes:

- name:** Identifiers.org
- alternateName:** Identifiers.org Registry MIRIAM Registry
- identifier:** <https://identifiers.org/MIR:00100800>
- title:** Identifiers.org < EMBL-EBI
- description:** The Identifiers.org registry contains registered namespace and provider prefixes with a... +/-
- keywords:** registry, life science
- url:** <https://identifiers.org>
- publication:** (represented by document icons)
- license:** (represented by a Creative Commons icon)
- dataset:** (represented by database icons)
- provider:** name: Identifiers.org support email: identifiers-org@ebi.ac.uk

At the bottom, there is a link to "Show metadata" and a footer with copyright information: "© 2019 Heriot-Watt Semantic Web Lab, School of Mathematical and Computer Sciences, Heriot-Watt University, Scotland. Funded by ELIXIR-EXCELERATE".



The screenshot shows the BKG Explorer interface for a ChEMBL compound report card. The page title is "Bioschemas Knowledge Graph Explorer". The breadcrumb trail is "HOME DataCatalog Dataset MolecularEntity Organization Sample". The details section includes:

- identifier:** ChEMBL22209
- title:** Compound Report Card
- url:** https://www.ebi.ac.uk/chembl/compound_report_card/ChEMBL22209
- image:** (Chemical structure of a benzimidazole derivative with a chlorine atom and a cyclopropyl group)

Below the image, there is a list of properties:

- molecularWeight:** 3.3223E2
- monoisotopic MolecularWeight:** 3.310643E2
- inChI:** InChI=1S/C17H15Cl2N3/c18-13-8-15-16(9-14(13)19)22(10-11-4-2-1-3-5-11)17(21-15)20-12-6-7-12/h1-5,8-9,12H,6-7,10H2,(H,20,21)
- inChIKey:** GSVJCGPPBQGPLZ-UHFFFAOYSA-N
- canonical_smiles:** Clc1cc2nc(NC3CC3)n(Cc4ccccc4)c2cc1Cl
- biochemicalInteraction:** identifier: ChEMBL614071 url: https://www.ebi.ac.uk/chembl/target_report_card/ChEMBL614071
identifier: ChEMBL398 url: https://www.ebi.ac.uk/chembl/target_report_card/ChEMBL398
identifier: ChEMBL377 url: https://www.ebi.ac.uk/chembl/target_report_card/ChEMBL377



Bioschemas for Biodiversity



[Examples](#)

Taxon Profile: <https://bioschemas.org/profiles/Taxon>

Property	Expected Type	Description	CD	Controlled Vocabulary	Example
Marginality: Minimum.					
<u>name</u>	<u>Text</u>	<p>Schema: The name of the item.</p> <p>Bioschemas: Currently valid (zoological) or accepted (botanical) name for that taxon, with authorship and date information if known.</p>	ONE		
<u>taxonRank</u>	<u>PropertyValue</u> <u>Text</u> <u>URL</u>	<p>Schema: The taxonomic rank of this taxon given preferably as a URI from a controlled vocabulary (e.g. the ranks from TDWG TaxonRank ontology or equivalent Wikidata URIs)</p>	MANY		
Marginality: Recommended.					
<u>parentTaxon</u>	<u>Taxon</u> <u>Text</u> <u>URL</u>	<p>Schema: Closest parent taxon of the taxon in question. Inverse property: childTaxon</p> <p>Bioschemas: Direct, most proximate higher-rank parent taxon</p>	ONE		
<u>url</u>	<u>URL</u>	<p>Schema: URL of the item.</p>	ONE		

Bioschemas Taxon Profile

<http://bioschemas.org/profiles/Taxon/>

Property	Description	Cardinality
name	Currently valid (zoological) or accepted (botanical) name for that taxon, with authorship and date information if known.	One
taxonRank	The taxonomic rank of this taxon given preferably as a URI from a controlled vocabulary (e.g. the ranks from TDWG TaxonRank ontology or equivalent Wikidata URIs)	Many
parentTaxon	Closest parent taxon of the taxon in question. Inverse property: childTaxon Direct, most proximate higher-rank parent taxon	One
url	Link to the webpage associated to this taxon	One
additionalType	A Taxon type from a well known vocabulary, e.g. DarwinCore http://rs.tdwg.org/dwc/terms/Taxon or http://rs.tdwg.org/ontology/voc/TaxonConcept#TaxonConcept	Many
alternativeName	Scientific name, with authorship and date information if known, of a synonym of the currently valid (zoological) or accepted (botanical) name.	Many
childTaxon	Closest child taxa of the taxon in question. Inverse property: parentTaxon Direct, most proximate lower-rank child taxa	Many
hasCategoryCode	A Category code contained in this code set.	Many
sameAs	URL of third-party webpages describing the same taxon	Many
dwc:vernacularName	A vernacular (common) name of the taxon	Many

BioSample Profile: <https://bioschemas.org/profiles/BioSample>

Property	Expected Type	Description	CD	Controlled Vocabulary	Example
Marginality: Minimum.					
<u>description</u>	<u>Text</u>	Schema: A description of the item.			
<u>identifier</u>	<u>PropertyValue</u> <u>Text</u> <u>URL</u>	Schema: The identifier property represents any kind of identifier for any kind of Thing, such as ISBNs, GTIN codes, UUIDs etc. Schema.org provides dedicated properties for representing many of these, either as textual strings or as URL (URI) links. See <u>background notes</u> for more details.			
<u>name</u>	<u>Text</u>	Schema: The name of the item.			
<u>url</u>	<u>URL</u>	Schema: URL of the item.			
Marginality: Optional.					
<u>additionalProperty</u>	<u>PropertyValue</u>	Schema: A property–value pair representing an additional characteristics of the entity, e.g. a product feature or another characteristic for which there is no matching property in schema.org. Note: Publishers should be aware that applications designed to use specific schema.org properties (e.g. http://schema.org/width , http://schema.org/color , http://schema.org/gtin13 , ...) will typically expect such data to be provided using those properties, rather than using the generic property/value mechanism.			
<u>associatedDisease</u>	<u>MedicalCondition</u>	Schema:			

BioSample Markup

- BioSample profile
- Deployment in development at Meise Botanical Garden, Belgium

Botanical Collections
Home Herbarium Living Collection Links

Abildgaardia disticha Lye
Cite as: <https://www.botanicalcollections.be/specimen/BR0000009119529>

Specimen

Herbarium Meise Botanic Garden
Barcode BR0000009119529
Type Holotype
Country Brazil
Locality Summit of Morro do Chapeu, ca. 8 km S.W. of Morro do Chapeu to the West of the road to
Date 1977-03-03
Collector Harley R.M.
Collector number 19356
Type of material herbarium sheet

Identification

Name *Abildgaardia disticha* Lye
Genus Abildgaardia
Family Cyperaceae

Structured Data Testing Tool

```

itemtype="https://bioschemas.org/BioSample">
<span itemprop="taxonomicRange">Abildgaardia disticha Lye</span>
<span itemprop="identifier">http://www.botanicalcollections.be/#/en/details/BR0000009119529</span>
<span itemprop="collector" itemscope itemtype="https://schema.org/Person">
  <span itemprop="name">Harley R.M.</span>
</span>
<span itemprop="identifier">http://purl.oclc.org/net/edu.harvard.huh/guid/uuid/82261503-351e-40c1-bf0c-351e40c1bf0c</span>
<span itemprop="custodian" itemscope itemtype="http://schema.org/Organization">
  <span itemprop="name">Meise Botanic Garden</span>
</span>
<span itemprop="geographicLocation" itemscope itemtype="https://schema.org/Place">
  <span itemprop="address">Summit of Morro do Chapeu, ca. 8 km S.W. of the town of Morro do Chapeu, Brazil</span>
  <span itemprop="containedInPlace" itemscope itemtype="https://schema.org/Place">
    <span itemprop="name">Belgium</span>
  </span>
  <span itemprop="geo" itemscope itemtype="https://schema.org/GeoCoordinates">
    <span itemprop="latitude" content="11.583333" />
    <span itemprop="longitude" content="-41.2" />
  </span>
  <span itemprop="dateCreated">1977-03-03</span>
</span>
  
```

https://bioschemas.org/BioSample

Property	Value
@type	https://bioschemas.org/BioSample
taxonomicRange	Abildgaardia disticha Lye
identifier	http://www.botanicalcollections.be/#/en/details/BR0000009119529
dateCreated	1977-03-03
collector	Person
@type	Person
name	Harley R.M.
identifier	http://purl.oclc.org/net/edu.harvard.huh/guid/uuid/82261503-351e-40c1-bf0c-351e40c1bf0c
custodian	Organization
@type	Organization
name	Meise Botanic Garden
geographicLocation	Place
@type	Place
address	PostalAddress
@type	PostalAddress
name	Summit of Morro do Chapeu, ca. 8 km S.W. of the town of Morro do Chapeu, Brazil
containedInPlace	Place
@type	Place
name	Belgium



Bioschemas BioSample Profile

<http://bioschemas.org/profiles/BioSample/>

Property	Description	Cardinality
description	A description of the item.	One
identifier	The identifier property represents any kind of identifier for any kind of Thing, such as ISBNs, GTIN codes, UUIDs etc. Schema.org provides dedicated properties for representing many of these, either as textual strings or as URL (URI) links. See background notes for more details.	One
name	Currently valid (zoological) or accepted (botanical) name for that taxon, with authorship and date information if known.	One
url	Link to the webpage associated to this taxon	One
associatedDisease	Disease associated to this BioChemEntity. Such a disease can be a MedicalCondition or a URL. If you want to add an evidence supporting the association, please use PropertyValue.	Many
bioChemInteraction	A BioChemEntity that is know to interact with this item.	Many
bioChemSimilarity	A similar molecular entity, e.g., obtained by fingerprint similarity algorithm.	Many
biologicalRole	A role played by the molecular entity within a biological context.	Many
collector	The Person or Organization who collected the Sample.	Many
...



Adding Bioschemas to a Resource

- Identify metadata fields
- Map metadata to Bioschema properties
- Generate JSON-LD
- Embed generation into web server

Galaxy Europe / Freiburg

Galaxy HTS data

training
From 2019-02-25 to 2019-03-01
Galaxy beginner workshop

Venue
Institute for Biology III/III
Schaenzlestr.1,
79104, Freiburg im Breisgau
Baden-Württemberg,
Germany

Important notes

1. If you are registered for the workshop, please bring your own laptop.
2. Please register to our mailing list: galaxy@mpi-freiburg.de
3. You can bring your own data.
4. The workshop is free of charge.

Program:
Every day the workshop will have a different topic. Preliminary schedule. Topics to be confirmed.

Galaxy Project | Bioschemas

title
date
duration
location
image
location
external
contact

chomas Profile Markup Generator

Not Secure | www.macs.hw.ac.uk/SWeL/BioschemasGenerator/#

Profile Form

Taxon (v0.3) Additional Properties

This profile aims to denote a taxon by common properties such as its scientific name, authority, taxonomic rank and vernacular names. It is also a means to link to a URI.

name (Minimum) Text

Bioschemas.org: Taxon name without authorship or accepted (botanical) taxon. Schema.org: Th...

parentTaxon (Recommended) Taxon

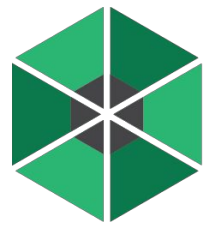
Additional Properties

This profile aims to denote a taxon by common taxonomic rank and vernacular names. It is also each taxon has a URI.

name (Minimum) Text

```
{
  "@context": "http://schema.org",
  "@type": "CreativeWork",
  "name": "{{material.title}}",
  {% if material.zenodo_link or material.workflows %}
  "mentions": [
    {% if material.zenodo_link and material.zenodo_link != '' %}
    {
      "@type": "Thing",
      "url": "{{material.zenodo_link}}",
      "name": "Training data for {{material.title}} tutorial"
    }
    {% if material.workflows %}
    {
      "@type": "Thing",
      "url": "{{ site.github_repository }}/tree/master/topics/{{material.title}}",
      "name": "Workflow for {{material.title}} tutorial"
    }
  ]
  {% endif %}
  {% endif %}
  {% if material.workflows %}
  {
    "@type": "Thing",
    "url": "{{ site.github_repository }}/tree/master/topics/{{material.title}}",
    "name": "Workflow for {{material.title}} tutorial"
  }
  {% endif %}
}
```





Bioschemas

What?

- Exploiting schema.org to make Life Sciences resources more discoverable
 - Search engines will index and understand markup

How?

- Extending schema.org vocabulary for life sciences
- Provide guidelines on how to markup resources
- Biodiversity types and profiles available

Property	Expected Type	Description	CD	Controlled Vocabulary
Marginality: Minimum.				
<u>description</u>	Text	Schema: A description of the item. Bioschemas: A short summary describing a dataset.	ONE	
<u>identifier</u>	PropertyValue Text	Schema: The identifier property represents any kind of identifier for any kind	MANY	
<u>keywords</u>				
<u>name</u>				
<u>url</u>				
Marginality: Recor				
<u>citation</u>				

```
1 {
2   "@context": "http://schema.org",
3   "@type": "Dataset",
4   "@id": "http://www.uniprot.org/uniparc",
5   "name": "UniProt Archive (UniParc)",
6   "description": "The UniProt Archive (UniParc) is a compr
7   "url": "http://www.uniprot.org/uniparc",
8   "identifier": "UniParc",
9   "keywords": "protein, protein sequence, archive",
10  "includedInDataCatalog": "http://www.uniprot.org",
11  "creator": {
12    "@type": "Organization",
13    "name": "UniProt Consortium"
14  },
15  "version": "2017-09",
16  "license": "Creative Commons Attribution-NoDerivs",
17  "distribution": [
18    {
```



Bioschemas Community

30
Profiles

89
Sites
[bioschemas.org/
liveDeploys](https://bioschemas.org/liveDeploys)

14+
Countries

20M+
Pages
bioschemas.org/liveDeploys

300+
People


17
Types




Acknowledgements <http://bioschemas.org/people>

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- Michael Baudis
- Roman Baum
- Niall Beard
- Jerven Bolleman
- Michelle Brazas
- Cath Brooksbank
- Tony Burdett
- Guillermo Calderon Mantilla
- Ethy Cannon
- Denise Carvalho-Silva
- Luca Cherubin
- Justin Clark-Casey
- Dave Clements
- Martin Cook
- Manuel Corpas
- Melanie Courtot
- Michael R Crusoe
- Pavel Dallakian
- Luc Deltombe
- Victoria Dominguez Del Angel
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- Stian Soiland-Reyes
- Morris Swertz
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- Milo Thurston
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- Peter van Heusden

 bioschemas.org

 [@bioschemas](https://twitter.com/bioschemas)

 [github.com/
bioschemas](https://github.com/bioschemas)

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Join Bioschemas: <http://bioschemas.org/howtojoin/>