Visualizing Science Using OpenAlex and VOSviewer

Nees Jan van Eck
Centre for Science and Technology Studies (CWTS), Leiden University

OpenAlex how-to webinar
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Outline

• VOSviewer intro
• OpenAlex + VOSviewer demos
• Q&A
VOSviewer

- Focus on visualization of scientometric networks
- Support for large number of data sources
- Text mining functionality
- Advanced visualization features
- Relatively easy to use
- Limited analysis options
- Developed at CWTS
Text mining

http://tinyurl.com/y2xoyckb
Users of VOSviewer

- Researchers
- Research institutions
- Research funders
- Scientific publishers
- Industry
Data sources supported by VOSviewer

OpenAlex  Crossref
Europe PMC  WIKIDATA
PubMed  LENS.ORG
Semantic Scholar  Dimensions
Web of Science  Scopus
# Bibliographic data sources

<table>
<thead>
<tr>
<th></th>
<th>OpenAlex</th>
<th>Dimensions</th>
<th>Scopus</th>
<th>Web of Science</th>
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</thead>
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<tr>
<td>Journals</td>
<td>180,000</td>
<td>110,000</td>
<td>40,000</td>
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<td>Publications</td>
<td>150 million</td>
<td>110 million</td>
<td>50 million</td>
<td>80 million</td>
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<tr>
<td>Citations</td>
<td>1.5 billion</td>
<td>1.5 billion</td>
<td>1.7 billion</td>
<td>1.8 billion</td>
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Bibliometric networks in VOSviewer

Bibliographic data source

- OpenAlex
- Crossref
- Europe PMC
- WoS
- Scopus
- Dimensions
- Lens
- Semantic Scholar
- PubMed

- Citation network of pubs / journals / authors / orgs / countries
- Co-authorship network of authors / orgs / countries
- Co-citation network of pubs / journals / authors / orgs / countries
- Bibliographic coupling network of pubs / journals / authors
- Co-occurrence network of keywords / terms
## Types of networks supported by each data source

<table>
<thead>
<tr>
<th></th>
<th>Co-authorship</th>
<th>Co-occurrence</th>
<th>Citation</th>
<th>Bibliographic coupling</th>
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</tr>
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Data access

Web of Science
Scopus
PubMed
Dimensions
LENS.ORG

download

API

VOSviewer
Visualizing scientific landscapes

extract network data
Demo 1: Co-authorship network of a researcher

- **OpenAlex**
  - Filters:
    - Author: Nees Jan van Eck
    - Source type: journal

- **VOSviewer**
  - API: OpenAlex
Demo 2: Bibliographic coupling network of highly cited publications

- **OpenAlex**
  - **Filters:**
    - Sources: Scientometrics OR Journal of Informetrics OR Quantitative Science Studies
  - **VOSviewer**
  - **API**: OpenAlex
  - **API request URL:**
Demo 3: Co-occurrence network of terms extracted from a set of related publications

- VOSviewer
  - API: OpenAlex
  - Search query:
    - Text (title): chloroquine
    - Year: 2016-2022
Demo 4: Co-occurrence network of concepts based on a set of collaborative publications

- **OpenAlex**
  - Filters:
    - Institution: Leiden University AND Delft University of Technology

- **VOSviewer**
  - API: OpenAlex
  - API request URL: https://api.openalex.org/works?page=1&filter=authorships.institutions.lineage:198358874+121797337&sort=cited_by_count:desc
Demo 5: Co-authorship network of researchers of a university and their collaborators

- **OpenAlex**
  - Filters:
    - Institution: Leiden University
    - Work type: article
    - Source type: journal
    - Year: 2019-2022

- **VOSviewer**
  - API: OpenAlex
Do it yourself!

openalex.org  www.vosviewer.com  app.vosviewer.com
Thank you for your attention!