

Realising the **European**
 Open Science **Cloud**



FREYA PID Graph Services

Martin Fenner, DataCite Technical Director
<https://orcid.org/0000-0003-1419-2405>

Housekeeping rules

- The sessions will be recorded and made available afterwards.
- Please stay muted and keep your video off during presentations.
- You can ask your questions in the chat throughout the session.

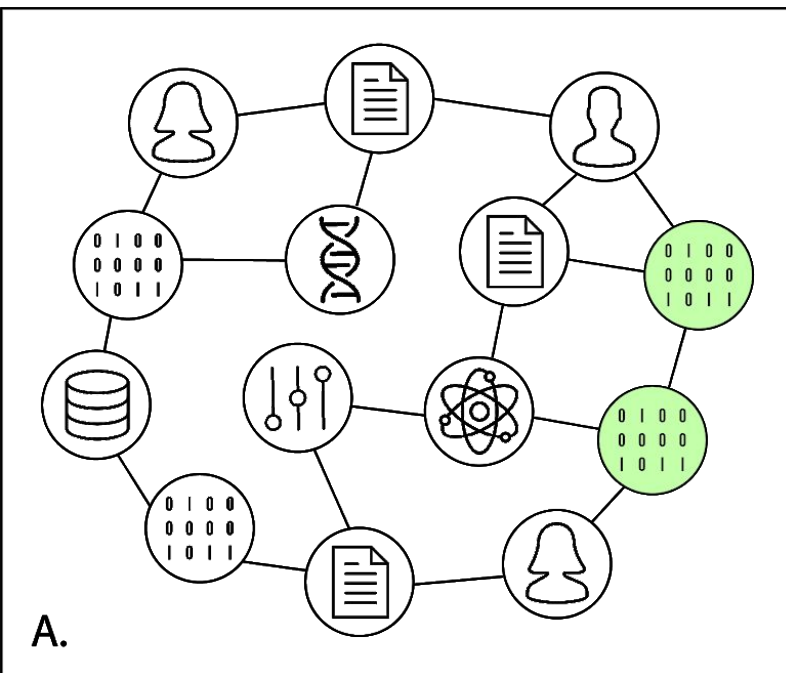
PID Graph – Concept

Scholarly resources and actors such as publications, datasets, software, people and organizations can be uniquely identified using persistent identifiers (PIDs).

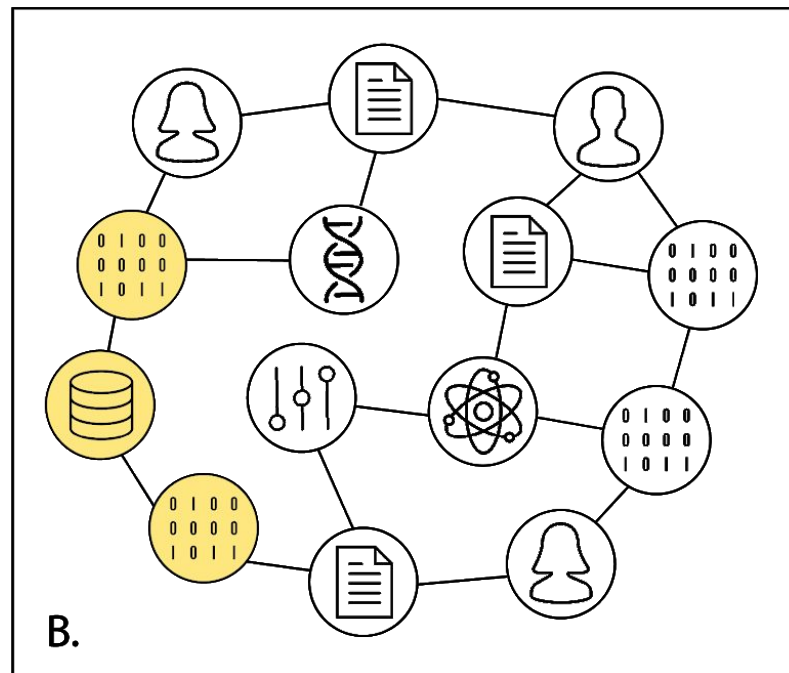
The metadata for these resources and actors can provide unambiguous linking between them.

The combination of these scholarly resources, actors and their connections together form the PID Graph. This graph can be explored, enabling us to address until now unanswered use cases.

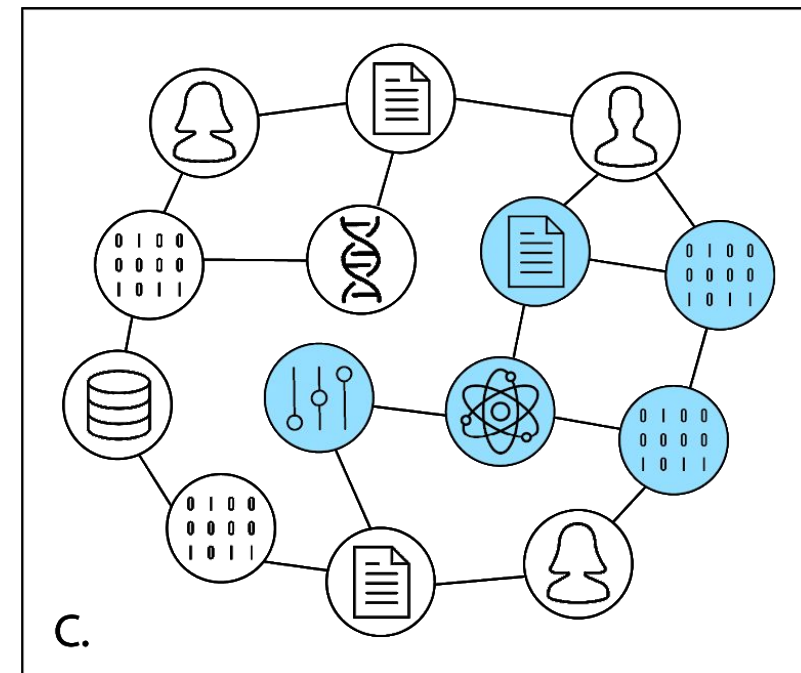
PID Graph Use Cases



Software and dataset
versions



Aggregation by data
repository, funder or
person

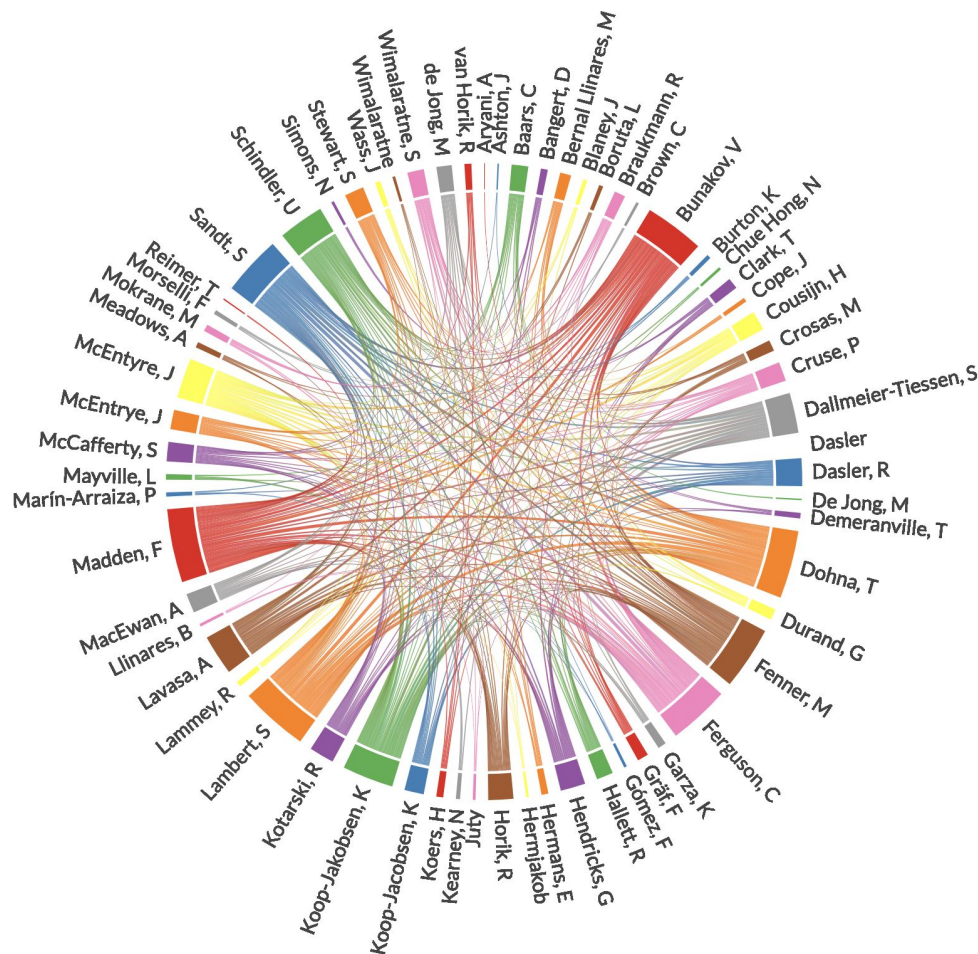


Research object

PID Graph Building Blocks

PID Graph – Concept The connected searchable Graph of publications, datasets, other research outputs, people and organizations.	GraphQL – API The API and query interface that implements the backbone of the FREYA PID Graph.
Jupyter Notebooks A collection of openly available notebooks to generate PID Graph reports using the GraphQL API.	DataCite Commons The web search interface built on top of the GraphQL API.

<https://doi.org/10.14454/qaym-kt26>



DataCite Commons Data Sources

Data Sources

The following main data sources are used in DataCite Commons for a total of currently 40,945,462 records:

DataCite

20,653,003 Works
100% of identifiers and
metadata.

Crossref

10,001,223 Works
8.42% of identifiers and
metadata. Import is ongoing.

ORCID

10,192,638 People
100% of identifiers. Personal
and employment metadata.

ROR

98,598 Organizations
100% of identifiers and
metadata.

Additional information comes from these data sources:

- [Wikidata](#): inception year, geolocation and Twitter account for organizations
- [Unpaywall](#): download link for Open Access content via Crossref

DataCite Commons

DataCite Commons

[Pages](#)
[Support](#)
[Sign In](#)
[Works](#)
[People](#)
[Organizations](#)

129,401 Works

Single Cell Protein from Landfill Gas

Deenesh Babi, Jason Price & Woodley, Prof. John
Content published 2010 in [DTIC Datacenter](#)

Municipal solid waste (MSW) landfills are one of the largest human-generated sources of methane emissions in the United States and other countries globally. Methane is believed to be a very potent greenhouse gas that is a key contributor to global climate change, over 21 times stronger than CO₂. Methane also has a short (10-year) atmospheric life. Because methane is both potent and short-lived, reducing methane emissions from MSW landfills is one of the best ways to achieve a near-term beneficial impact in mitigating global climate change. The United States Environmental Protection Agency estimates that a landfill gas (LFG) project will capture roughly 60-90% of the methane emitted from the landfill, depending on system design and effectiveness. The captured methane can be then purified and used for industrial applications, as in this case the production of SCP. Utilizing methane in this way decreases its demand from fossil fuels which is its traditional source.

DOI registered April 11, 2011 via DataCite.

[Text](#) [English](#)

<https://doi.org/10.4122/1.1000000046>

Single Cell Protein from Landfill Gas

Deenesh Babi, Jason Price & Woodley, Prof. John
Content published 2010 in [DTIC Datacenter](#)

Municipal solid waste (MSW) landfills are one of the largest human-generated sources of methane emissions in the United States and other countries globally. Methane is believed to be a very potent greenhouse gas that is a key contributor to global climate change, over 21 times stronger than CO₂. Methane also has a short (10-year) atmospheric life. Because methane is both potent and short-lived, reducing methane emissions from MSW landfills is one of the best ways to achieve a near-term beneficial impact in mitigating global climate change. The United States Environmental Protection Agency estimates that a landfill gas (LFG) project will capture roughly 60-90% of the methane emitted from the landfill, depending on system design and effectiveness. The captured methane can be then purified and used for industrial applications, as in this case the production of SCP. Utilizing methane in this way decreases its demand from fossil fuels which is its traditional source.

DOI registered April 11, 2011 via DataCite.

Publication Year

<input type="checkbox"/> 2020	10,557
<input type="checkbox"/> 2019	20,462
<input type="checkbox"/> 2018	13,819
<input type="checkbox"/> 2017	32,577
<input type="checkbox"/> 2016	8,168
<input type="checkbox"/> 2015	11,002
<input type="checkbox"/> 2014	5,257
<input type="checkbox"/> 2013	4,768
<input type="checkbox"/> 2012	4,192
<input type="checkbox"/> 2011	3,509
<input type="checkbox"/> 2010	2,352

Work Type

<input type="checkbox"/> Text	64,840
<input type="checkbox"/> Other	30,769
<input type="checkbox"/> Dataset	24,784
<input type="checkbox"/> Collection	3,855
<input type="checkbox"/> Image	843
<input type="checkbox"/> Audiovisual	538
<input type="checkbox"/> Software	407
<input type="checkbox"/> Interactive Resource	31
<input type="checkbox"/> Event	30
<input type="checkbox"/> Workflow	23
<input type="checkbox"/> Data Paper	16
<input type="checkbox"/> Model	12
<input type="checkbox"/> Physical Object	9
<input type="checkbox"/> Sound	5

Common DOI Search

Find all scholarly resources
with a DOI in a single place.

No matter which DOI
registration agency and
content type.

Registration Agency

<input type="checkbox"/> DataCite	20,654,364
<input type="checkbox"/> Crossref	13,137,161
<input type="checkbox"/> KISTI	514
<input type="checkbox"/> mEDRA	181
<input type="checkbox"/> OP	103
<input type="checkbox"/> JaLC	2

Aggregation by research funder German Research Organization (DFG)

<https://commons.datacite.org/rror.org/018mejw64>

ardc

dataset

crossref

Publication Year

<input type="checkbox"/> 2020	4,984
<input type="checkbox"/> 2019	28,212
<input type="checkbox"/> 2018	21,674
<input type="checkbox"/> 2017	9,118
<input type="checkbox"/> 2016	7,290
<input type="checkbox"/> 2015	4,953
<input type="checkbox"/> 2014	1,974
<input type="checkbox"/> 2013	518
<input type="checkbox"/> 2012	370
<input type="checkbox"/> 2011	349
<input type="checkbox"/> 2010	275

Work Type

<input type="checkbox"/> Text	77,416
<input type="checkbox"/> Dataset	3,548
<input type="checkbox"/> Collection	337
<input type="checkbox"/> Image	27
<input type="checkbox"/> Software	9
<input type="checkbox"/> Sound	8
<input type="checkbox"/> Physical Object	6
<input type="checkbox"/> Model	5
<input type="checkbox"/> Audiovisual	4

License

<input type="checkbox"/> CC-BY-3.0	2,406
<input type="checkbox"/> CC-BY-4.0	1,184

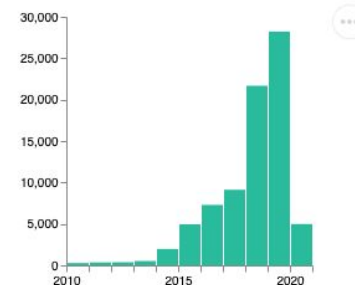
Aggregated Citations, Views and Downloads

100,171 Citations

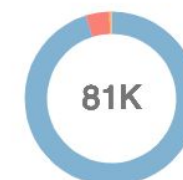
34 Views

81,360 Works

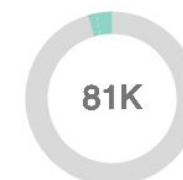
Publication Year



Work Type



License



Calcareous nannofossils of section A5_VB_MP, mid-Cretaceous, supplement to: Herrle, Jens O (2003): Reconstructing nutricline dynamics of mid-Cretaceous oceans: evidence from calcareous nannofossils from the Niveau Paquier black shale (SE France). *Marine Micropaleontology*, 47(3), 307-321

Jens O Herrle

Supplementary Dataset published 2003 in [PANGAEA](#)

A high-resolution calcareous nannofossil record is presented from the Lower Albian Niveau Paquier black shale from the Vocontian Basin (SE France). The Niveau Paquier black shale represents the regional equivalent of the supracaribbean distributed Oceanic Anoxic Event 1b (OAE 1b). To reconstruct surface water fertility, a nutrient index based on *Zeughrabdotus erectus*, *Discorhabdus rotatorius* (high fertility indicators), and *Watznaueria barnesae* (low fertility indicator) was established using principal component analysis. In addition, the distribution of *Nannoconus* spp. and absolute abundances of coccoliths (coccoliths per gram) were used for reconstructing nutricline dynamics of the surface waters. High surface water fertility coincides with low percentages of nannoconids and vice versa. Moreover, high percentages of nannoconids correlate with low absolute abundances of all other coccoliths. Based on the observed nannoplankton distribution pattern and a suggested similarity in ecological requirements between nannoconids and the modern taxon *Florisphaera profunda*, a model is proposed that couples nannoconid abundances with dynamics of the nutricline. Time series analyses of the nutrient index show fluctuations within the precessional band. The precession-controlled fluctuations of the surface water fertility may represent a monsoonal signal, with the nutrient supply in the surface waters depending on the strength of monsoonal activity. During periods of enhanced monsoonal activity, which were characterized by humid conditions and stronger

Thank you!

Martin Fenner,

<https://www.pidforum.org/c/pid-graph/17>

Realising the **European**
 Open Science **Cloud.**



EOSChub

eosc-hub.eu
[@EOSC_eu](https://twitter.com/EOSC_eu)



project-freya.eu
[@freya_eu](https://twitter.com/freya_eu)



SSHOC
social sciences & humanities open cloud

sshopencloud.eu
[@SSHOpenCloud](https://twitter.com/SSHOpenCloud)



EOSC-hub, FREYA and SSHOC receive funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. #777536 #777523 and #823782.

