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How the Open Discovery Infrastructure Enables Innovation in Academic Search

Peter Kraker

Co-created with Maxi Schramm

Open Science Network - Bielefeld University
24 October 2022

Science

SARA GIRONI CARNEVALE

Scientists are drowning in COVID-19 papers. Can new tools keep them afloat?

© American Association for the Advancement of Science

Dark Knowledge
(Jeschke et al.)

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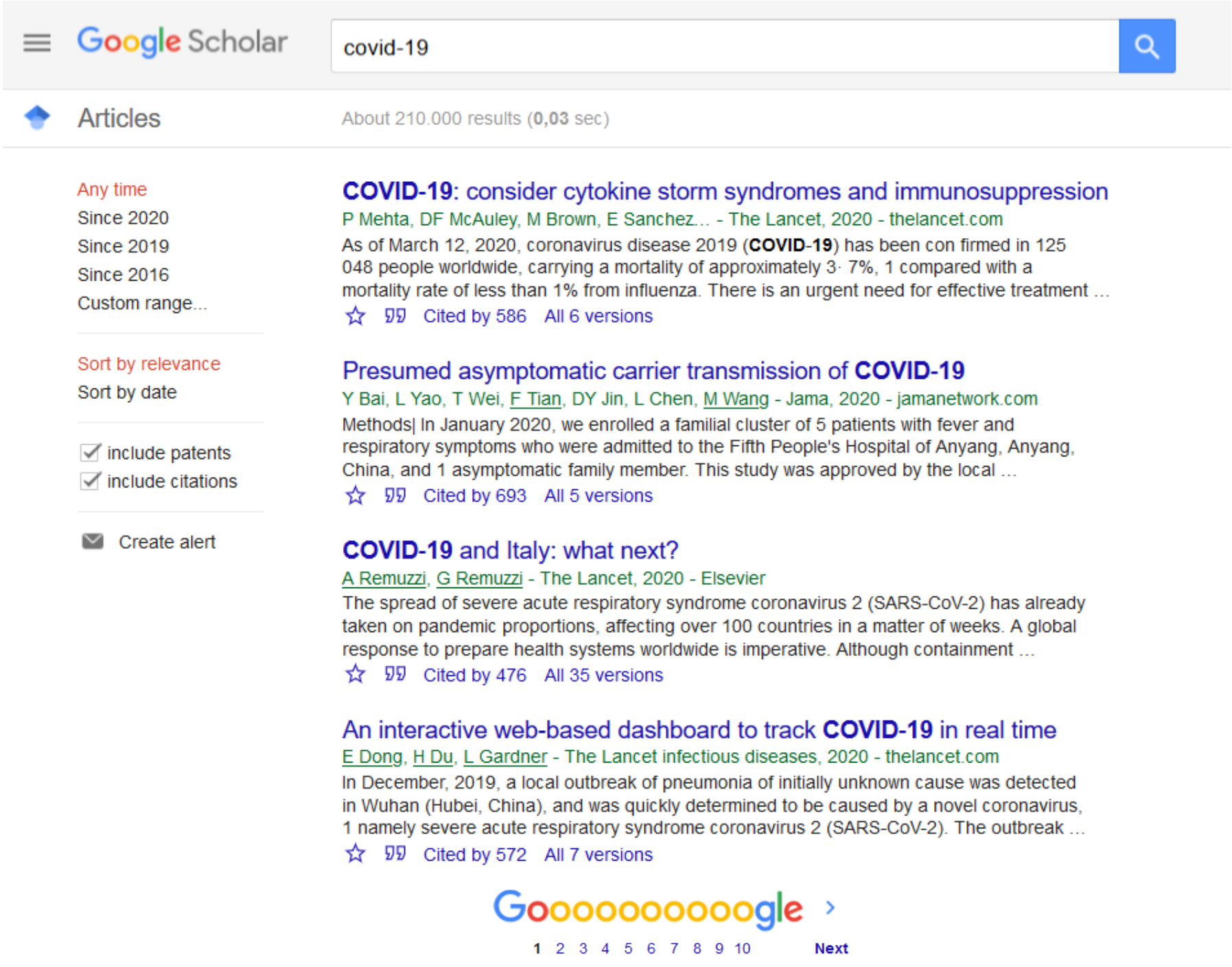
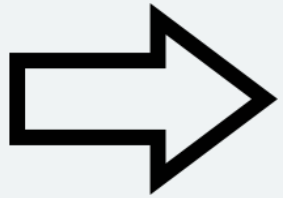

Google Scholar
covid-19
Articles
About 210.000 results (0,03 sec)
Any time
Since 2020
Since 2019
Since 2016
Custom range...
Sort by relevance
Sort by date
include patents
include citations
Create alert
COVID-19: consider cytokine storm syndromes and immunosuppression
P Mehta, DF McAuley, M Brown, E Sanchez... - The Lancet, 2020 - thelancet.com
As of March 12, 2020, coronavirus disease 2019 (COVID-19) has been con firmed in 125 048 people worldwide, carrying a mortality of approximately 3· 7%, 1 compared with a mortality rate of less than 1% from influenza. There is an urgent need for effective treatment ...
Cited by 586 All 6 versions
Presumed asymptomatic carrier transmission of COVID-19
Y Bai, L Yao, T Wei, F Tian, DY Jin, L Chen, M Wang - Jama, 2020 - jamanetwork.com
Methods| In January 2020, we enrolled a familial cluster of 5 patients with fever and respiratory symptoms who were admitted to the Fifth People's Hospital of Anyang, Anyang, China, and 1 asymptomatic family member. This study was approved by the local ...
Cited by 693 All 5 versions
COVID-19 and Italy: what next?
A Remuzzi, G Remuzzi - The Lancet, 2020 - Elsevier
The spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has already taken on pandemic proportions, affecting over 100 countries in a matter of weeks. A global response to prepare health systems worldwide is imperative. Although containment ...
Cited by 476 All 35 versions
An interactive web-based dashboard to track COVID-19 in real time
E Dong, H Du, L Gardner - The Lancet infectious diseases, 2020 - thelancet.com
In December, 2019, a local outbreak of pneumonia of initially unknown cause was detected in Wuhan (Hubei, China), and was quickly determined to be caused by a novel coronavirus, 1 namely severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak ...
Cited by 572 All 7 versions
Goooooooooogle
1 2 3 4 5 6 7 8 9 10 Next



ResearchGate

WEB OF SCIENCE™

Google Scholar

Scopus®

WALL OF DARK KNOWLEDGE

There is a discoverability crisis

that negatively affects quality, efficiency, impact, and visibility of science

The cycle of continuous innovation

Institutions,Researchers, Publishers

AUSSDA AUSTRIAN SOCIAL SCIENCE DATA ARCHIVE

reposiTUm WIEN

ETH zürich Research Collection

ECONBIZ Find Economic Literature.

PubMed

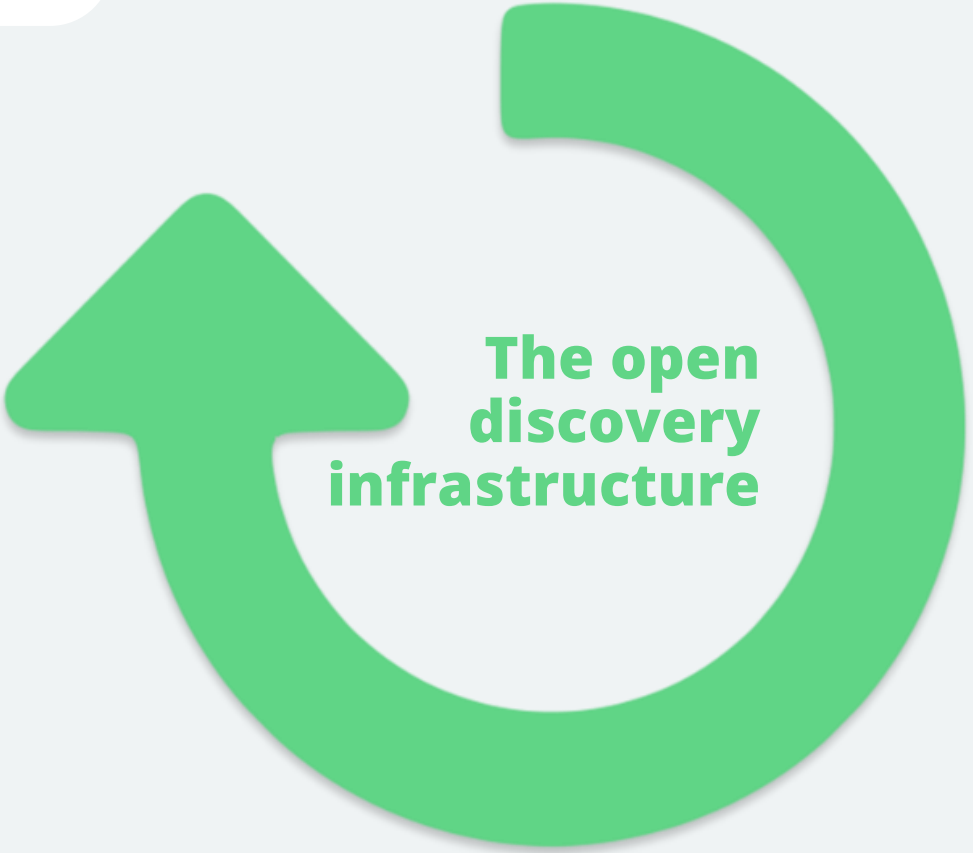
Crossref

zenodo

arXiv.org

AfricArXiv

Libraries, Archives, Repositories, Aggregators



The open discovery infrastructure

Value added services

OPEN KNOWLEDGE MAPS

ORCID

unpaywall

ScholeXplorer The Data Literature Interlinking Service

RE figure

SCHOLIA

Meta aggregators

OpenAIRE

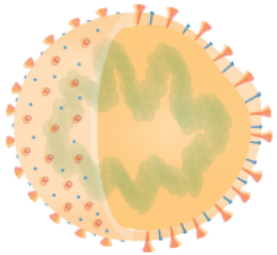
BASE

CORE

WIKIDATA

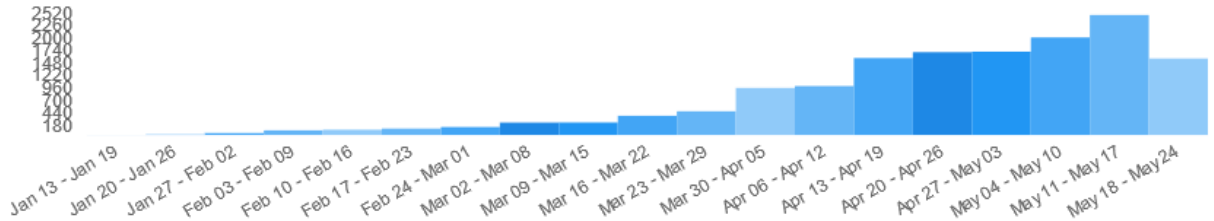
LitCovid | Ex: Remdesivir | NIH NLM

GENERAL MECHANISM TRANSMISSION DIAGNOSIS TREATMENT PREVENTION CASE REPORT FORECASTING

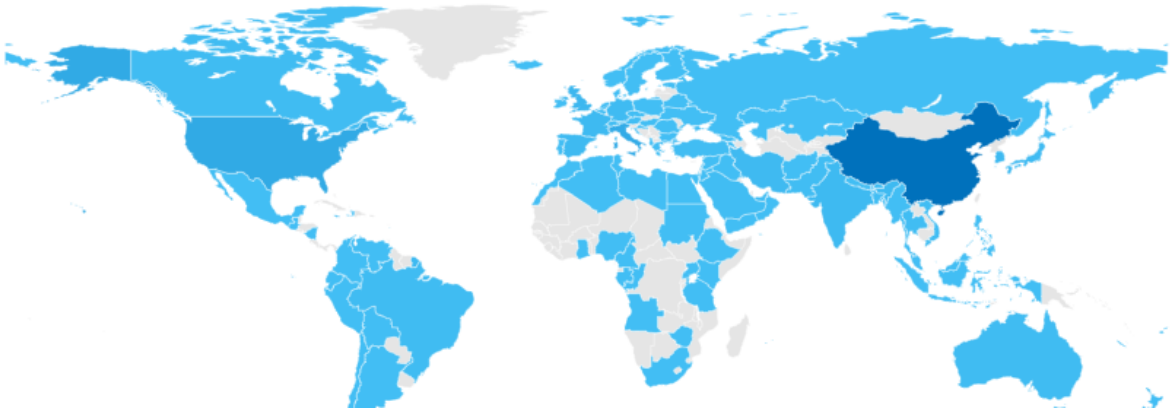


LitCovid is a curated literature hub for tracking up-to-date scientific information about the 2019 novel Coronavirus. It is the most comprehensive resource on the subject, providing a central access to 15227 (and growing) relevant articles in PubMed. The articles are updated daily and are further categorized by different research topics and geographic locations for improved access. You can learn more at Chen et al. Nature (2020) or our FAQ, and download our data here.

Weekly Publications



Countries Mentioned in Abstracts



Latest Publications

MECHANISM

COVID-19 and vaping: risk for increased susceptibility to SARS-CoV-2 infection?

McAlinden, Kielan Darcy et al. • Eur Respir J

GENERAL INFO

Coronavirus contact-tracing apps: can they slow the spread of COVID-19?

Zastrow, Mark et al. • Nature

TREATMENT • MECHANISM

Potential differential effects of renin-angiotensin system inhibitors on SARS-CoV-2 infection and lung injury in COVID-19.

Furuhashi, Masato et al. • Hypertens Res

PREVENTION

The outbreak of COVID-19 in Mulhouse : Hospital crisis management and deployment of military hospital during the outbreak of COVID-19 in Mulhouse, France.

Kuteifan, Khaldoun et al. • Ann Intensive Care

PREVENTION

https://www.ncbi.nlm.nih.gov/research/coronavirus/

Discover New Insights About the Novel Coronavirus

Quickly explore the latest literature using these open tools built by the team at Allen Institute for AI.

Download CORD-19

The COVID-19 Open Research Dataset (CORD-19) is a growing resource of scientific papers on COVID-19 and related historical coronavirus research.

Download →

Adaptive Research Feed

Personalize your free AI-powered Research Feed to get coronavirus research recommendations.

Stay Up To Date →

Recent Research

Query the Semantic Scholar corpus for the latest CORD-19 research sorted by recency.

View Research →

SPIKE-CORD

A powerful sentence-level, context-aware, linguistically informed system for extracting important information from a large corpus of COVID-19-related text.

View SPIKE-CORD →

SciSight

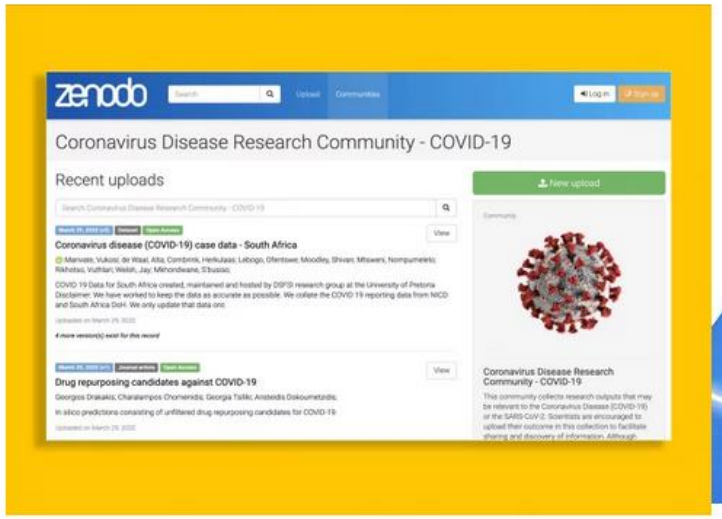
Visually investigate associations between concepts appearing in the scientific literature contained in CORD-19.

View SciSight →

https://www.semanticscholar.org/cord19

OpenAIRE for COVID-19

Learn about our activities on how we try to help researchers combat the new coronavirus epidemic and to understand its aftermath.



Zenodo Community

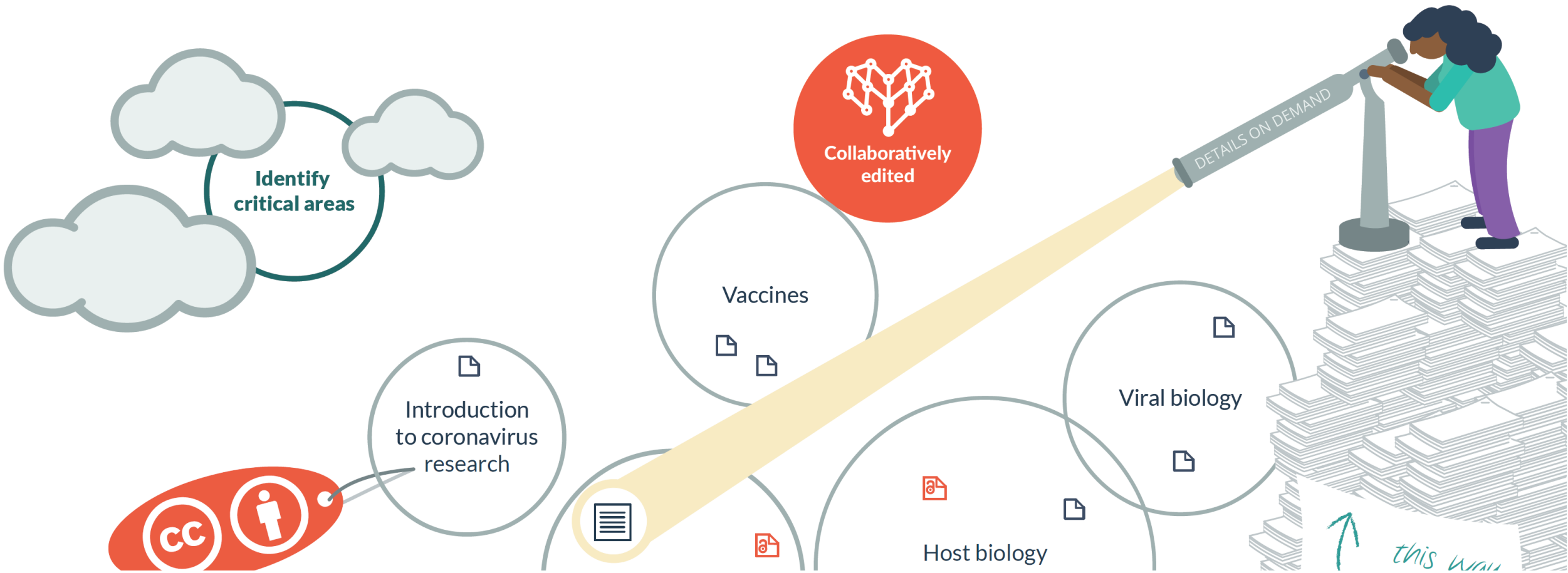
Ready to use

Scientific Gateway

Ready to use

https://www.openaire.eu/openaire-activities-for-covid-19

CoVis Discover reliable COVID-19 research



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EOSCsecretariat.eu
Setup and management of the EOSC Secretariat supporting the EOSC Governance

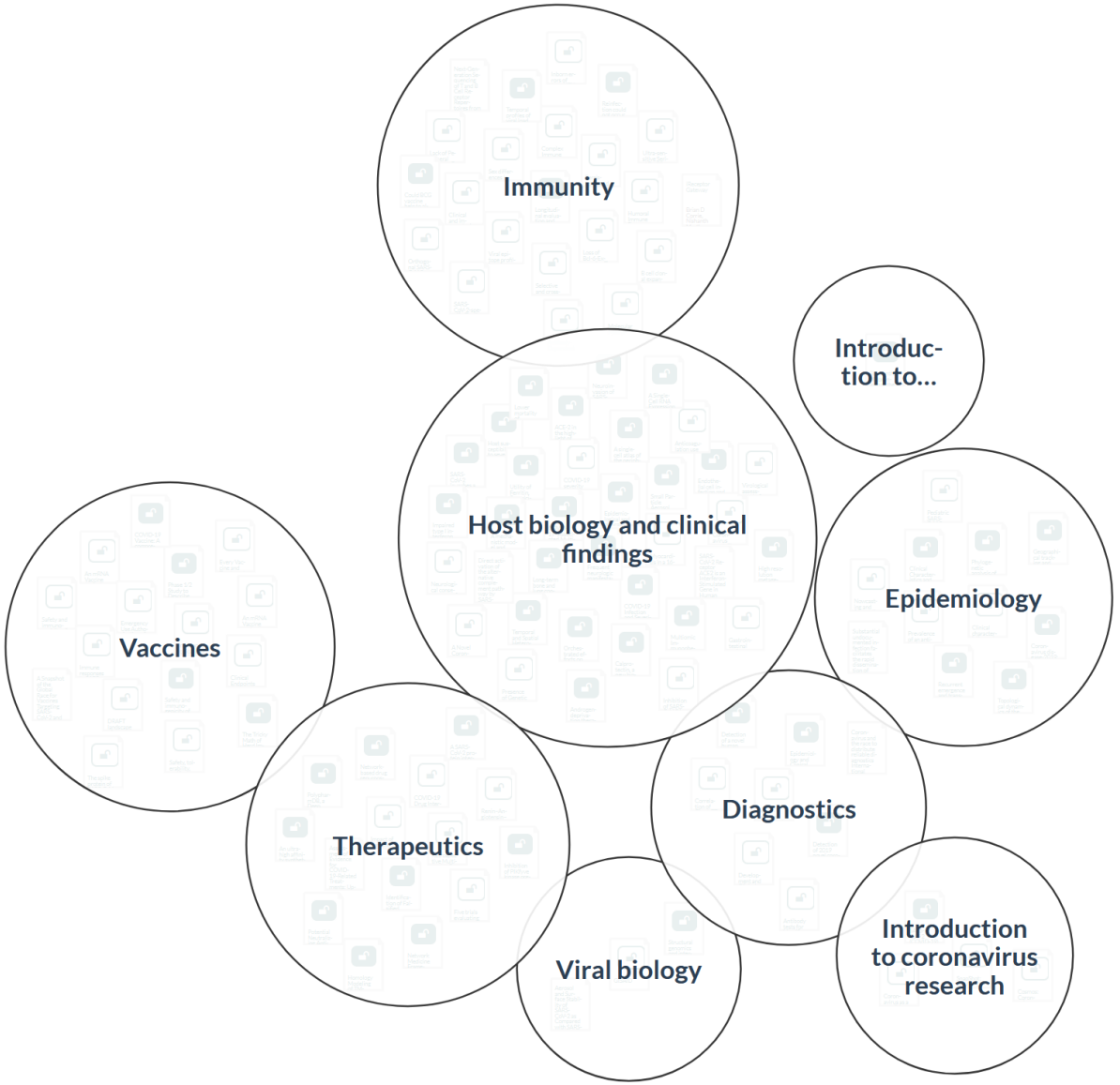
Created by

OPEN KNOWLEDGE MAPS

RE figure

Overview of **COVID-19 research** curated by experts

115 resources and collections (52 open access) Data source: CoVis database Last updated: 2021-05-20 11:29:30 UTC



Hide list (115 items)

Search within map... show: **Any** sort by: **Date**

open access

Recurrent emergence and transmission of a SARS-CoV-2 Spike deletion ΔH69/V70

PDF

SA Kemp, WT Harvey, RP Datir, DA Collier, IATM Ferreira, AM Carabelli, DL Robertson, RK. Gupta in *BioRxiv* **(2020-12-21)**

[link]: https://www.biorxiv.org/content/10.1101/2020.12.14.422555v3

Document type: Preprint

SARS-CoV-2 Spike amino acid replacements in the receptor binding domain (RBD) occur relatively frequently and some have a consequence for immune recognition. Here we report recurrent emergence and significant onward transmission of a six-nucleotide d...

Keywords: n/a

Area: Epidemiology

Direct activation of the alternative complement pathway by SARS-CoV-2 spike proteins is blocked by factor D inhibition

LINK

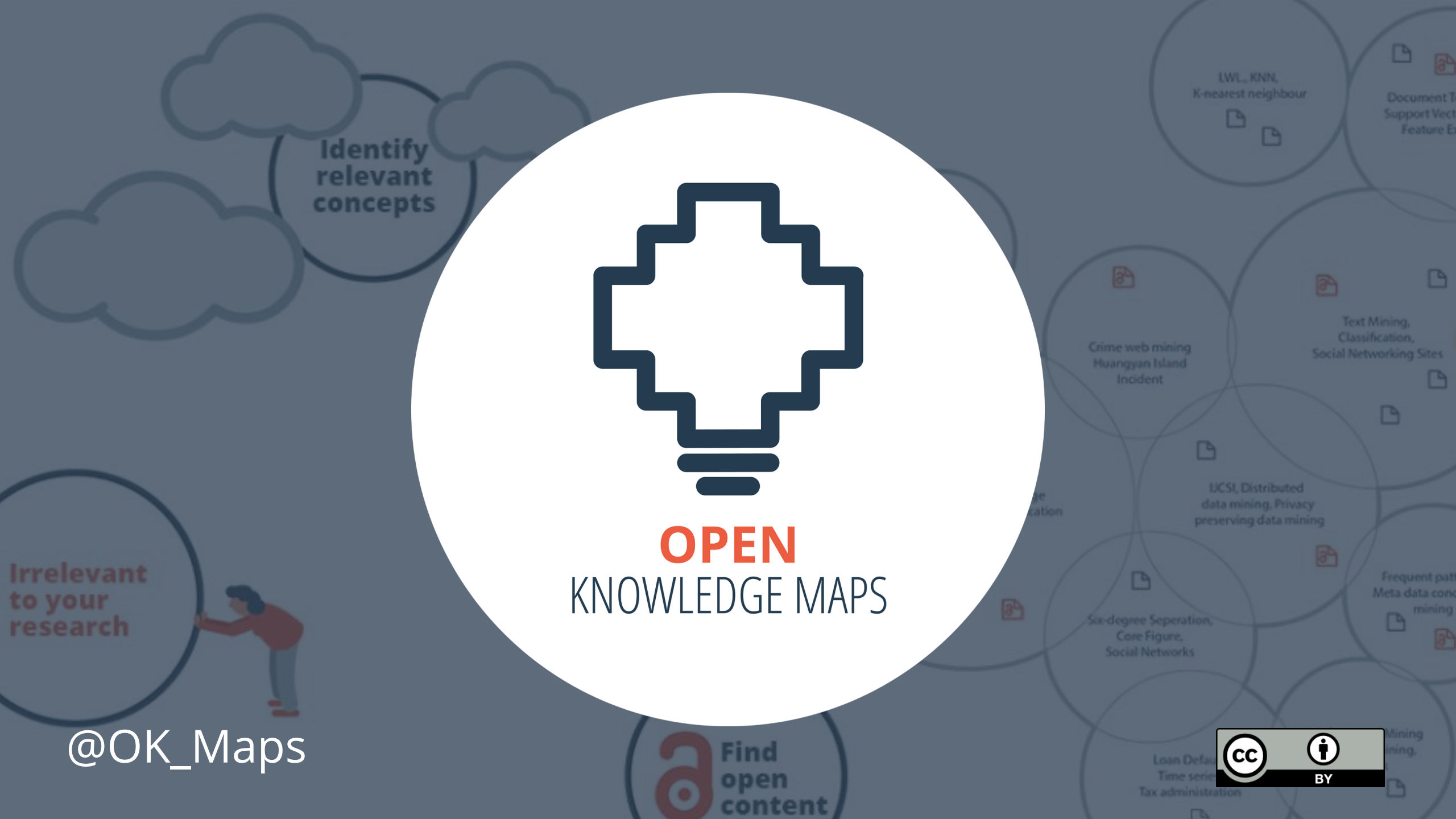
Jia Yu, Xuan Yuan, Hang Chen, Shruti Chaturvedi, Evan M Braunstein, Robert A. Brodsky in *The American Society of Hematology* **(2020-10-29)**

[link]: https://ashpublications.org/blood/article/doi/10.1182/blood.20200...

Document type: Journal Article

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a highly contagious respiratory virus that can lead to venous/arterial thrombosis, stroke, renal failure, myocardial

https://openknowledgemaps.org/covis


Identify relevant concepts
Irrelevant to your research
Find open content
Crime web mining Huangyan Island Incident
Text Mining, Classification, Social Networking Sites
IJCSI, Distributed data mining, Privacy preserving data mining
Six-degree Seperation, Core Figure, Social Networks
OPEN
KNOWLEDGE MAPS
@OK_Maps

Who we are

Open Knowledge Maps

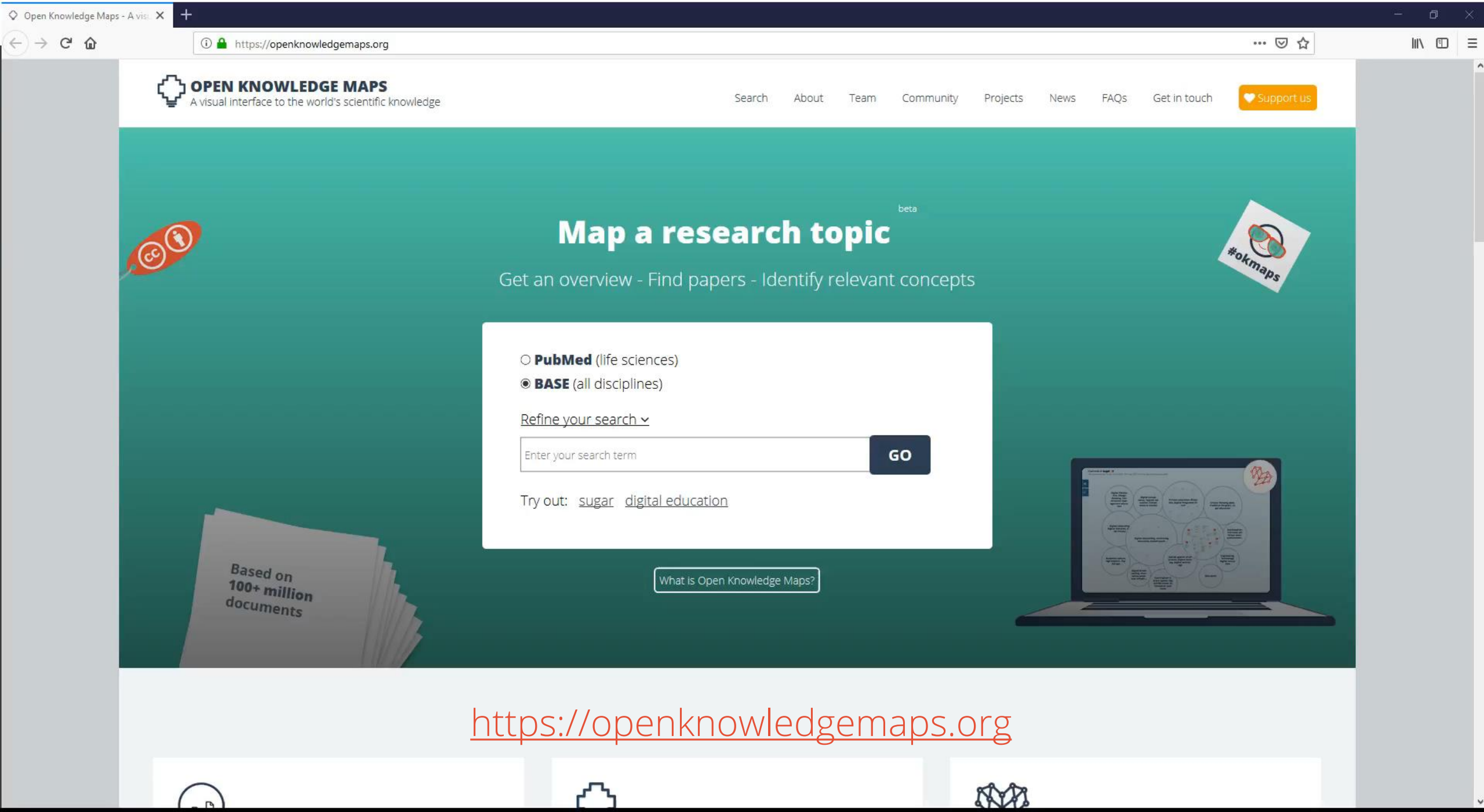
is **a charitable non-profit organization**

dedicated to dramatically **improving the visibility of scientific knowledge**

for science and society alike

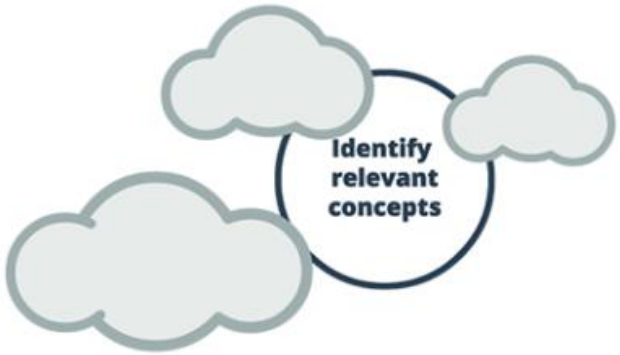
OPEN
KNOWLEDGE
MAPS

Overview of heart diseases



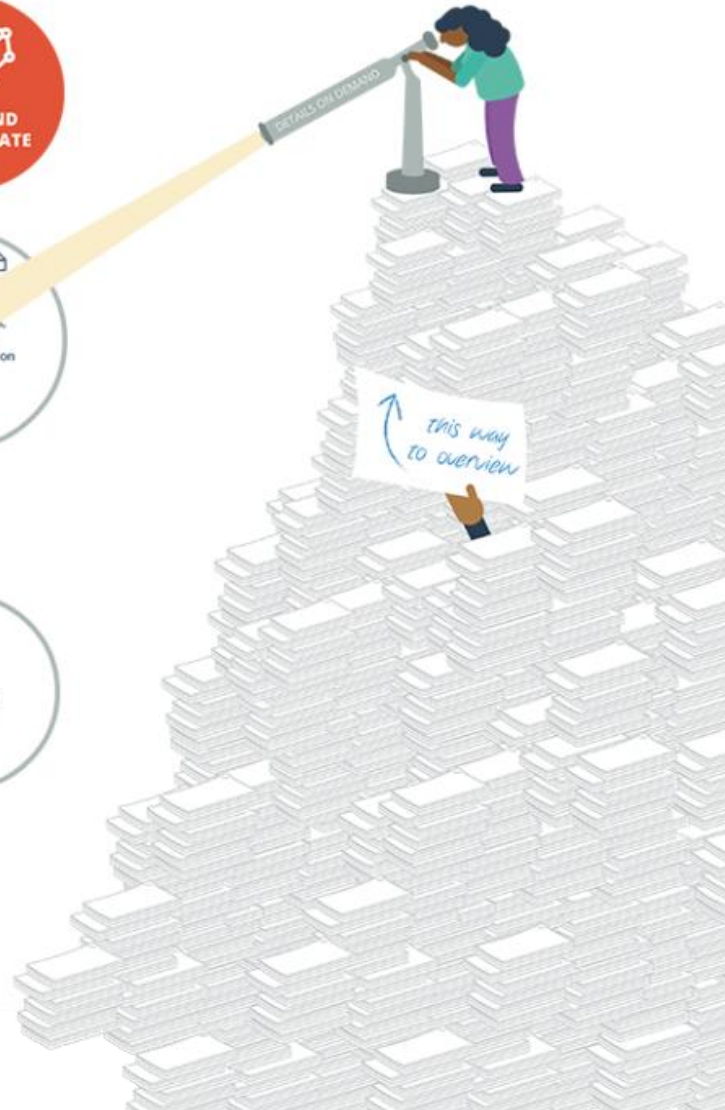
https://openknowledgemaps.org

Advantages


Identify
relevant
concepts

Irrelevant
to your
research

Records,
Lecture,
laeng
LWL, KNN,
K-nearest neighbour
Document Term Matrix,
Support Vector Machine,
Feature Extraction
SHARE AND
COLLABORATE
Crime web mining
Huangyan Island
Incident
Text Mining,
Classification,
Social Networking Sites
Big Data, Natural Language
Processing, Session Identification
IJCSI, Distributed
data mining, Privacy
preserving data mining
Six-degree Seperation,
Core Figure,
Social Networks
Frequent patterns,
Meta data conceptual
mining
K-means,
J48, Hotspot
Loan Default,
Time series,
Tax administration
Web Structural Mining
(WSM), Data mining,
Hyperlink
Find
open
content


this way
to overview

How it works

An Open Knowledge Maps visualization presents you with a **topical overview** for your search term. It is **based on the 100 most relevant documents** from either **BASE** or **PubMed** for your search term.

We use **text similarity** to create the knowledge maps. The algorithm groups those papers together that have more words in common in the metadata.

Largest visual search engine for research

By end of September 2022:

2+ million visits

1+ million maps created

5000+ participants in workshops

All of our services are free & open

Our offering includes:

- Innovative search and discovery services
- Integrations for BASE, PubMed, and OpenAIRE
- **New!** Institutional integration via Custom Services
- A wide range of training activities and materials
- Our award-winning visualization software
- Community support & engagement programs

Partners

WIKIMEDIA
ÖSTERREICH

WIKIMEDIA
DEUTSCHLAND

OPEN
SCIENCE
MOOC
FREE | OPEN | LEARNING

BASE

ROpenSci

Scientific Knowledge
SERVICES

OpenUP

Furizon
Find your way to Horizon

CORE

our
research

Afric ArXiv

hypothes.is

ContentMine

Year
Young European Associated Researchers
www.year-network.com

RE
figure

INTERNET ARCHIVE

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Advisors

Peter Murray-Rust

Stefanie Lindstaedt

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Daniel Mietchen

Andreas Ferus

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Isabella Peters

Osman Aldirdiri

Tony Ross-Hellauer

Asura Enkhbayar

Stefan Kasberger

Stefanie Haustein

Michael E. Karpeles

Christine Zhang

Sebastian Dennerlein

Antica Culina

Christian Kaier

Select projects

TRIPLE - The multilingual discovery platform for the social sciences and humanities
EU Horizon 2020

enKORE – Towards an open, zoomable atlas for invasion science and beyond
VolkswagenStiftung: Offen - für Außergewöhnliches

CoVis – A curated, collaborative & visual knowledge base for COVID-19 research
EOSC Secretariat COVID-19 Fast-Track Funding

Supporting members

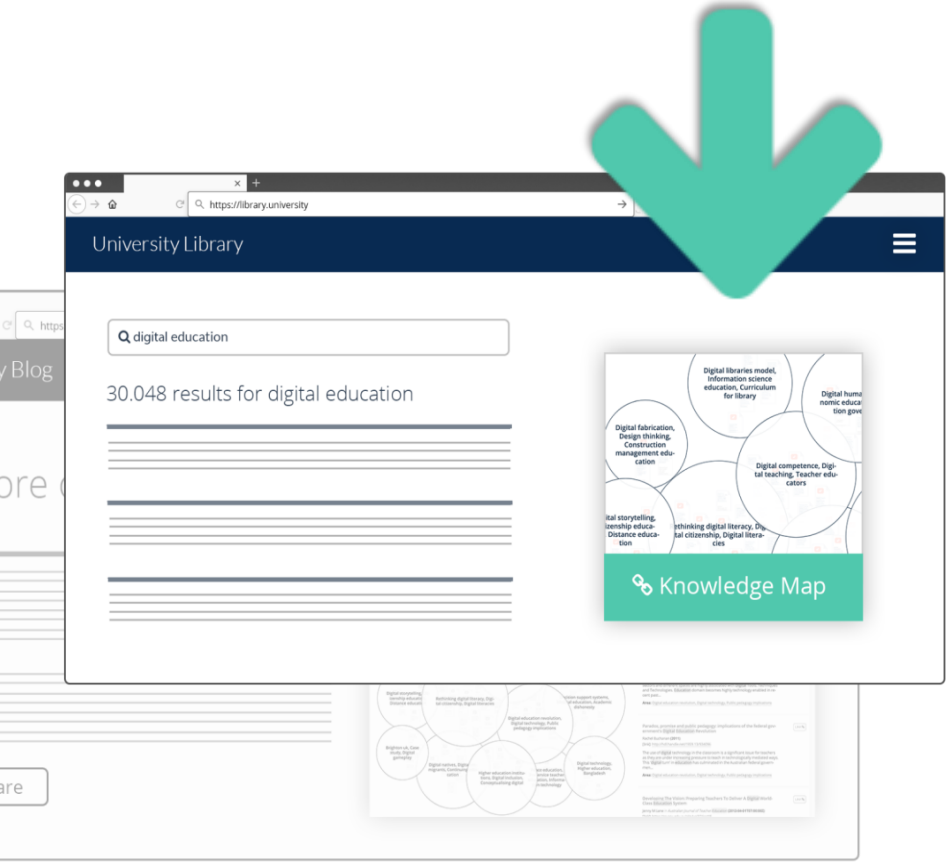
Participatory approach

This means:

- Co-creation of platform with our community
- Community involvement in governance
- Equitable balancing of stakeholder needs
- Community-based funding & engagement
- Open licences for content, data, and source code
- Easy integration in community infrastructure

Custom Services

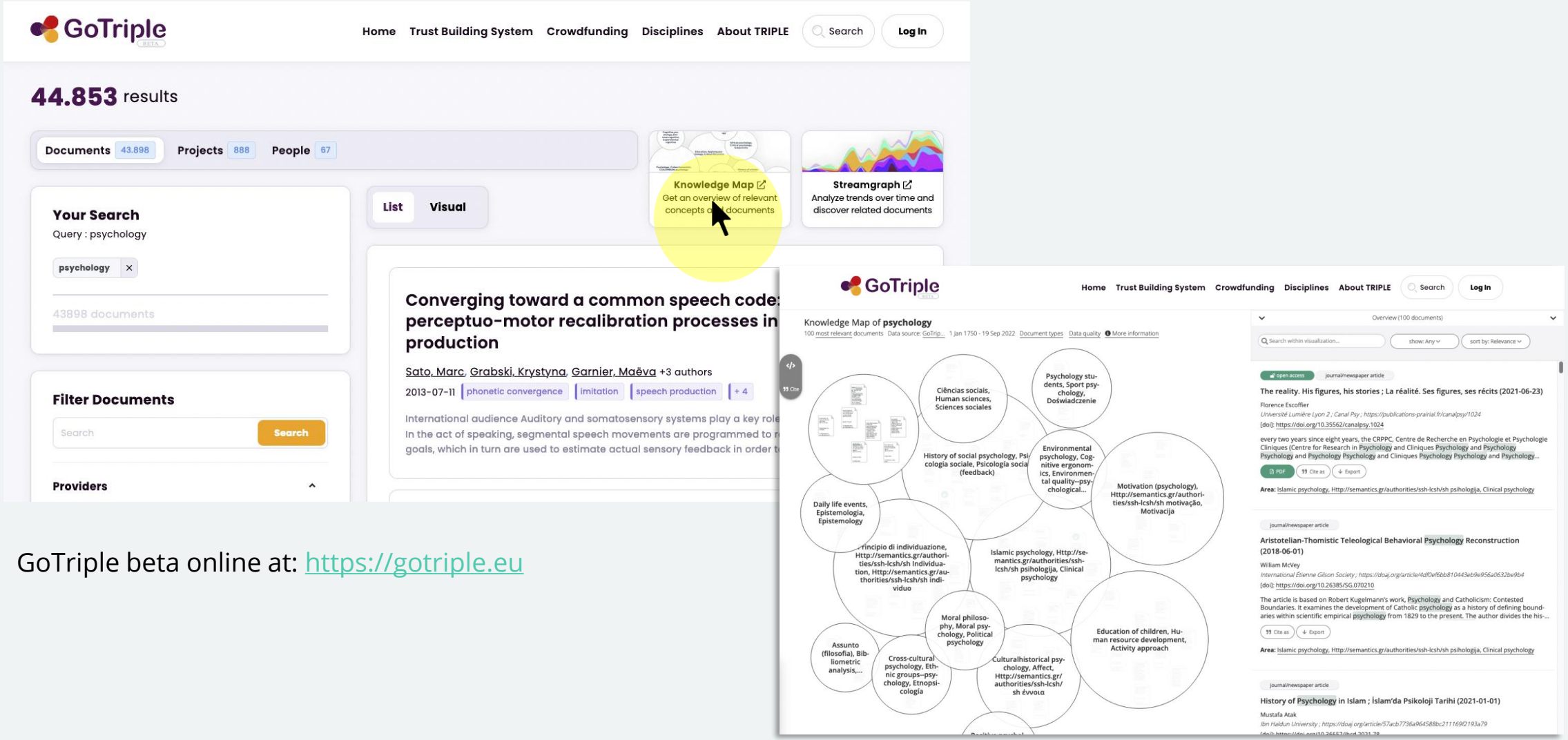
Custom Services in a nutshell



Enable 3rd parties to embed Open Knowledge Maps services in their own discovery systems

- Co-created with our supporting members and community
- Integrators can set individual parameters, including the ability to restrict knowledge maps to their own data sources
- Available as easy-to-install cloud components

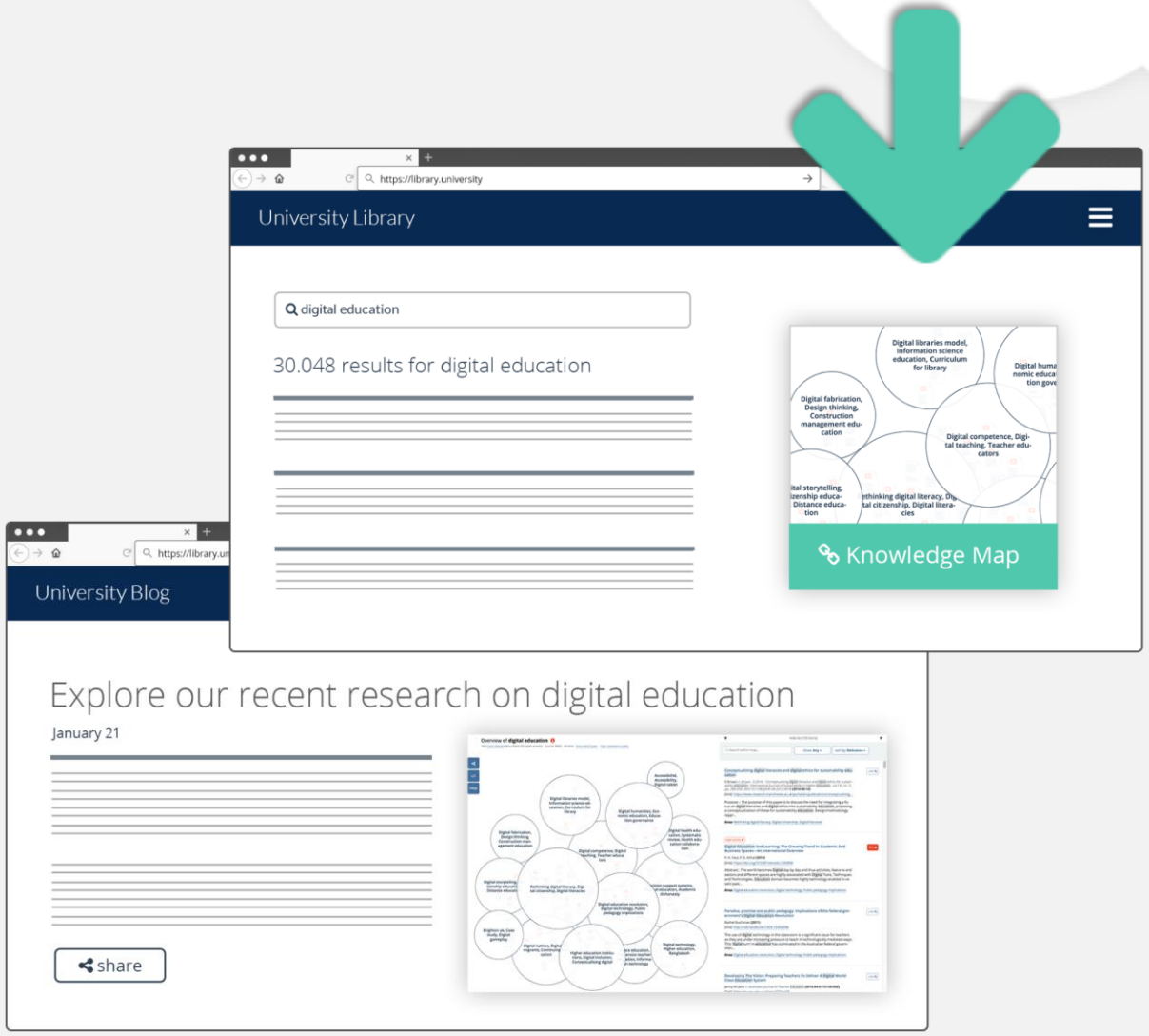
Example: GoTriple integration



GoTriple beta online at: https://gotriple.eu

Technical setup

OPEN
KNOWLEDGE
MAPS



Aggregators

BASE

OpenAIRE

Institutions/
platforms

ETH zürich | ETH-Bibliothek

enKORE

TU Bibliothek Your knowledge hub

GoTriple BETA

Four principles of...

...the information system supporting research

ELSEVIER

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Wikipedia
PlumX
public methodology
Crossref
Editorial manager
open editorial review
Transparent
Mendeley Data
link to underlying sources
GitHub
Symplectic
Digital Commons
institution content
Plum Analytics
Plum Prints
web aggregator
SciVal
Benchmarking
visibility of underlying metrics
CiteScore
public methodology
Mendeley
Mendeley API
public API
Pure
multiple system integration
PubMed
Altmetric
Mendeley
Mendeley Feed
cross publisher
Source neutral
Inter-operable
Mendeley Data
multiple data integration
arXiv.org
DataSearch
cross repository index
SSRN
user-level sharing options
Mendeley
Mendeley Profile
fully user configurable
Reaxys
3rd party content access
Scopus
cross publisher & patent offices
User control
ScienceDirect
ScienceDirect APIs
ORCID
Scopus
custom alerts
ScienceDirect
search alerts
OpenAIRE
Summon 2.0
SCHOLIX
Mendeley
Mendeley Library
user-owned library
Bookmetrix

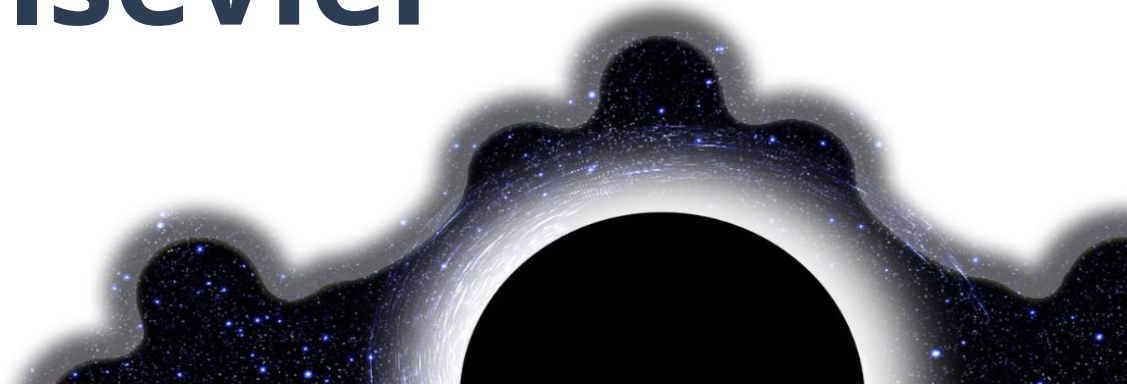
ELSEVIER

Wikipedia
Crossref
GitHub
SYMPLECTIC
PubMed
Altmetric
arXiv.org
ORCID
OpenAIRE
Summon 2.0
SCHOLIX
Bookmetrix
Control
User Data
Governance
Innovation

ELSEVIER

Let’s make the open infrastructure sustainable!

#DontLeaveItTo**Google**
#DontLeaveItTo**SpringerNature**
#DontLeaveItTo**Elsevier**



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… and don‘t forget to sign up for our newsletter ;)

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